TOMAHAWK FOR COLLINS?
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THE NAVY

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Front cover: HMAS ADELAIDE at sea. (ABPH Helena Charter)

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THE NAVY VOL 63 No 3
While Mark Schweiker takes a well-earned break Geoff Evans takes the helm. Since the beginning of the year the mainstream media has tended to concentrate on Australia’s domestic affairs – not unusual in a year during which a Federal election is due to take place no matter how many months distant – yet events in the wider world have taken place that will inevitably impact on Australia sooner or later. They include:

- The US-Sino ‘Spy Plane incident’.
- The Bush Administration’s reaction to the incident and arms and references to Taiwan.
- Developments in the US missile Defence Plan.
- The NZ Government’s Statement on Defence, and.
- Developments in the US missile Defence Plan.
- Diverging Australian political views on Foreign affairs and Defence issues.

At the time of writing, the actual sequence of events that resulted in a USN EP-3E surveilance aircraft being forced to land on the Chinese island of Hainan on 1 April has not been revealed. It is generally accepted that the Chinese fighter involved, subsequently lost with its pilot, caused the mid-air collision. Speculation however has been intense, ranging from ‘accidental’ to ‘deliberate’ contact, but a believable report suggests the Americans were observing a new Russian supplied Sovremenny class submarine on patrol that will inevitably impact on Australia sooner or later. Events in the wider world have taken place that will inevitably impact on Australia sooner or later.

The reection of President Bush and his Administration to the China Sea incident, in particular to the President’s reference to Taiwan, succeeded in raising temperatures in several countries, not least in Australia. Trade, friendship and formal alliances do not always sit comfortably together, requiring Australia as much as any country to exercise a high level of diplomatic skill in handling its relations with the United States, China and Taiwan.

Highly desirable in our diplomacy – political bipartisanship, is regrettably not a feature of recent statements by Government and Opposition foreign affairs and defence spokesmen.

With regard to New Zealand Government’s strategic plan to scale down the country’s existing naval and air assets – to varying point so far as air combat element is concerned – a worrying loss to Australia will be the withdrawal of the RANF’s A-4K Skyhawk fighters, up to six of which are based at Nowra and used by the RAN for training purposes. This means the loss of an important facility until the RAAF’s new RAE 127 Hawk jet training aircraft become available in about two years time. The absence of fighter aircraft must also make it difficult for New Zealand soldiers and sailors to conduct exercises with any degree of realism.

The RNZ will retain its two ANZAC-class frigates but if they are not up-dated from time to time, commonality with the Australian ANZACs will be lost. The decision to sell the HMNZS CHARLES UPHAM, a roll on/off vessel purchased for conversion to a military role, is curious given the intention to modernise the Army, presumably to make it more deployable following experience gained in East Timor and elsewhere in the region. Whatever the intentions of the New Zealand Government, the widespread perception in Australia is of a weakened friend and ally. This is to be ‘regretted’.

The Chinese challenge to Australian warships transiting international waters in the Taiwan Strait, although not the first incident of its kind, became the subject of a formal protest. The protest was dismissed by Australia but is a matter of regret, given the sensitvity of neighbouring countries separated by a narrow stretch of water – there are many such in Australia’s region – to the way ‘their’ waters are used. Matters of governance accepted by the international community.

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Australia's defence policy is based on maintaining effective continental defence while taking an active role in regional affairs and while seeking to participate more globally in multi-national operations in areas of primary strategic interest. Recent years have seen substantive re-evaluations of defence policy and maritime doctrine, sparking extensive debate about relevant force capabilities and mix. Tomahawks for Collins could be one of those new capability mixes.

Australia is a maritime power, and its strategic requirement to control the air and sea approaches predicates a defence capability built around maritime forces. Forces based at sea present governments with balanced and wide-ranging political choices. Playing an increasingly central role, the Royal Australian Navy (RAN) contributes to joint and combined operations including power projection and maritime strike capabilities.

Submarines and land attack missiles are noted for their strategic reach. In the context of the findings of the 2000 Defence White Paper Defence 2000: Our Future Defence Force, this paper will assess the role of the Collins-class conventional submarines (SSKs) in Australian defence strategy; the Australian Defence Force's (ADF) interest in acquiring a long-range land attack capability for power projection; and whether a weapon such as the United States Navy's (USN) Tomahawk Land Attack Missile (TLAM) is an appropriate and affordable option. It must be emphasized that, rather than just being desired, any such land-attack program must fill a specific capability gap in support of a clearly-defined strategic concept and purpose, and must be affordable.

Since the early 1990s, there has been much RAN interest in TLAM. The 1997 government strategic policy review (titled Australia's Strategic Policy), while noting that the Collins would provide a principal platform for maritime strike, concluded that a weapon such as the very long range of TLAM was not required to support the enduring strategic objective of the 'inner arc' of the maritime and air approaches. Yet recent years have seen a re-generation of the Australian debate. In the wake of the East Timor crisis, arguments for Australia's development of a cruise missile capability which might be employed as a cost-effective deterrent or an enabling force in such contexts were primary motivations in the decision of the Department of Defence to re-assess the cruise missile issue. With the ADF basing in Australia, the Collins-class submarines are capable of supporting a broad range of missions, including maritime strike, strategic deterrence, and other strategic and tactical missions.

The new Collins-class submarines are capable of deploying the Tomahawk cruise missile, which is a precision-guided weapon designed to provide a strategic nuclear deterrent capability. The Tomahawk can be launched from submarines, land-based land-attack missile systems, and aircraft. It is capable of targeting land and sea targets with high accuracy and can be used for a variety of missions, including strategic deterrence, precision strike, and maritime strike.

In conclusion, the Collins-class submarines are capable of deploying the Tomahawk cruise missile, which provides Australia with a strategic nuclear deterrent capability. The Tomahawk's precision-guided nature and long-range capabilities make it a versatile tool for the ADF, allowing it to support a wide range of missions, including strategic deterrence, precision strike, and maritime strike. The Collins-class submarines are a significant component of Australia's maritime strike capability, and their deployment of the Tomahawk cruise missile enhances the nation's strategic deterrent posture.

By Dr Lee Willett

The improved Collins class submarine HMAS SHEERAN on the surface (RAN)

More importantly, today submarines are required to make a much more wide-ranging and networked contribution to joint and combined operations. Captain John Dikkenber RAN, formerly Commander of the Australian Submarine Squadron, wrote last year that the submarine is 'a dichotomy of strengths and weaknesses, but on balance fulfills a unique niche in the defence spectrum' and provides vital complementary capabilities in a balanced force structure. As a result, the ADF submarine program has been fast-tracked under the defence capability plan of Defence 2000 so that, by the end of 2001, two Collins boats will be fully operational. Often regarded as the quietest submarine class in the world, with the class as a whole being upgraded with new technologies which were unattainable 10 years ago, the Collins-class will have a capability beyond its original specifications. Last year it was reported that the final two hulls of the class would be under threat unless more funding could be found to support the program. The purchase of the last two Collins boats is vital so as to meet the strategic requirement of having two operational submarines available at any one time, six hulls are required to maintain the necessary two mid-lifecycle cycles of three boats per cycle. It is evident, then, that the Collins' capabilities are performing well. Collins boats have excelled in several recent exercises, perhaps most notably HMAS WALLER in the US Navy's RIMPAC 2000 exercise. It has been reported that, to capitalise on the success of the Collins program, work on developing a new submarine class for the RAN will begin shortly after 2002.

TLAM

Defence 2000 states that the Australian Government views a strike capability as: an important element of Australia's military posture because it provides a flexible and affordable means to destroy hostile forces before they are launched towards Australia and when they may be most vulnerable. Strike forces can provide excellent support to Australian forces deployed abroad ... Australian submarines should be a part of Australia's strategic deterrent and be equipped with Tomahawks and other cruise missiles in order to provide a credible threat to potential enemies. This would enable the Collins-class submarines to act as a deterrent and complement the overall Australian defence strategy. The Collins-class submarines are capable of deploying the Tomahawk cruise missile, which provides Australia with a strategic nuclear deterrent capability. The Tomahawk's precision-guided nature and long-range capabilities make it a versatile tool for the ADF, allowing it to support a wide range of missions, including strategic deterrence, precision strike, and maritime strike. The Collins-class submarines are a significant component of Australia's maritime strike capability, and their deployment of the Tomahawk cruise missile enhances the nation's strategic deterrent posture.
These phrases suggest a requirement to attack land targets at distance. Today’s strategic environment is dominated by precision munitions, principally those delivered by missiles. Improvements in anti-ballistic missile defence suggest that cruise missiles might be a cheaper, more practical and strategically more enduring option. In terms of a platform for a land-attack capability for the ADF, several options for a surface fit have been proposed. Yet the debate has focused largely on a submarine fit. In terms of the missile, the debate has focused largely on TLAM.

Submarines launch cruise missiles, especially one with the capabilities and reputation of TLAM, a force capability - and thus, political status - multiplier of significant magnitude for a medium navy. The key issues for Australian defence policy is distance, from defence of the ‘inner area’ to participation in multi-national operations on a global scale. Amongst the cruise missile family, TLAM is the most unique. TLAM would bring to Australia a capability presently unmatched by any other regional power in the wider region. Submarines, with their stealthy flexibility and strategic flexibility, are the platforms best suited to TLAM or TLAM-capable submarines. The primary opportunity to project precise, deep-striking maritime force in land at the place and time of choice across all levels of warfare with reduced risks both of collateral damage and to friendly forces and non-combatants, and at a stand-off, covert and flexible platform for the ADF. Several options for a surface fit have been proposed by Chief of Navy Vice-Admiral David Stackelton. The ADF is almost at the stage where it’s gone beyond joint warfare to almost integrated warfare. Fusing sea, air and land power into a joint maritime strike capability, TLAM is an important asset in the strategic context. Yet Britain has discovered very quickly that the political and military value of TLAM in the right manner in the right political and military context. TLAM’s coercive and deterrent value may have been eroded; and that random firings question the viability of employing limited precision bombardment to implement economic and political leverage. If precision is to be used for strategic coercion, they must be employed within the correct political and strategic framework.

The key issue in this debate is the nature of Australia’s relations both with the US and with other powers in the region. Defence 2000 notes that strike capabilities “offer a significant advantage to regional coalitions”. While enjoying a strong relationship with the US, which the procurement of TLAM would endorse and augur an important and enduring capability, the deployment of a weapons system with such offensive capability might send threatening signals to other regional players. It is, however, questionable as to whether the US would consider selling TLAM once again.

If employed correctly, TLAM can be a very effective diplomatically or a war-fighting tool – with far fewer requirements across the spectrum of military operations. It has proven utility as a coercive and war-fighting tool – if employed in appropriate political and military contexts. From Operation DESERT STORM in 1991 through to Operation ALLIED FORCE in 1999, TLAM has performed as expected in military terms in each of the eight operations in which it has been used. The technologies that have been raised generally relate to the political and military sense in employing million-dollar, ‘war-winning’ weapons to attack targets which, occasionally, may be inoperative – for example, long range cruise missiles, or radar sites that have been operational again within hours – and the political signals which have been communicated in using such a weapon off a nuclear submarine, rather than a capital ship. On this latter point, in an era of casualty intolerance TLAM is perceived as a low cost, and politically clean, weapon. The key question is whether TLAM, in the right manner, in the right political and military contexts, can fit a variety of sea, air and land platforms. The strategic aim is to employ TLAM for purposes other than strategic coercion, then there is the issue of force levels. A relatively small inventory, particularly when aligned with that of the US and UK, is the long-term future deterrent that has been employed in the right manner in the right political context. Yet Britain has discovered very quickly that the political value of TLAM in the right manner in the right political and military context. Britain’s evolving concept of operations for weapons employment is indicating that the weapons system has greater tactical applicability than originally envisaged. As a larger number of missiles are required, the half-million US dollars that each new TLAM will cost might be better spent by a nation with a relatively small defence budget on a less expensive system, and/or supporting a purchase by sacrificing other capabilities. Australia is not unique in facing an imbalance between strategic aims and commitments, resources and programs. Moreover, the rapid increase in military spending and the use of long-range cruise missiles fired from transport aircraft, naval platforms, or even unmanned combat aerial vehicles.

If the ADF decides to procure a cruise missile capability, an associated issue is the time-phasing debate. Given the long-term choices on new platforms and the very nature of FOAS itself are made – could see the already-existing cruise missile capability, a strategic deterrence in the short term - and a new platform - in the longer term. Cruise missiles can spread more evenly a defence force’s aircraft burden, reducing the need for strike aircraft. TLAM has the capability to carry a larger number of stand-off capable and the role of manned aircraft and between different types of stand-off weapons. Air-launched ordnance, with its greater repetitiveness and greater availability, is more effective. F-111/F-15E and the F-111, the project will examine the ADF’s future mission requirements and (in what is a fundamental shift for any armed services) look at what effects-based capabilities would be.
Australia’s Maritime Doctrine

During the last year the RAN published ‘RAN Doctrine 1 – Australian Maritime Doctrine’. Surprisingly this is the first time that Australia has produced doctrine of this calibre. The document was written by the Seapower Centre and is reproduced in THE NAVY, with the Centre’s approval, given its importance to readers of THE NAVY, Australians and to the Navy League in general.

Chapter 1, Understanding Maritime Doctrine

The Purposes of Maritime Doctrine

The Royal Australian Navy’s (RAN) mission is to:

- be able to fight and win in the maritime environment as an element of a joint or combined force;
- assist in maintaining Australia’s sovereignty; and
- contribute to security of our region.

The RAN is developed, structured, trained and supported to deliver combat power at and from the sea. The Navy also needs to balance the maintenance of its combat readiness with the many requirements of peacetime operations and future capability development. The successful fulfilment of every one of these elements depends upon comprehensive and thoroughly understood maritime doctrine. As the Australian Defence Force’s (ADF) key doctrine document on the subject, Maritime Doctrine

Mifies planners and commanders approach stressful, dangerous, chaotic and unfamiliar situations with a clarity of thought based on rigorous analysis, and comprehensive knowledge of hard-won lessons from human history and national military experience.

The ADF’s definition of military doctrine is: ‘the body of thought on the role and conduct of armed conflict ... [which] contains, among other things, the fundamental principles by which military forces guide their actions in support of national objectives.’

Doctrine provides a basis for action founded in knowledge. Maritime doctrine is that component of military doctrine which sustains the employment of armed forces at and from the sea. This definition underpins the inherently joint nature of maritime operations and the fact that operations at or over the sea are only of utility so far as they can affect the fundamental outcome of a campaign, either directly or indirectly.

RAN Doctrine 1 - Australian Maritime Doctrine

Explains the key concepts for the conduct of maritime operations. This chapter explains the nature and the importance of maritime doctrine.

The Origins of Australian Maritime Doctrine

One of the principal themes of the RAN’s experience of doctrine is that its origins have been largely international for most of its history. As a smaller navy, and one which has built its roots in the RN and which has since frequently operated as part of alliance forces, it is impossible to expect the RAN to develop its doctrine wholly from first principles. Rather more are air forces and considerably more than armies, almost all modern navies operate as a very large base of shared international doctrine, allowing a level of mutual understanding that also manifests itself at much higher levels of command. All of Australia’s allies at sea operate with Allied Tactical Publication 1 as a standard reference when manoeuvring and communicating with each other. Most friendly navies have access to earlier but still valid versions of the same document, while those that do not are able to utilise an expurgated version which allows any warship to communicate and manoeuvre safely with another. Replenishment at sea is a generally shared skill that is the result of the extensive development, practice and dissemination of agreed allied procedures over the last century. Australia warships can and have replenished under way with or from those of many other nations. Singapore, Thailand and Indonesia, as well as with those of Canada, the United States and the United Kingdom. There are more than twenty other navies with which such operations either have been or could safely be conducted at little or no notice. Thus, Australian maritime doctrinal development is a synthesis – not just in a joint sense of national effort with that derived not only from the country’s major allies but a wide range of other sources.

A second theme is that maritime doctrine is one of complexity. Many different elements go to make up the fundamental components which include many factors not apparently related to warfighting. These range widely. One example is that there are logistic and maintenance procedures which combine to determine whether ships are capable of extended activities at considerable ranges from their bases or whether they must confine themselves to coastal operations. Another is that the RAN subscribes to and has developed for its own use the concepts of ship navigation and pilotage laid down within the RN’s Manual of Navigation which gives it a capacity for operations in shallow water and within the littoral generally that some other naval forces might hesitate to attempt. Thus, an activity essentially to the safe passage of ships has direct implications for her Navy’s combat potential in a key environment.

The levels of Maritime Doctrine

ADF doctrine is a hierarchy of keystone doctrine, philosophical doctrine, application doctrine and procedural doctrine. While these different levels of doctrine bear some relation to the levels of command – strategic, operational and tactical – the point at which one level is subsumed by another is rarely clear. That maritime warfare does not itself readily allow for clear distinctions between the levels of command complicates the issue further. Elements of procedural doctrine can have fundamental implications for every other level, just as changes in philosophical doctrine will have ramifications elsewhere.

Maritime Application and Procedural Doctrine

Application and procedural doctrine, which relate to the operational and tactical levels and the detailed mechanics of operations at sea, have a long professional history. Maritime Doctrine and Training Instructions, the RN’s Fighting Instructions of 1672. The RAN employed the modern British versions of Fighting Instructions as a primary doctrinal source for the operational and tactical levels of warfare until well into the 1970s, but in the more important case of guidance for operations and tactics were found in a range of North Atlantic Treaty Organisation (NATO), USN and Allied publications to which the RAN had access in the case of operations with the United States under ANZUS and with Singapore and Malaysia under the Five Power Defence Arrangement. Considerable effort went into the development of mutually agreed procedures, effort validated by the regular exercises in which the various nations participated and which provided the basis for combined operations in the event of contingencies.

When Australia’s strategic situation demanded a more self-reliant approach, the need for guidance tailored to the Australian circumstance was met at the tactical level by the development of Australian Fleet Tactical Instructions. Although this remains, under the editorial guidance of the RAN’s Maritime Command, it is published in 1994 into Australian Maritime Tactical Instructions, thereby recognising the inherent joint nature of all maritime operations and the extent to which it received RAAN and Army input. The issue of the Australian Defence Force War Manual (ADF) series, notably ADFP 6 – Operations and ADFP 6 Supplement 2 – Maritime Operations has created important linkages at the operational level, which will be completed by the forthcoming RAN Doctrine 2 – Australian Maritime Warfare.

Higher Level Maritime Doctrine

Keystone and philosophical doctrine have not enjoyed so long a formal existence as application and procedural doctrine but they are important in many ways. Higher level doctrine has educational purposes in addition to its direct utility for the employment of military force. It not only serves to educate and motivate personnel and improve their understanding of the roles and functions of their services, but can be used to inform those within government and the wider community of the ways in which military force can be applied by the nation in exercising its national power.

The first comprehensive analyses of maritime strategic doctrine in the western world date to the late nineteenth century and the work of historians and commentators such as the British Vice Admiral Philip C Dobbs and the American Rear Admiral Alfred Thayer Mahan. Further assessments in Britain included Sir Julian Corbett’s Principles of Maritime Strategy and the work of Admiral Sir Herbert Richmond, while later in the century there were increasingly sophisticated contributions from France in the work of Admiral Raoul Castex in the 1930s and from the Soviet Union by Admiral Gorskov in the 1970s. These combined continuing efforts, such as American Rear Admiral J.C. Wylie and Admiral Stansfield Turner to define maritime strategic concepts and match them to contemporary requirements. The post-war British Naval War Manual (the original BR 1806, issued in 1948, 1958 and 1969) was the principal source of higher level doctrine for many of the Commonwealth navies, including the RAN in the latter part of World War II.

The body of higher level strategic work has been extended further by contemporary thinkers and writers from Britain such as Professors Ken Booth, Colin Gray, Eric Grove and Geoffrey Till, and Rear Admiral Richard Hill. Within this country, Commodores Alan Robertson and Vernon Parker did pioneering work in the 1970s. More recently, Commodores Sam Bateman and Jack McCaffrey and Commander Dick Sherwood, partly through the mechanism of the RAN’s Maritime Studies Programme (now the Sea Power Centre) have done much to develop and critique Australian maritime strategic concepts and ideas.

RAN Doctrine 1 – Australian Maritime Doctrine draws on all these sources and many others as the keystone doctrinal publication for the RAN. It stands at the summit of naval doctrinal effort and fits alongside such publications as Land Warfare Doctrine (LWD) 1 – The Fundamentals of Land Warfare and Australian Air Publication (AAP) 1000 – The Air Power Manual, as well as

Combined and widely disseminated doctrines such as manoeuvring at sea or replenishment operations are adopted as standard procedures. The operational environment can be a relatively safe exercise. Here HMAS WESTRALIA replenishes HMCS REGINA during the recent Tandem Thrust exercise in North Queensland (RAN).
The RAM's area of operations is vast. From the tropical waters of the jurisdictional areas alone comprise more than eight million square nautical miles (or almost 16 million square kilometres). Our security requirements are such that maritime forces can find themselves rapidly moving from one extreme of climate and local sea environment to another. This requires a few weeks may transit from the tropical calm and heat of the dry season in the South East Asia archipelago to the huge seas and swell of the Southern Ocean.

Distance is the most striking single fact about Australia's strategic geography. Australia is very big and very difficult to defend. It is also very difficult to attack. Nevertheless, Australia's interests involve even greater issues of distance than do our imperatives of territorial defence alone.

One major interest is the continuation of the free flow of shipping through the South East Asia. The most direct routes to Japan and Australia's other major trading partners in East Asia are through the archipelago. Interruption of or interference with international shipping would have immediate effects on Australia's economy and its export competitiveness.

The other environmental factor of great relevance to Australia is its actual extent of access at all, or the only ways in which any substantial numbers of people or amounts of cargo can be delivered. Technological developments are increasing the capabilities of maritime forces to operate in close proximity to land to the benefit of better navigational techniques, but by improved environmental understanding and sensors and data exchange systems which allow seaborne units to "look" inward from the coastline over terrain to detect possible threats.

Although wide area surveillance systems are available to the powers and increasingly in medium power nations, maritime units, particularly submarines, remain difficult to detect and track. By their ability to move and remain covert, maritime forces can take great advantage of the wide ocean in remaining undetected and unpredictable in their intent. If this is accompanied by the well-ordered exploitation of weather and oceanography, the problem for an adversary can be complicated still further.

Social

Approximately 70% of the Earth's population live within one hundred and fifty kilometres of a coastline. In the case of Australia, this figure is well over 95% and the figure is even higher for most of South East Asia. Our region is thus a maritime - littoral environment to a greater degree than any other in the world. These statistics mean that the sea gives access to centres of human activity and thus to governments. Australians have tended to think of the sea in terms of living on the beach, Australia's beaches and surf. But the sea can be used for many purposes and the idea of our surrounding seas and oceans being a highway rather than a barrier is becoming increasingly well understood. The increasing incidence of illegal immigration has been an important factor in this process.

Economic

The sea remains the primary and far away the most cost-effective method for the movement of international trade, both by value and weight. In Australia's case, more than 70% of our exports and imports go by sea in terms of value and well over 95% by bulk. Although Australia is largely self-sufficient for most resources, it is increasingly dependent upon petroleum imports to meet domestic demand, particularly in heavy crude oil. The country's economic well-being depends upon the maintenance and expansion of export trade, while essential manufactured goods, industrial tools and high technology equipment are amongst our imports. Coastal shipping not only plays a substantial role in Australia's domestic transport network, but its free movement is also essential to the survival of many cities and towns in the north.

East Asian nations' dependence on maritime trade is even more acute than that of Australia. Japan is absolutely dependent upon seaborne imports for energy and raw materials, as is South Korea. China is becoming increasingly reliant upon the sea, particularly for petroleum imports. Within South East Asia, the relative lack of land transport systems increases the dependence of the region upon the sea for large exports of goods and people.

The seabed is becoming an increasingly important source of resources. Australia depends upon offshore oil fields for much of its domestic petroleum production. Australia's Exclusive Economic Zone is one of the largest in the world and its surveillance and protection are placing increasing demands upon national resources. Although the waters of our EEZ are relatively poor in biomass, fisheries constitute an important part of the national economic effort. In 1997-98, our fishing production yielded nearly 223,000 tonnes, worth AUD$1.86 billion. 0'1% of that catch was exported, mainly to Asian markets.

Law and International Law

Australia's combat forces operate in accordance with international and national laws which set out the rights and obligations of the ADF and govern their use of force. In addition, maritime forces operate within an increasingly complex legal environment. The long held concept of Freedom of the Seas has undergone important modifications in the last two decades, particularly as a result of the 1992 United Nations Convention on the Law of the Sea.

Historically, maritime forces have been prohibited from conducting operations within the territorial seas of a neutral state. This restriction has become more significant with the extension of the limit of territorial sea to twelve miles and the introduction of archipelagic waters, to which other rules apply. Warships may pass through such areas, but they must not delay their transit or operate weapons or some active sensors. There are designated Archipelagic Sea Lanes and also International Straits to which such rules do not apply, although some limits on action remain, such as the requirement to transit "expeditiously. Maritime forces can also be affected through their organic and supporting air assets by the existence of air space control regimes, which may mean additional restrictions on operations. In addition to these restrictions, however, there remain rights of access for maritime forces to sea areas, provided that such access is not prejudicial to the interests of the coastal state. The passage of ships and aircraft, activities which maritime forces may engage in have been affected by LOSC, the movement that those forces can undertake has been less confined. This is an important factor in estimating the utility and the access of maritime forces in contingencies.

Within the Littoral Zones and EEZs of neutral states, maritime forces must operate with regard to the rights of those states. In general, this regard is compatible with the general care which belligerents are required to apply to the natural environment.

There are maritime regions in which the legal regime has even greater complexities and anomalies exist which may be significant for maritime forces, including those of Australia. Australia has significant claims to territory and maritime zones in the Antarctic. The Treaty regime in the Antarctic is not recognised by the majority of nations, thus leaving open the question of jurisdiction and ownership of natural resources. Similar problems occur to fisheries outside national EEZs, even where there are clear conservation implications in uncontrolled fishing. While international conventions have been developed to govern such aspects of the high seas, it is too early to be certain how such regimes will operate effectively.
Flash Traffic

RAN bullied by PLAN

The Chinese Government, through its embassy in Canberra, has lodged a formal protest with the Australian Government over three RAN ships exercising their ‘right of passage’ through the Taiwan Straits on route to Hong Kong on April 17.

The protest was lodged on ANZAC Day, despite the incident occurring well before A PLAN (Peoples’ Liberation Army Navy) Captain accused HMA ships SUCCESS, ARUNTA and NEWCASTLE of breaching China’s 12-nautical mile territorial zone. The Australian ships were steaming from Pusan in South Korea to Hong Kong when incidentally it was in China as part of the North-East Asian deployment. The PLAN Captain reported that the Australian ships refused to change direction and continued through the Taiwan Straits after he ordered them out of the area. It is unknown what action the PLAN ship then took but it is known that they were intercepted and escorted by a PLAN warship. One could expect that China would use its ships to be able to protect what is considered a similar situation to the EP-3 incident when a PLAAF F-S fighter was lost.

The replacement ESM system, known as Centaur, will introduce processing and display improvements based on technology from the RN’s Outfit UAT series of ESM systems. First fits are expected in early 2002, with the programme lasting 18 months. The RAN is also to upgrade the ESM capabilities on its FFGs. The ships are to receive the Rafael C-Pearl ESM system as part of the FFG Upgrade Programme.

Navy League Shield awarded to NEWCASTLE

On 23 March 2001, Commodore M. J. YoUl AM RAN(Ret), representing the Federal President of the Navy League of Australia, presented the Navy League Community Service Award Shield for 2000 to HMAS NEWCASTLE, The Navy League Community Service Award Shield for 2000.

It is not an easy decision to make as ships and establishments vary greatly in size. Obviously, establishments such as HMAS CERBERUS, with a ship company of several thousand, has more opportunities to qualify for the award than a patrol boat with a crew of 20 or so.

Commander Mark YoUl, AM RAN(Ret), representing the Federal President of the Navy League of Australia, presents the Navy League Community Service Award Shield to HMAS NEWCASTLE. The Navy League Community Service Award Shield was accepted on behalf of the assembled Ship’s Company by CPOMT Walter Hoegee, who had played a major part in the various community aid projects which the Ship’s Company had undertaken.

The Community Service Award is an award which is presented by the Navy League of Australia to the RAN ships or establishments which during the calendar year have made the most significant contribution to the community. The contribution need not be made in Australia. It can be made anywhere in the world and can range from a rescue at sea, fighting bushfires or raising funds for charity.

The Federal Council of the Navy League selects the winner of the award from nominations forwarded to it by the various RAN commands.

Until this occasion it had been presented to the ship only 5 occasions — HMAS CESSNOCK (twice), HMAS BRISBANE, HMAS ANZAC and HMAS ADELAIDE thereby.

HMAS NEWCASTLE was a very worthy winner of the Navy League Community Service Award for 2000 in view of the excellent work which the Ship’s Company had done in supporting the Hunter Valley Orthopaedic School, Marion, and the excellent work done to support the local community in East Timor as well as the work done to assist various schools and charities during the Ship’s visits to Fiji, Vanuatu and Western Samoa.

Commodore YoUl congratulated the members of the Ship’s Company for their efforts and particularly for the fact that, although they had busy jobs on board, they were prepared to spend their spare time raising funds for the Australian ships or establishments which during the calendar year have made the most significant contribution to the community. The contribution need not be made in Australia. It can be made anywhere in the world and can range from a rescues at sea, fighting bushfires or raising funds for charity. The contribution need not be made in Australia. It can be made anywhere in the world and can range from a rescue at sea, fighting bushfires or raising funds for charity.

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Regional role for South Korean Navy

In a speech to graduating midshipmen at the Korea Naval Academy in the southeastern port city of Jinhoe on March 19, President Kim announced plans to form a ‘strategic mobile fleet’ to secure sea lanes in East Asia in the event of a maritime conflict.

The President observed that key components of the new Strategic Mobile Fleet ‘are on their way’, saying, ‘Work has begun on the construction of Aegis destroyers, the dream of our Navy. Next generation submarines and maritime patrol aircraft projects are also being undertaken’.

According to RoK Navy spokesmen, the Strategic Fleet will be composed of 7,000-ton Aegis destroyers, 1,000-ton 214 class submarines and P-3 Orion ASW aircraft.

‘We believe that the envisioned fleet will play a role in projecting sea power into uncontrollable times of crisis,’ the spokesman said.

Currently, the South Korean Navy is divided into three sectors, one each assigned to the East, West and Sea surrounding the southern half of the Korean peninsula. The Strategic Fleet will be able to deploy rapidly into trouble spots around the region to protect South Korean trade and lines of communication.

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Raytheon awarded STANDARD missile contract

The US company Raytheon has been awarded a US$190.2 million contract from the USN for STANDARD-Missile-2 fiscal 2001 production.

Raytheon will deliver 75 Block IIIA missiles, 80 Block IIIB ordnance alteration kits to upgrade SSM-2 Block IIIA missiles to the SM-2 Block III configuration. 40 Warhead Compatible Telemeters; and spares, shipping containers and handling equipment. The contract also includes 48 Block III and IIIA missiles for foreign military sales.

The STANDARD-Missile-2's primary role is to provide area defence against enemy aircraft and anti-ship missiles. The SM-2 Block IIIA entered the US fleet in 1998, and incorporates a side-mounted infrared seeker to aid in engagement guidance.

STANDARD Missiles are operational on guided missile cruisers, destroyers and frigates in the USN and is in operation with more than 13 allied Navies including the RN.

LOCASS compatible with Mk-41 VLS

Lockheed Martin is proposing two new types of vertically launched weapons to arm the USN's DDG 21

LOCASS is a helicopter-borne, airframe, digital autopilot and propulsion system of VLA, with the torpedo being replaced by a Tactical Munitions Dispenser accommodating the four LOCASS rounds. Following a vertical launch, the submunitions are dispensed at a height of 15,000-20,000 ft and acquire signals from Global Positioning System. They then cruise under their own power at 350kts out to a distance of up to 200km.

On reaching the target area they descend to 750ft, at which they can fly a loiter pattern at 215kts covering a 25nm area, searching for targets with their radar seekers. The rounds can inter-communicate in flight to assist in determining target priorities.

US Lassen Commissions

The USN has commissioned USS Lassen (DDG-82), the newest in a series of Aegis guided missile destroyers built by Litton Ingalls Shipbuilding. USS Lassen is the 32nd ship of 58 Arleigh Burke (DDG-51) Class destroyers currently authorised by Congress, and the 14th to be built by Ingalls.

DDG-82 is Ingalls' second Aegis destroyer built under Flight IIA, a major upgrade to the original class, featuring a hangar for two Seahawk helicopters.

Following DDG-82, Ingalls has contracts and options to produce 11 more Arleigh Burke class destroyers, with six of those ships in various stages of production.

The naming of DDG-82, honours a recipient of the Joint Chiefs of Staff. James Edward Lassen. The ship is named for one of the six ships built under the Type 45 destroyer programme, to allow for COTS improvements as technology advances, will be upgraded to the Flight IIA program, to allow for COTS improvements as technology advances.

The entire SH-60R Multi-Mission Helicopter production programme is valued at approximately US$2.5 billion and involves the production of 243 aircraft by 2012. These aircraft were originally delivered in the 1980s and are now being upgraded. The full production contract will include 27 aircraft per year. Lockheed Martin is the prime contractor with total responsibility to oversee all systems integration efforts.

Italian Navy evaluates new 127mm gun

The Italian Navy Laura-class frigate HERSAGLIERE is conducting an operational evaluation of the new Obridea 127mm/54 LK lightweight naval gun as was on display during the recent IDEX exhibition in Abu Dhabi.

The 127mm/54 LK features a stealth-optimised turret, weighs 22 tonnes, has a rate of fire of 35 rounds/min and can be fitted to ships as small as a corvette.

It is designed for naval gunfire support and is in a secondary role, in an artillery. According to Obridea, the LW will fit on board narrow-beam ships due to the compact design of the ammunition feed system.

The gun would be able to fire 127mm ammunition types and has provision for a proposed family of European extended range guided rounds. The projectiles and propelling charges are housed in the gun tube, permitting a four-round burst. The design is being marketed as part of a marketing package.

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The lightweight version of its 127mm naval gun from the instalments of DKr28 million left.

The ship's top speed is 25kts however, the acceptable maximum is 65dB. The new M-51 nuclear missile and receive the right to return the submarine, in

New naval link between Sweden and Denmark

Sweden has announced that it is transferring the Type A14 submarine NACKEN to Denmark under a co-operative lease-to-buy deal which will see Danish remote mine-mapping technology supplied to the Royal Swedish Navy (RSwN) for test and evaluation.

The terms of the transfer agreement include the promise of a 'discount' on future orders of similar units to those volunteered in the most recent Danish shipbuilding programme. Other than that, the Navy believes, will entail projecting offensive and defensive firepower ashore. Over the horizon, the new General Dynamics Mk-46 Mod I 30mm weapons station to its Arleigh Burke-class (DDG-51) destroyers in

A 76mm gun as used on the RAN's FFGs. A new course corrected shell: 'Dart', being developed by Othreda will make the gun far more effective in the anti-ship and theatre missile defence role.

Charles de Gaulle propeller problems continue

The French Navy (Marine Nationale) has returned its new aircraft carrier CHARLES DE GAULE to service in the Mediterranean fleet despite another problem with its propellers. The Navy said the new propellers, which are left over from provision to the mothballed French carrier CLEMENCEAU, were far too noisy and needed modification to bring the noise within acceptable limits. Noise levels of up to 100dB have been recorded, when the carrier is travelling at between 10kt and 18kt, the acceptable maximum is 65dB. New propellers for CHARLES DE GAULE have been ordered but will not be delivered until early 2002.

If France orders a second carrier at the end of the 2003-08 procurement plan or in the subsequent plan it would mean the vessel would not enter service before 2015 at the earliest.

76mm gun gets more Bang

The Italian firm Othreda has announced an improvements to its 76mm guns as used on the RAN's FFGs. The 'Dart' guided shell is a course-corrected shell for use against anti-ship missiles. The 'Dart' uses radar guidance from off-mount and on-mount sensor. The former tracks the target and the latter the shell, which is in a sabot but retains a load similar to that of existing projectiles. Guidance commands are relayed to a canard control system which, the manufacturer claims, can increase velocity and cause the round to maneuver at up to 30g. Dart will have a range of 2.7nm (5km) and is being developed to meet an Italian Navy requirement.

New anti-terrorist guns for DDG-51s

The USN is planning to retrofit the General Dynamics Mk-46 Mod I 30mm weapons station to its Arleigh Burke-class (DDG-51) destroyers in the wake of the attack on the USS Cole. The weapon station is a modified (85% compactness) version of the
Russian SSN experiences ‘engine problem’

In a scene reminiscent of the Cold War a Russian Victor III-class nuclear-powered attack submarine (SSN) surfaced in the Barren Sea on 14 April with engine problems and had to be taken under tow to the naval port of Murmansk. The submarine reportedly emitted exhaust or possibly smoke on surfacing.

Norway’s Defence Command North, closest to the incident, ascertained that the incident did not warrant a serious threat to overall nuclear war-faring procedures. It is still unknown what the engine problem was or what caused it, let alone where any casualties were involved. However, given the Russian Navy’s treatment of the truth and realities of the KURSK after it sank one could not expect too much of an explanation from the Russians even if the Victor III incident was a serious one.

T.S. ENDEAVOUR commission new flagpole

On Saturday 3 March, a new flagpole was erected at T.S. ENDEAVOUR, Cairns. The project, to retain some local history, was officially completed as the flagpole was put into position. The flagpole was the foremost of M.V. Triton, which Navy League Cairns, operated as a youth training vessel for 16 years between 1976 and 1992.

M.V. Triton, at 160 tons, was built and launched on the Barrow River, Cairns, in 1943 as General Muscatine, saw service in the South Pacific during WII. operated on the Townsville coast for a few years as George Bass and finally as Triton III, the Queensland Government Flagship for Thursday Island for 20 years prior to being handed over to the Cairns Branch of the Navy League in 1976, when she was renamed Triton.

R.F.A. HMAS ANZAC Departs for Gulf

As part of the Government’s commitment to supporting the United Nations Security Council resolutions on Iraq, the frigate HMAS ANZAC will depart Australia in early July for a three month period of operations with the Multinational Interception Force (MIF). The Australian-built ship and its 164 personnel will operate as part of a US Navy Task Force deployed in the Persian Gulf.

The MIF was mandated by UN Security Council Resolution 665 in August 1990. Its purpose is to conduct maritime interception patrols and boarding operations to enforce sanctions imposed on Iraq after its invasion of Kuwait.

This deployment is an example of Australia’s ongoing commitment to global security. It also highlights the importance of maintaining interoperability and cooperation between Australia and the other participating allied nations.

This is the tenth time that a Royal Australian Naval vessel has undertaken MIF operations since it commenced in February 2000 (with HMAS Sydney during the Gulf War). The last was the Guided Missile Frigate HMAS MELBOURNE, which deployed in 1999.

Recent issues of THE NAVY have contained articles and comment on a Littoral Support Ship (LSS), essentially a naval vessel built largely to commercial (merchant ship) standards.

It is interesting to recall that in 1983 the Navy League proposed the ‘national merchantman’ capable of taking the RAAF’s F/A-18 fighter to sea, by providing on-the-spot air cover, greatly increasing the flexibility of the RAAF’s combat ship. The proposal was set forward in the aftermath of the then government’s decision not to replace the aircraft carrier MELBOURNE with a conventional carrier, considered at the time to be too far too expensive for the RAN. The League’s ‘Support Carrier’ was suggested as a relatively inexpensive substitute.

The League assembled a small but highly qualified team from among its members to study the proposal; Navy provided additional technical information as required.

In order to achieve the desired savings it was decided it would be necessary to build the Support Carrier predominantly to Lloyd’s requirements with ‘navalisation’ of construction, services and systems restricted to those standards normally embodied in a Royal Navy Fleet Auxiliary. The carrier would have no fleet command facility or long range detection or defence capacity except that provided by her air wing and/or accompanying combat ships. The RAN possessed three guided missile destroyers well equipped to operate in conjunction with the carrier: Self defence capacity would be limited to a close in weapons system but would not form part of a sophisticated ship system.

The carrier would be fitted to tow fuel and arm aircraft as well as operating off but aircraft refuelling and maintenance on board would be limited. A lift, catapult and landing aids etc could be fitted together with minimal navigation, radar and communications systems. The dimensions of the Support Carrier were determined by the take-off and landing requirements of the F/A-18 resulting in a vessel with the following characteristics:

- Displacement: (tons) 20,000 light; 31,000 deep
- Main Dimensions: (feet) 770 x 70 (over flight deck) x 105
- Main Engines: 4x20,000hp Diesel - 80,000hp to 4 Shfts.
- Speed: 26 knots
- Complement: 600 RAN & RAAF
- Extensive trials forklift and other equipment

The shipbuilder’s cost of the Support Carrier was estimated at $480 million.

THE NAVY

L. F. W. Vickridge, AM, OBE

This column noted in the October-December 1998 issue the award of the Order of Australia to Captain Len Vickridge, long time Naval Reserve Officer, President of the Western Australia Division of the Navy League and Life Member of the League.

With regret we report in this issue Len Vickridge’s death on 10 April 2001 at the age of 82. Len is survived by three sons and two daughters: His wife Elizabeth (Peggy) died nine years ago. The President of the Western Australia Division, Mr Arthur Hewitt, represented the Navy League at the Funeral Service attended by Len’s many friends, colleagues and representatives of the numerous organisations with which he was involved.

A rough drawing of the Navy League carrier for all admirals and purposes it resembles an aircraft carrier.
DD-21; The 21st Century Dreadnought

With the RAN currently studying the requirements for its new Air Warfare Destroyer THE NAVY looks at the US's own new destroyer program with the question 'what can the RAN learn from DD-21?'

The U.S. Navy's 21st century Zumwalt-class Land Attack Destroyer (DD-21) will comprise 32 ships and be the first in a family of 21st century surface combatants. This next-generation warship will be a multi-mission destroyer focused on land attack operations. DD-21 will replace aging Oliver Hazard Perry-class frigates (FFG-7) and Spruance-class destroyers (DDG-63) and provide forward presence and credible deterrence while operating independently or as an integral part of a Naval Joint, or Combined Expeditionary Force. In order to ensure effectiveness in Joint littoral operations, DD-21 will feature active and passive survivability features, such as in-strike mine avoidance capability and full-spectrum signature reduction, as well as the most advanced C4ISR Command, Control, Communications, Computers, Intelligence, Surveillance Reconnaissance (C4ISR) and automated weapon systems integration. The Navy has successfully executed a competitive, price-based acquisition strategy for DD-21 that addresses 21st century Fleet requirements and takes advantage of industry's vast resources, expertise, and ingenuity. The DD-21 Program's streamlined acquisition approach seeks maximum innovation and design flexibility while facilitating cost savings through use of commercial market technologies, non-developmental items, and privatized life-cycle support. Program leaders have aggressively implemented acquisition reform initiatives and empowered industry at the earliest possible stage of the ship's concept design in order to achieve revolutionary design capabilities and substantially lower total ownership cost for DD-21.

Program Status

USN officials have instituted a unique acquisition approach for the Zumwalt-class Land Attack Destroyer (DD-21) that provides industry with an overarching set of operational requirements and cost parameters instead of detailed design and performance specifications. This less restrictive approach encourages innovation and offers industry maximum latitude to create designs. This includes an aggressive pursuit of industry's vast resources, expertise, and ingenuity. Industry maximum latitude (i.e. trade space) to guide their proposals for developing, building, delivering, and supporting the ship through its service life. The Blue and Gold teams are competing for DD-21 - the Blue Team, led by Bath Iron Works (BIW) with Lockheed Martin Corp. as systems integrator, and the Gold Team, led by Ingalls Shipbuilding Inc. (ISI) with Raytheon Systems Co. as systems integrator. Contractual management for both teams is administered by the DD-21 Shipbuilder Alliance, a cooperative business unit formed by BIW and ISI. The USN plans to select the winning team's DD-21 System design shortly. The first ship award is scheduled for fiscal year 2005 with fleet delivery in fiscal year 2010.

ZUMWALT

When USS ZUMWALT, the lead ship of the DD-21 class, gets to sea in 2010 it will be just over 100 years since the Royal Navy's battleship HMS DREADNOUGHT entered service. Both ships have much in common. For their time they proved to be exceptionally powerful combatants that not only introduced a range of new weaponry and tactics but also took to sea new propulsion and machinery concepts.

• The first major ship where the sailor is engineered into the ship from the beginning;
• The first second generation electric drive combatant;
• The first third generation phased array destroyer.

A Closer Look at the Zumwalts

Manning

Whether the Zumwalts are able to operate with 95 personnel is questionable. But what is clear is that their crew size will be dramatically smaller than the DDG-51 class of destroyers. How will this be achieved? Top down human systems integration (HSI) is vital. A fresh look at the myriad of shipboard activities combined with providing the dollars to come up with hardware or softwar solutions will lead to fewer personnel required for logistics, replenishment, replenishment and maintenance. At the same time the need to retain people in the Navy will be addressed by vastly improved living conditions (two berth cabins, gyms, satellite entertainment and training facilities) and reducing the need for labourious cleaning, painting and watch-standing.

Stealth and Survivability

The radical shape of the Zumwalt is designed to meet the requirement to reduce its radar, visible, acoustic and infra-red signature. This will dramatically cut detection and identification opportunities for enemy surveillance assets and missiles. It also increases the effectiveness of Zumwalt's decoys. Features include extensive use of composite materials, an advanced degrading system, increased system redundancy, more automated damage control and sensors systems using the Reduced Ships' Crew by Virtual Presence (RSPV) concept. RSPV will include a comprehensive, wireless, intra-compartment sensor network using motion, fire, flooding, stability and gas sensors in all compartments. RSPV will also provide Personnel Status Monitors that will track the location and health of all personnel onboard.

Information Management

As you would expect the information management systems in the Zumwalt will be leading edge technology. At the heart will be the Whole Ship Computing System that will use commercial off-the-shelf open architecture. The aim of the onboard combat information system will be to...
correlate data from a much wider array of external and internal inputs and then integrate and filter information to enhance battle-space awareness. It is anticipated the shape and layout of the Operations Room will be revolutionary.

**Weapons and Sensors**

**Land Attack.** The Zumwalt's will strike enemy land targets 1500nm away with the future Advanced Land Attack Missile (ALAM) while the 155mm Advanced Gun System (AGS) will deliver precision guided rounds out to 200nm. The ships will feature a Naval Fire Control System (NFC) which will automatically process and assign land attack fire missions to ship and task group weapon systems. This is network centric warfare in action.

**Air Warfare.** The Zumwalt will take to sea two new phased array radar systems. It will use the VSR Volume Search Radar for long range air detection and the SPY-3 MFR Multi-function Radar for surface search and fire control. In addition it will have the advanced integrated electronic warfare system (A/EWS) (see TFE NAVY Vol 62 No 4) incorporated into one of the phased arrays. The weapons associated with these sensors will be the Standard family of missiles. As a result the Zumwalt will be able to engage more targets than a DDG-51 and be better able to deal with the demands of a littoral battle-space.

**Underwater warfare.** The DD-21 underwater sensor suite will be the most extensive to date and include hull mounted sonar for submarine and mine detection, and a multi-function towed array. These are linked to remote minehunting systems, decoys and torpedoes.

**Aviation.** The Zumwalt will be the first surface combatant in about 40 years to be built to take UAVs (remember the DASH). The UAVs will combine with manned aircraft to conduct the full spectrum of surface warfare and underway warfare tasks.

**Propulsion.** A major DD-21 innovation is the adoption of an electric drive integrated power system (IPPS). IPPS revolutionizes warship design. Gone are reduction gears and lengthy propeller shafts. The number of prime movers is reduced and there is greater flexibility about their location. IPPS frees up space for more fuel or weapon systems. It also dramatically reduces maintenance and manpower demands. The savings in manpower may be about 20% with a similar saving in fuel efficiency. Equally important is the reduction in thermal and acoustic signature of the ship.

**Logistics.** The DD-21 will introduce many changes to traditional logistic support. Industry will be the Full Service Contractor. This is part of the idea of looking at the complete system to save costs of providing capability. As such greater emphasis is being spent on:

- reducing maintenance;
- making it easier to upgrade systems;
- increasing commonality with future ships (such as the cruise missile variant of DDG-51) and;
- satellite reach back to logistic and diagnostic databases and expertise.

**DD-21 and the RAN.**

While the DD-21 would be an impressive addition to the RAN, at a sail away price of US$350m each, it is problematic whether it would ever fly the Australian White Ensign from its quarterdeck. Nevertheless the Zumwalt will have a profound effect on the RAN in two ways. First it will likely introduce and indeed some systems that may be fitted in the RAN’s Air Warfare Destroyer and future ships. More importantly though the Zumwalt shows that:

- Surface combatants can be built that possess impressive offensive and defensive capabilities well suited to the complex and demanding littoral environment, and
- The adoption of best practices in design, acquisition, logistics, and technology, has the potential to provide affordable combat capability.

These lessons are directly relevant to personnel and dollar constrained RAN that in the next decade must deliver consider combat power in the littoral environment.

*Lately the pages of the US Magazine 'Proceedings' have been filled with calls for 'rebalancing the (US) fleet' to ensure access to and dominance of the littoral battle space. A fleet mix of 'Economy A' and 'Economy B' ships has been proposed to accomplish this. The Economy A ships are envisioned as economical power-projection ships, and the smaller Economy B ships are to provide risk tolerant access to the littorals (i.e., the Streetfighter concept). A necessary characteristic of these ships is 'sturdiness'. The word 'sturdiness' can be defined several ways, but here it refers to the capability of a ship to return fire after taking one or more missile hits. Presence and operations in hostile littorals are indeed high-risk, and this - coupled with a political climate of low tolerance for casualties - points toward sturdy combatants when the fleet is rebalanced.*

**Why Sturdiness is Needed Now.**

With the advent of missiles and high-tech electronics, combatant designs changed from being weight-critical to volume-critical. Much of the high-tech gear has been accommodated high in ship's superstructures, where heavy protection is a practical. Ships rely on active defence for protection. This status may have been acceptable in the days of the Cold War with its blue-water missions. When operating in the littorals, however, with clutter from land and commercial traffic, hidden enemies on sea and land, limited reaction time, problematic routes of engagement, and unintended tactics, the old ways of doing things may not be acceptable. The risk of taking hits from surprise attacks is multiplied and even inferior opposing forces can cause serious setbacks in coastal areas. Unless we are prepared to accept severe damage, combatants must be able to take hits.

* Other forms of future surprises can emerge through technology. Even if our combatants were updated quickly, their effectiveness against an inadequately known opposition cannot be predicted - at least until the shooting starts. In addition, weapon and defence systems are becoming increasingly high-tech and computer-based, and that must be fit into a fixed-budget design - must be charged.*

**By Ilh S. Hunsor**
complex systems often break down. Similarly, human operators also can fail, especially under the combined effects of limited realistic training and the strain of combat. The vision of a perfect defense that can prevent all missile hits is not realistic. The results of hits can be severe. We need only recall what happened to the Israeli ELAT, the Pakistan KHAIBAR, USS WORDEN (CG-18), HMS SHEFFIELD, Atlantic Convert, the USS STARK (FFG-31), the Iranian SHAHAB, and the Turkish MAKVEN.

These ships all were sunk or severely damaged. The hits on SHEFFIELD and the STARK demonstrate clearly the danger of uncontrollable fires, which can be especially bad when induced by leftover propellant from missiles fired from short range. In fact, both of these ships were done in by fires — rather than by the damage from warhead explosions (some of the hits involved dead warheads that did not explode). None of the ships mentioned here had any special features to provide sturdiness against missile hits.

The Challenge of Sturdiness for Missile Combat

After Operation Crossroads in 1946 the US’s first nuclear tests against ships it was generally believed that sturdiness against nuclear weapons was impossible to attain. Research in the 1950s and 1960s into weapon effects and damage potential showed otherwise, however. It actually was found that, with relatively minor effort, ships could be hardened to reduce damage ranges by about 35%. This had significant consequences for tactics that could be used for the nuclear war at sea contemplated at the time. Similarly, when the missile age evolved, it was widely perceived that sturdiness against anti-ship missiles was impossible given the accepted norms for combatant designs. But research has shown that improvements in sturdiness against missiles are possible as well. In question is how much better present combatants can be constructed, and how much change is needed against future missile threats to make a significant difference. This is not a simple matter — it requires “passive protection,” and this is not a stock item that can be fit in readily, nor can it be designed ex novo. Designs need to be developed to ensure protection against future threats.

To be effective, an effective passive protection design must consider all current and future potential enemies’ weapons’ effects and their damage capabilities. These effects will vary, with warhead size, type and shape, hit location, and with ship construction. A considerable variety of missile and warhead designs can be found in use, ranging from those designed to explode after penetrating the ship (semi-armour piercing) to those designed to detonate outside (blast, fragmentation, and shaped charges). The latter may have proximity or contact fuses, or both.

The sizes of current anti-ship missiles and their warheads vary considerably as well. In general, the smallest are anti-air missiles used in a surface-to-surface mode, with warheads less than 100 pounds. The largest missile warheads are substantial. The most common type probably is the semi-armour piercing, a high-velocity metal jet, with a metal-lined cavity in the front of the warhead, which produces a hyper velocity metal jet (Mach 20 to 30) capable of penetrating heavy armour or any other materials they encounter within the ship. Because of the great velocity of the penetrating jet they can ignite stowed on-board ammunition unless it is protected appropriately.

History is replete with instances of exploding on-board ammunition that destroyed ships or exacerbated the damage caused by attacking weapons. A few of the better known cases are the USS FRANKLIN (CV-13), LUSCOMBE BAY (CVE-56), SHAW (DD-373), and HALLIGAN (DD-584), and HMS HOOD and BARHAM, all from World War II, when all the hits occurred in random locations. Today’s stowed missiles are even more volatile than the ammunition of that war, and the weapons of the future could be precision-guided and aimed at specific shipboard locations. Except for this mechanism, missiles are far less efficient in sinking ships than torpedoes, because they hit above the waterline. In general, small ships are easier to sink than big ones.

Future warheads could employ explosives that enhance the desired damage more effectively, and they could employ more effective configurations. As long as they use explosives, however, they can be expected to cause damage in ways similar to those of current weapons. Future missiles could be different from today’s; they can be expected to be stealthier, faster, and more precisely guided, all of which will tend to give them a higher hit probability. It is unlikely that future missiles would be made bigger to increase their damage capability, for greater size would be counterproductive, making them faster and more stealthy.

The challenge of providing passive protection is to contain inevitable damage in a way that prevents impairment of ship functions. Two different approaches to incorporating effective passive protection can be followed. One is to adopt the citadel concept used in battleships, where all vital components were protected behind armour shields (gun turrets outside the citadel also were heavily armoured). Battleship-type armour would not work, but new versions of a protective system against missiles could be developed through research. It would require significant space, but without the weight of heavy armour — for that reason it will require a rather large ship. The concept has the advantages that personnel would be protected along with combat systems, the propulsion system, and the ammunition, and the need for making individuals survivable can be de-emphasized. In addition, the inevitable damage inflicted by hits could be kept near the exterior of the ship and fires could be prevented from spreading to the interior. Sensors outside the citadel would be redundant and reduced in number by using multifunction antennas.

The alternative approach is to allow a hit to do its damage in the interior and rely on complete redundancy of all vital systems with adequate separation of parallel branches to maintain functions. Personnel casualties would not be prevented. Like the citadel, this protection concept also would require a larger ship, in this case to accommodate the redundant elements and provide a structure large enough to absorb some damage without the ship breaking apart. The additional gear required for redundant systems would add to the cost. There is plenty of room here for development of new system architectures, perhaps miniaturized, that can withstand the violent disruption of branches without a failure of the total system. Application of this principle produces systems capable of reconfiguring themselves after parts are cut off. Like all

The after effects of an Exocet warhead on the USS STARK. Good design and effective damage control saved the ship from sinking but the missed missiles rendered her useless and required her withdrawal from the theatre of operations meaning another ship had to take up her patrol duties. (USN)

The blast effects of an Exocet warhead on the Israeli EILAT. It was surrounded by the ship structure when it exploded. The hit location of the Exocet produced a cavity in the front of the ship, which produced a hypervelocity metal jet (Mach 20 to 30) capable of penetrating heavy armour or any other materials they encounter within the ship. Because of the great velocity of the penetrating jet they can ignite stowed on-board ammunition unless it is protected appropriately. (USN)

The after effects of a modern naval battle on a non-sturdy warship like the Frigate SHARYAN (FFG-31) hit-out of control after taking three Harpoons and a cluster bomb in the Persian Gulf during the 1982 Falklands War. (USN)

During RIMPAC 2000 the hulk of the former USS BROADSIDE was subjected to live fire target practice. She absorbed three Harpoon, three Hektor and a 2,400lb bomb yet remained afloat. The Charles F Adams design was based on a successful World War II destroyer which was built sturdy to take punishment hence the DDG’s inherent survivability. This image shows the aftermath of a Harpoon hit on the bow. (USN)
other important systems, the topside sensors would be redundant. To preclude a proliferation of vulnerable topside equipment, they would be reduced to the minimum possible by using multifunction antennas. The all-electric ship proposed for the future (DD-21) class appears particularly well-suited to support truly redundant systems. The redundant ship concept has two potentially vulnerable features. One is the magazines and other ammunition storage. They cannot be protected through redundancy, but must have special protective systems. Similarly, the redundancy principle will not provide protection against fires. The topside sensors would be destroyed. Of the two approaches to passive protection, the system is more effective against propellant fires in a damaged ship. Even with the required research and development carried out successfully, it is doubtful that a combatant of the redundant types would be capable of taking more than a few significant hits before she is put out of action. Of the two approaches to passive protection, the citadel type is probably the least known in terms of overall impact on ship design, but it also has greater promise and potential flexibility, than the redundancy concept. The size of ship required to ensure effective passive protection has not been determined, but a ship of more than 12,000 tons seems likely. The larger the ship, the smaller will be the percentage portion that is inevitably destroyed, and small ships cannot be protected effectively against all weapons.

Sturdiness is a Multiplier for Defence Effectiveness

Predicting the future value of passive protection is impossible unless we can predict future engagements and all their details. We can, however, estimate the conditions under which passive protection will make a difference. Consider, for example, a simple case of a salvo attack against a single ship. In this case, the ship's passive protection makes it possible to take two hits without any functional impairment. If the defence is perfect, the hit probability becomes zero, and we need pass protection. But who can ensure a perfect defence in the future? If, on the other hand, the defence is not perfect and the hit probability for each missile becomes a very high 80%, then the out-of-action probability for a combatant that has minimal passive protection becomes an appalling 6% when attacked by a salvo of four missiles, whereas for the two-hit ship it is near zero. Similar reductions are found for other salvo attacks.

Another way of expressing this benefit is to look at it from the attacker's point of view. For the attack to be effective, many more missiles must be used against ships possessing sturdiness. This is true even for the above example, where the attacker need use only three missiles to get a 50% probability of knocking out the zero-hit ship, but he must use 12 missiles to accomplish the same against the two-hit ship. In other words, passive protection is a multiplier for the effectiveness of the defence. Especially for attacks on a group of ships it is obvious that the attacker quickly may have a problem, for he will have only a limited number of missiles that can be employed.

The major benefits of passive protection are in saving lives, freeing some constraints on tactical choices, compensating for action mistakes, realising potential, reducing material losses, helping to win engagements and wars, and ensuring dominance in the littorals by reducing or eliminating the chance of embarring losses of high-cost ships operating in grey situations of peace-time.

The U.S. Fleet after Next

The case for rebalancing the fleet to obtain ensured access and dominance in the littorals is convincing. Just what types and mixes of ships is not clear, for the future engagements are not well defined. It is difficult to predict future types, recognising that their proposed small size would have both advantages and disadvantages. These size constraints may make it necessary to limit their functions, such as Sweden is doing with some of their proposed Visby-class coastal corvettes. Small ships also cannot carry passive protection that is effective against missiles, and if they were hit they would almost certainly be put out of action or lost. Future uncertainty, coupled with the prevailing loss tolerance for losses, means that other combatant types should be considered to cover all bets. These should be sturdy ships bigger than the Streetfighters, and more costly, but they could be made more capable as well.

Incorporating combatantsth with sturdiness for missile warfare should be one of the goals for the "fleet after next." But reaching this goal will require a change in attitudes and policies concerning passive protection. In view of the potential benefits, the subject deserves more attention. It should not be considered a problem for engineers to fit in, if we can afford it. The question of sturdiness of future combatants should be decided in the context of the selection of the best combatant types for future missions. 

Mr. Hansen is a physicist and structural engineer with considerable experience, having served in the US Naval Surface Warfare Center, Carderock Division, where he was head of the Protection and Weapons Effects Department. He presently is a consultant working through T. Carroll Associates, Engineers.

Hatch, Match & Dispatch

MATCH
GASCOYNE Commissions

Australia's newest warship, the HMAS class coastal minehunter GASCOYNE, commissioned into the Royal Australian Navy (RAN) at HMAS WATERNES on Saturday June 2, 2001.

The guest of honour, Miss Victoria Peel, commissioned the ship in a traditional naval ceremony. Miss Peel is the daughter of Capt John Peel, Commanding Officer of the first HMAS GASCOYNE, a frigate built in Balmain and which served during WWII.

GASCOYNE is the third of a class of six HMAS class minehunter coastal (MHs) being built by ADI Limited in Newcastle for the RAN. The $1 billion project has provided significant employment in the Hunter region and is proceeding on time and on budget.

Following her commissioning, GASCOYNE joined her sister ships HUNO and HAWKESBURY, which have recently returned from Tandem Thrust 01. The minehunters have successfully demonstrated these new capabilities these world-class ships bring to the RAN thanks to their leading-edge technology.

The Hunt class is based on the Italian Fast400 class but modified to suit Australian conditions. GASCOYNE has a crew of 39 and with her V8 Fastmotive diesels boasts a range of 1,600 nautical miles at 12 knots. She is equipped with a 30mm gun for self-defence and carries two robust ROHOF Double Eagle Mine Disposal Vehicles for identifying and destroying enemy mines.
DISPATCH

HMAS JERVIS BAY stands down

At a ceremony in Hobart HMAS JERVIS BAY (D451), the Incat 86ni wavepiercing catamaran built for commercial service, completed a distinguished term of service with the RAN following a two-year charter. She was commissioned for logistic operations between Australia and East Timor in May 1999.

Since her debut with the Navy HMAS JERVIS BAY has completed 107 trips between Darwin and Dili, transporting personnel and equipment as part of the United Nations Transitional Administration in East Timor (UNTAET). The Maritime Commander, Rear Admiral Geoff Smith AM RAN, paid tribute stating “HMAS JERVIS BAY has acquitted herself precisely the vessel we wanted in the East Timor crisis, we needed to transport personnel quickly, reliably and in large numbers.”

Chief of Navy, Vice Admiral David Shackleton also paid tribute stating “HMAS JERVIS BAY affectionately referred to as the ‘Dili Express’ served Australia well and successfully filled a significant in the Navy’s operational capability. He went on to say that “she has been extensively trialed and assessed during her service and the RAN has obtained much valuable data for use in the future.”

The advent of the Timor crisis gave rise to an immediate need to transport large numbers of troops and equipment quickly. Travelling at 45 knots fully loaded and 48 knots lightship, HMAS JERVIS BAY usually crossed between Darwin and Dili in approximately 11 hours.

Just as Incat identified the fast ferry niche over a decade ago another area of the marine world in need of radical development has been identified. The US military is particularly impressed with the high-speed platform, to the extent that HMAS JERVIS BAY is said to have "stunned" US 7th Fleet personnel when testing Incat’s latest wave piercing technology.

The ship will now be offered for sale or lease from Incat.

HMAS JERVIS BAY Facts & Figures

During her two year charter the RAN HMAS JERVIS BAY completed 107 trips covering some 100,000 nautical miles, carried 20,000 passengers and 430 military vehicles. In addition, an impressive 5,000 tonnes of stores were shipped.

The ship's company stand to attention on the wharf by the side of the Derwent River in Hobart.

The white ensign is lowered on the JERVIS BAY's short but distinguished career. The ship is now up for sale or lease from its builder Incat catamarans of Tasmania.
Unfortunately their success was short lived as AE2 was sunk a few days later and Stoker and his men became prisoners of the Turks where they endured three and half years of living hell in Turkish forced labour camps where conditions were similar to that endured by prisoners of the Japanese in World War II. The book then follows the lives of the Japanese attack. Their reunion is a tense one as they tried to resume some semblance of normality after the war and attempts to explain why Stoker and his men as well as others were not rewarded for their deeds. It also follows the history of the AE2 herself, the wreck of which was only recently re-discovered, in 1998, lying 35 fathoms deep in the mud of the Sea of Marmara. The future of the wreck is now the subject of discussion between the Governments of Australia and Turkey.

Fred and Elizabeth Brenchley have done an excellent job of research in which they have pieced together many disparate, and previously unknown, facts about Stoker and his men as well as recent news of the wreck of the AE2. Many of these photographs have never been published before.

For those interested in the bare facts, Stoker's Submarine is a well illustrated 280 page paperback published by Harper Collins and retailing at $29.95. For those actually interested in the content — then purchase a copy and be prepared to read an exciting story of wartime bravery and enduring by an often forgotten group of Australian servicemen.

**Pearl Harbor**

**Reviewed by** Mark Schoewert

**Jewish Picture.**

**Distributed by Buena Vista Australia.**

**Running time:** 2 hours

**At Cinemas everywhere.**

For something different THE NAVY recently went to the movies to review the new war thriller Pearl Harbor. Set during the time of the Japanese bombing of Pearl Harbor, two friends (Ben Affleck and Josh Hartnett) are caught up in the events that draw the US into World War II.

Ben Affleck plays Rafe McCawley, a 25-year-old US Army pilot 'itching' to get into combat as World War II in the events that draw the US into World War II. At times Pearl Harbor is moving, funny and touching. If I had any criticisms of the movie it would be these: the movie is too 'American' at the end and pays too little attention to 'affiliated' struggle in the Pacific but then again, it's an American film for American audiences. The love triangle, while interesting and keeping the non-war movie devotee interested, is a little too involved which leaves less time to explain Pearl Harbor and why the Japanese attacked.

Less informed, and unimaginative critics have attacked. The movie combines real imagery and computer generated imagery to produce a spectacular and stunning visual effect. Battleship now is reproduced brilliantly and one cannot help but think that this is what it must have looked like on the day.

**Pearl Harbor** finishes on a high note with the Doolittle raid on Tokyo, which many Americans find hard to separate from the attack on Pearl Harbor as this raid was the counter strike to the Japanese surprise attack. The other supporting actors do a good job, including Jon Voight, who is nearly unrecognisable in his role as President Roosevelt. Also turning in fine performances are Alec Baldwin as Col. James Doolittl and Cuba Gooding Jr. as Doris 'Dorie' Miller, a cook from USS WEST VIRGINIA who earned The Navy Cross for manning an anti-aircraft gun during the battle. He was the first Negro in the USN to win the decoration.

Pearl Harbor is well recommended. A must-see!
The strategic background to Australia's security has changed in recent decades and in some respects become more uncertain. The League believes it is essential that Australia develops capability to defend itself, paying particular attention to maritime defence. Australia is, of geographical necessity, a maritime nation whose prosperity, strength and safety depend to a great extent on the security of the surrounding ocean and island areas, and on seaborne trade.

The Navy League:

• Believes Australia can be defended against attack by other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space to contribute to defending essential lines of sea and air communication to our allies.
• Supports the ANZUS Treaty and the future reintegration of New Zealand as a full partner.
• Urges a close relationship with the nearer ASEAN countries, PNG and the Island States of the South Pacific.
• Advocates a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.
• Believes there must be a significant deterrent in the Australian Defence Force (ADF) capable of powerful retaliation at considerable distances from Australia.
• Supports the ADF must have the capability to protect essential shipping at considerable distances from Australia, as well as in coastal waters.
• Supports the concept of a strong Air Force and highly mobile Army, capable of island and jungle warfare as well as the defence of Northern Australia.
• Believes it is essential that the destroyer/frigate class of warship be capable of powerful countermeasures force and a modern hydrographic/oceanographic fleet.
• Supports the acquisition of AWACS aircraft and the update of RAAF aircraft.

As to the RAN, the League:

• Supports the concept of a Navy capable of effective action off both East and West coasts simultaneously and advocates a gradual build up of the Fleet to ensure that, in conjunction with the RAAF, this can be achieved against any force which could be deployed in our general area.
• Supports the acquisition of an additional 2 or 3 Collins class submarines.
• Advocates that all Australian warships should be equipped with some form of defence against missiles.
• Advocates that in any future submarine construction program all forms of propulsion, including nuclear, be examined with a view to selecting the most advantageous operationally.
• Supports the maintenance of a strong Naval Reserve to help crew vessels and aircraft in reserve, or taken up for service, and for specialised tasks in time of defence emergency.
• Supports the development of afloat support and logistics capability sufficient for two task forces, including support vessels and of other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space to contribute to defending essential lines of sea and air communication to our allies.

The League:

• Advocates the development of a defence industry supported by strong research and design organisations capable of constructing all needed types of warships and support vessels and of providing systems and sensor integration with through-life support.
• Advocates the development of a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.
• Believes there must be a significant deterrent in the Australian Defence Force (ADF) capable of powerful retaliation at considerable distances from Australia.
• Supports the ADF must have the capability to protect essential shipping at considerable distances from Australia, as well as in coastal waters.
• Supports the concept of a strong Air Force and highly mobile Army, capable of island and jungle warfare as well as the defence of Northern Australia.
• Believes it is essential that the destroyer/frigate class of warship be capable of powerful countermeasures force and a modern hydrographic/oceanographic fleet.
• Supports the acquisition of AWACS aircraft and the update of RAAF aircraft.
• Advocates the development of amphibious forces to ensure the security of our offshore territories and to enable assistance to be provided by sea as well as by air to friendly island states in our area.
• Advocates the transfer of responsibility, and necessary resources, for Coastal Surveillance to the defence force and the development of the capability for patrol and surveillance of the ocean areas all around the Australian coast and island territories, including in the Southern Ocean.
• Advocates the acquisition of the most modern armaments and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.
• Advocates measures to foster a build-up of Australian-owned shipping to ensure the carriage of essential cargoes in war.

The League:

• Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in our national defence capability including the required industrial infrastructure.

While recognising current economic problems and budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.
Taking a break in Tandem Thrust action, 'friendly' and 'opposing' naval forces come together in a multi-national naval formation of RAN, RCN and USN ships led by USS KITTY HAWK (CV-63) and including: US Ships BLUE RIDGE (LCC-19), CHANCELLORSVILLE (CG-62), JOHN S. MCCAIN (DDG-56), GARY (FFG-51); KAMEHAMEHA (SSN-642); and USNS RAPPAHANNOCK (TAO-204), HMA Ships BRISBANE (DDG-41); ADELAIDE (FFG-01), SUCCESS (OR-304), CANBERRA (FFG-02); HMC Ships ALGONQUIN (DDG-283); VANCOUVER (FFH-331), and REGINA (FFH-334). (USN, PH3 Alex C. Witte)
The Australian Maritime Museum’s VAMPIRE exhibit in Captain Cook Graving dock to undergo some minor preservation work, June 2001.
THE NAVY

League of Australia

OCTOBER - DECEMBER 2001

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$5.45 (including GST)

Escape from Soerabaja

Australia’s Maritime Doctrine – Part 2

The Bush Era Navy

Australia’s Leading Naval Magazine Since 1938
THE NAVY LEAGUE OF AUSTRALIA
(New South Wales Division)
with the participation of
THE ROYAL AUSTRALIAN NAVY
and with the support of
THE COMPANY OF MASTER MARINERS OF AUSTRALIA
presents
MODERN NAVAL DEVELOPMENTS
Australia's Navy for the 21st Century
Wednesday 21 November 2001

The guidance provided by Government through the Defence 2000 White Paper has led to the issue by Navy management of a public document "Australia's Navy for the 21st Century", the unclassified version of Navy's long-range strategic plan (known as Plan Blue).

The plan outlines Navy's thinking on its own future, and the New South Wales Division of the Navy League has arranged a presentation on key elements of the subject which will be given in the IONIC ROOM of the MASONIC CENTRE (corner of Castlereagh and Goulburn Streets, Sydney) on Wednesday 21 November at 6.15 for 6.30pm. Four topics will be presented: Navy's Long-Range Plans, Uninhabited Aerial Vehicles, Developments in High-Speed Hull Design and Maritime Developments in our Region.

A light meal and refreshments will be served. The charge for the evening will be $27.50 for Navy League, CMMA and ADF Members, and $33 for others (incl GST). Parking is available ($6 evening rate after 5.00pm) in the Goulburn Street parking station opposite the Centre. The presentation will end about 10.00pm.

The New South Wales Division invites you and your guests to attend. Please ring Kaye Wight on (02) 9232 2144 or fax her on (02) 9232 8383 to register your interest, or write to The Hon Secretary of the NSW Division at Box 1719 GPO Sydney NSW 1043, enclosing your cheque payable to the League.

The new Arleigh Burke Flight IIA class destroyer USS WINSTON S. CHURCHILL is overflown by a Spitfire on her first visit to the UK. (RN)
CANCELLATION
OF
THE CENTENARY OF FEDERATION NAVAL REVIEW

Readers will be aware that as a consequence of the recent terrible events which took place in New York and Washington, the Minister for Defence has announced the cancellation of the Centenary of Federation Naval Review, a guide to which appears on pages 3 and 4 of this publication.

The Navy League learned of the cancellation after the magazine had gone to press, and we regret it was then too late to withdraw the article.

The Editor
The Navy Magazine
Dear Editor

I read with interest the last edition of THE NAVY Vol 61 No 3 and draw your attention to the Hatch, Match & Dispatch segment relating to the commissioning of our latest coastal minehunter HMAS GASCOYNE.

I would point out that HMAS GASCOYNE is not, as you reported, the third of the Huon class minehunters to be commissioned but rather the fourth of the class following on from HMAS NORMAN which appears to have been neglected.

The first to commission was HMAS HUON followed by HAWESBURY, NORMAN and then GASCOYNE.

These four ships will then be followed on the remaining two of the class yet to commission DIAMANTINA and YARRA.

Kind Regards

Frank McCarthy, NLA. VIC DIV

FROM THE CROW'S NEST

Following the example of his predecessor Admiral Symott, The Chief of the Defence Force, Admiral Barrie, has not hesitated to comment publicly on defence matters from time to time.

In a Paper presented to the ANZUS 50th Anniversary Conference held in Sydney on 30 June, Admiral Barrie referred to the strategic implications of rapid technological developments in the Asia Pacific region which he described as the fastest changing region in the world, an area "home to the two largest economies - the United States and Japan, the two most populous countries - China and India, and including the ten ASEAN states with a combined population of over 500 million; it also contains three of the five recognised nuclear powers and, more recently, two de facto nuclear States.

Pointing out that defence spending in the region had increased rather than decreased since the end of the Cold War, due to the main in the ability of developing economies to afford new weapons and technology, the Admiral said "A remarkable aspect of defence trends in the Asia-Pacific over the past decade is that new military technology that used to take years to come to the region is now readily available off the shelf and with very advanced performance characteristics. Indeed some manufacturing countries are selling weapons to customers before these weapons are available in their own armed forces".

Noting significant combat capability in the region, Admiral Barrie said that countries have legitimate needs for self-defence and to modernise and acquire defence platforms; he also spoke of the need to "develop an even more sophisticated level of capability in the Asia Pacific which will enable changes to take place without creating anxiety between States".

While acknowledging the importance of capability expansion in the area, Admiral Barrie spoke of increasing concern about first, Weapons of Mass Destruction (WMD) to the region and, as often as not, require an estimated 30 nations have developed aggressive computer warfare programs. All in all, a thought-provoking paper by Admiral Barrie that has left many readers scratching their heads about what it means for Australia.

Geoffrey Evans

FROM OUR READERS

What about NORM?*

Dear Editor

I read with interest the last edition of THE NAVY Vol 61 No 3 and draw your attention to the Hatch, Match & Dispatch segment relating to the commissioning of our latest coastal minehunter HMAS GASCOYNE.

I would point out that HMAS GASCOYNE is not, as you reported, the third of the Huon class minehunters to be commissioned but rather the fourth of the class following on from HMAS NORMAN which appears to have been neglected.

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Kind Regards

Frank McCarthy, NLA. VIC DIV

* Listed a number of countries that already possess long and intercontinental-range missiles, including China, India, Pakistan and North Korea - the latter "a major source of missile proliferation to other parts of the world, including to the Middle East, an already unstable, and over-armed region" the Admiral said the proliferation of missiles was a dangerous development that needed to be discouraged. He quoted Australia understood the U.S. plan to develop a missile defence system "to defend against potential threats from States of concern and against the possibility of an accidental or unauthorised missile launch" and referred to Australia's belief that the option of strengthening the missile technology control regime, including increasing the control over the transfer of technology, should be examined and penalties for breaches imposed.

The CDF then went on to deal with a second area of concern - cyber warfare, electronic strikes and computer hacking - particularly challenging because they posed threats out of proportion to the cost of investment and the vulnerability of modern societies - not least those of the United States and Australia.

Referring to new technologies such as directed energy and electromagnetic pulse weapons, Admiral Barrie said adversaries were likely to use cyber attacks to comply deployment operations and that an estimated 30 nations have developed aggressive computer warfare programs. How best to deal with the challenges of WMD and ballistic missiles as well as emerging technologies? Admiral Barrie suggested:

The continuing presence of a fully engaged United States in the region,

Good intelligence information and retention of the "knowledge edge",

Extension of the network of defence relationship, and

Stricter and international security architecture to arrest the proliferation of weapons of mass destruction as the way to meet challenges and maintain security and stability in the region.

Not quite "high tech" but very real nonetheless, the CDF added piracy and terrorism to the list of problems concerning the region and, as often as not, require traditional military methods to provide solutions.

All in all, a thought-provoking paper by Admiral Barrie that deserved wider attention than it appears to have received.

Geoffrey Evans

A Guide to the RAN

Events

Friday, 28 September;

• New Zealand ships HMNZS RESOLUTION and MANAWANUI arrive.

Saturday, 29 September;

• New Zealand ships HMNZS CANTERBURY and ENDEAVOUR arrive in company with HMAS WESTRALIA.

Monday, 1 October;

• THAI ships NARESUN and CHAO PHRAYA arrive.

• Opening of Navy 100 Years Maritime.

Tuesday, 2 October;

• Departure of RAN warships to join visiting ships.

• Arrival of Chinese ships YICHANG and TAICANG.

• Arrival of South Korean ship HYANGRO BONG.

• Return of RAN ships and arrival of visiting ships, NORTHUMBERLAND (UK), VINCENNES (USA), HARUSAME (Japan), MURASAME (Japan), VENDEMAIRE (France), TF KAHAN (NZ), PERSISTENCE (Singapore).

Wednesday, 3 October;

• Arrival of Indian destroyer MUMBAI.

• Arrival of South African ship GUTENIOQUA.

• Morning: Ceremonial Service, Martin Place, Sydney.

• Midday: Band performances, Corso, Darling Harbour.

Thursday, 4 October;

• Combined Navies March through streets of Sydney.

• Midday: Royal Marine Band perform Beat retreat at Sydney Town Hall.

• Afternoon; RAAF Band performance in Tumbalong Park, Darling Harbour.

• Evening: "Sounds of the Sea" by RAN massed bands at Sydney Town Hall.

Friday, 5 October;

• Ships open at Fleet Base East, Sydney Cove Passenger Terminal, Darling Harbour Passenger Terminal & HMAS WATERHEN, 1-4pm.

• Midday: Band performances, Corso, Darling Harbour.

• Midday: Task Force 72 (radio controlled 1/22 scale model warship club) Fleet Entry Captain Cook Graving Dock, Garden Island.

• Evening: "An Australian Night at the Proms", Superdome, Olympic Park, Homebush Bay.

• Evening: Ships move to Harbour anchorage points.

Saturday, 6 October;

• Centenary Naval Review on Sydney Harbour with fly overs by RAAF and RNZAF jet aircraft and commercial aircraft.

• Band performances in support of CNR around Sydney Harbour foreshore.

• Evening: "Battle of Sydney Harbour" fireworks spectacular.

Sunday, 7 October;

• Departure of Chinese ships YICHANG and TAICANG.

• CBR Morning Church Service at St Andrews Cathedral, Sydney.

• Ships open at Fleet Base East, Garden Island, Sydney Cove Passenger Terminal, Darling Harbour Passenger Terminal, 10am-4pm.

• CBR Afternoon Church Service at St Mary's Cathedral, Sydney.

• Youth reception at Fleet Base East.

Monday, 8 October;

• Massed RAN ships depart for Youth Sea Day, return afternoon.

THE NAVY
Participating Ships

Royal Australian Navy:
- HMAS Ships BRISBANE, ADELAIDE, SYDNEY, MELBOURNE, NEWCASTLE, ARUNTA, WARRAMUNGA, TUBUUK, KANIMBA, MANORA, SUCCESS, WESTRALIA, LEEUWIN, MELVILLE, FARNCOMB, WALLER, FREMMANTLE, WARRAMBOOII, TOWNSVILLE, BENDIGO, IPSWICH, WHIYALI, HUON, HAWESBURY, GASPESY, NEUSAER, DIAMANTINA, BROGLA, WALLAROO, BANDICOOT & STS YOUNG ENDEAVOUR

Royal Navy:
- HNS NORTHUMBERLAND

Royal New Zealand Navy:
- USS VINCENNES

United States Navy:
- JDS MURASAME & HARUSAME
- HMNZS TE KAHA, CANTERBURY
- Royal New Zealand Navy:
- Royal Navy:
- USS VINCENNES
- HMAS BRISBANE (DDG-41) > BRISBANE
- HMAS NEWCASTLE firing a Standard SM-1 MR

Chapter 3 Armed Conflict

The Navy exists as part of the Australian Defence Force to fight and win in any armed conflict in which Australia is involved. Since the formation of the United Nations, much effort has been expended to govern the form and extent of conflict through international treaties and conventions and Australia has been a leading actor in such work. Nevertheless, the experience of the last few decades has demonstrated that conflict remains a perennial aspect of international relations.

The Features of Armed Conflict

By its nature, conflict possesses intrinsic and inseparable features that in combination make it a unique phenomenon in human affairs. The first element of conflict is the adversary. Other features derive from the environment in all its aspects and the maritime elements have been discussed in Chapter Two. In this section we concentrate on the human aspects, particularly in the effects that are generated by or manifest within conflict.

Danger
Danger and conflict are inseparable and fear is an ever present reality in war. The Navy exists as part of the Australian Defence Force to fight and win in any armed conflict in which Australia is involved. The concept of warfighting will be better prepared for conflict.

Uncertainty
The concept of uncertainty is related to friction and recognises that a lack of accurate and timely information, errors, confusion and contradictions combine to create what is known as the fog of war. Highly complex situations must be faced and dealt with when there is insufficient time for complete planning and investigation of the issues. In battle, the effect of fear on operations is thus a measure of the standards of training, leadership and readiness of combat forces. Forces can prepare for reality in conflict by training and operations which are as challenging and realistic as possible. For maritime units, this will bear dividends not only in combat, but also in facing the dangers of the sea.

The Navy

The Navy exists as part of the Australian Defence Force to fight and win in any armed conflict in which Australia is involved. It is the only nation of which the US President, in his book On War explained friction by pointing out that what was important in war was very simple and that in war the simple became progressively more difficult to achieve. Process was not only due to the multitude of problems which arise in attempting any complex activity in an uncertain and changing environment, but because of the presence and actions of an unpredictable adversary and, most important of all, because of the effects of the both conscious and subconscious, of fear. The challenges of going down to the sea in ships and operating over the sea in aircraft mean that some of the experience of friction is an ever present reality for maritime forces even in time of peace. Thus, Navies and air forces which allow their people every opportunity to practice their profession at, under and over the sea, to test their skills and extend their operating envelopes even in ways which do not seem directly connected with warfighting will be better prepared for conflict.

In part 2 of our presentation of the RAN's new 'Maritime Doctrine' we detail Chapters 3 and 4 of Armed Conflict and Strategic Policy. The document was written by the Seapower Centre and is reproduced in THE NAVY, with the Centre's approval, given its importance to readers of THE NAVY, Australians and to the Navy League in general.
particular, commanders need to be risk aware rather than risk averse. In operations in this atmosphere of uncertainty and complexity. The best preparation for this problem is not only to understand its practical inevitability in time of conflict, but also to ensure that its importance and understanding of the aim are supported by coherent and comprehensive doctrine and practiced by realistic and demanding exercises.

The Spectrum of Conflict

All the factors described above are present at a greater or lesser extent in any conflict and must be taken into account in dealing with the situation. The varieties of conditions which can create and sustain conflict are such that we need to think of it as a spectrum of conflict. Within this spectrum are a number of differing conditions or levels. The categories that are particularly useful when considering the maritime environment are pre-conlict conditions, low-intensity operations, operations at the higher level and general conflict.

Within pre-conlict conditions changes in the international situation occur in a controlled way, and to some extent directed by the processes of negotiation. Force is only employed within the context of the domestic legal system or the international order. Threats of force are confined to the normal processes of deterrence.

Low-intensity operations are operations that are limited in aim, scope and area. They often include sporadic acts of violence. They are just as likely to be conducted on a unilateral basis as that of the single state and they will often be under the mandate of the United Nations or the arms of some other international organisation. They may involve a significant number of non-state actors, or protagonists for relief work. Examples include the Australian led operations in East Timor in 1999. Higher level operations in the maritime environment may be much more intense and involve organised combat operations between ships and aircraft on both sides deploying major weapons. They remain limited in aim, scope and area but are very demanding in nature. An important maritime example was the Gulf War in 1991.

General War differs from higher level operations not so much in the combat methods or tactical outcomes, but in its much broader aim, scope and area. It is at the same time the rarest but also the most serious type of conflict.

The various forms of conflict do have an important dimension of time. This can be considered as a continuum which extends from a pre-conflict phase, characterised by tension and perhaps sporadic acts of violence, into a conflict phase. This is characterised by the application of armed force by the parties involved. It may lead on to a post-conflict phase, which brings the resolution of the conflict, to the least, the aftermath of the conflict. Depending upon the circumstances, maritime forces may have important roles to play in each part of the continuum.

Levels of Command

In terms of directing, commanding and managing an armed conflict, it is a useful mechanism to consider it as operating on three levels: strategic, operational and tactical. The strategic level of command embraces its overall direction and is sometimes further divided into national strategic and military strategic levels. The national strategic level deals with the organisation and direction of the nation-state as a whole in achieving the desired end-state of the conflict. The military strategic level refers to the overall military planning and direction of the conflict towards that end, reflecting the links upwards to the military-political interface and downwards to the operational level.

The operational level of command has to do with the planning and conduct of campaigns and key operations in order to achieve the strategic aim. Within the ADF, activities at this level will inevitably be commanded and directed on a joint basis. The operational level of war is particularly concerned with the issue of resources as the enablers for tactical efforts to achieve the objectives set. It thus provides the link between the strategic and tactical levels of command.

The tactical level of command relates to the planning and execution of battles and engagements within the military campaign. It fundamentally relates to combat with the adversary. In many circumstances, it is possible to define or perceive clear distinctions between the three levels of command but this has never been easy for maritime warfare, particularly in terms of the distinction between the operational and tactical levels.

Even the smallest maritime units have a span of interest and of responsibility that can be significant in terms of an entire theatre or area of operations. Furthermore, both modern technology and the influence of external factors such as the media and international law mean that even the smallest event may have profound effects on the strategic situation. The operations in East Timor in 1999, for example, frequently demonstrated compression of the three levels of command.

Future Directions of Warfare

Unless a conflict is wholly confined to the land—a rare circumstance in an era of globalisation and increasing economic interdependence—then maritime forces will be involved. The RAN’s experience since 1945 has shown from strike and interdiction operations and the provision of fire support to land forces in Korea and Vietnam to counter-insurgency operations in Malaysia during Confrontation, sectarian operations before and after the 1991 Gulf War and logistic support and the provision of cover to the forces in East Timor in 1999. For all of these conflicts, the RAAF have played fundamental roles in the defence of Australia’s maritime communications.

Some strategic analysts have suggested that the nature of armed conflict is changing fundamentally and away from outright confrontation between nation-states, with all that this implies by way of disciplined armed forces fighting in what are effectively controlled environments. Within this thesis, the nature of future armed conflict will be much more closely related to the activities of non-state organisations, such as international criminals and insurgent movements, as well as the use of non-state actors as proxies for nation-states and the use of weapons of mass destruction. This has led to a need to adapt to a more fluid environment.

The military strategic aim of a nation-state in conflict is usually the same: to achieve a desired end-state within the constraints imposed by the strategic environment. This can be either a pre-defined set of objectives or a more fluid and dynamic process. The nature of modern conflict is such that the end-state may evolve over time, with the possibility of new objectives emerging as the conflict unfolds. The ADF must therefore be able to adapt to the changing nature of the conflict, to meet the needs of the nation-state.

The principles of war are: 
- The object of war is to achieve the aims of the nation-state within the constraints of the conflict.
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Selection and Maintenance of the Aim

Military action is never an end in itself; it is always a means to an end. It is of fundamental importance that the end always be kept clearly in view. This cardinal principle applies with equal force to the strategic, operational and tactical levels of conflict.

Co-operation

Co-operation is the bringing together of the services, between the services and between the ADF and other elements of the Australian Government, with national industry and the community, and between the ADF and allies or coalition partners. It is vital for success in war. Only in this way can the resources and energies of each be harnessed so as to achieve victory.

Offensive Action

Offensive action is action by a military force to gain and retain the initiative. Offensive action is essential in most circumstances to the achievement of victory.

Concentration of Force

Success in combat depends on the concentration of force at the right place, at the right time, and in such a way as to achieve a decisive result.

Security

Security is vital in military operations to allow one’s own forces the freedom of action to operate effectively with minimal interference from the adversary and deny the adversary an advantage.

Surprise

Every effort must be made to surprise the enemy and to guard against being taken by surprise. In this there is a close connection with the principle of security. Surprise can produce results out of all proportion to the effort expended.
Economy of Effort

Economy of effort is the prudent allocation and application of defence and civil resources to achieve the desired results.

Flexibility

Flexibility is the capacity to adapt plans to take account of unforeseen circumstances, so as to ensure success in the face of friction, unexpected resistance or setbacks, or to capitalise on unexpected opportunities.

Sustainment

Sustainment includes support arrangements necessary to implement strategies and operational plans. These arrangements include those logistic and personnel aspects necessary for the efficient support of a force committed to operations.

Morale

Morale is an essential element of combat power. High morale engenders courage, energy, cohesion, endurance, steadfastness, determination, and a bold, offensive spirit. In any given situation, military success may depend as much on morale as on material advantages.

Chapter 4 Strategic Policy

The roles of maritime forces in the protection of Australia and its interests are derived from the Government’s overall security policy. Australia’s military strategic policy covers those elements of that policy which relate to the use of armed force in international affairs. In turn, this strategic policy shapes the development of the national military strategy and the methods by which armed force will be utilised when necessary to meet Australia’s interests. This chapter summarises Australia’s security and strategic policies and establishes the requirements for maritime forces to contribute to the implementation of military strategies, as well as the nature of that contribution.

National Security

National Interests

A government’s first duty is to provide for the security and well-being of its citizens. Its responsibilities include the protection and security of national sovereignty, both territory and people. These responsibilities extend further to the support of national values and the advancement of the social, environmental and economic well-being of the population.

National Objectives

To protect and advance these interests, the government pursues a set of national objectives, some explicit and some implicit. They involve outcomes across the full range of government activity, both domestic and international. A vital component will be those which achieve the required levels of physical security and protection.

National Power

National power is the nation’s ability to achieve its national objectives. The elements of national power include the totality of a nation’s capacity for action and reaction. They are not confined to purely government functions, but also relate to the nation’s geography and natural and human resources, its industrial and scientific infrastructure and its relationships with other nation-states. The ADF provides the military capability of Australia’s national power.

Australia’s Strategic Environment

A nation’s strategic environment may be defined as the context within which it must exist and interact with other nation-states and other international entities. That context is the product of a wide range of geographic, economic, political and social factors which are themselves constantly changing both within themselves and in relation to other issues. While it is thus possible to make judgements about the fundamental security challenges facing Australia, many of the judgements and national courses of action relating to those challenges and interests are inherently dynamic and must constantly be revisited and reassessed.

The fundamentals of Australia’s strategic environment according to strategic policy guidance are:

- Asia-Pacific: Australia has key interests in the security and stability of the Asia-Pacific, including South East and North East Asia, the South West Pacific and North America. Furthermore, our physical security is directly related to the security and stability of maritime South East Asia and the South West Pacific.
- Regional Economic Development: The economic development of East Asia is the key driver of change in the Asia-Pacific strategic system. The political and social change which results from that development will bring about the evolution of new international power relationships, the most important of which will involve the United States, China and Japan.
- Indonesia: By reason of its geography and demography, Indonesia is a defining element within Australia’s strategic environment. With the Strategic Exercise and the South West Pacific: Australia’s history, proximity to and continuing relationships with the South West Pacific result in our commitment to support the security and stability of the nations of the region. In particular, our relationship with Papua New Guinea is central to Australia’s security interests.

Enduring Strategic Interests

The Australian Government has identified a number of enduring strategic interests that require to be pursued in order to prevent attack or coercion of this country. These are:

- Avoidance of destabilising strategic competition developing between the United States, China and Japan as the power relationships between the three evolve and change.
- Prevention of the emergence within the Asia-Pacific region of a dominant power, or group of powers whose strategic interests are hostile to those of Australia.
- Maintenance of a benign environment in South East Asia, particularly maritime South East Asia, which respects the territorial integrity of all states.
- Prevention of the positioning of extra-regional military forces in neighbouring countries which might be used contrary to Australia’s strategic interests.
- Prevention of the proliferation of weapons of mass destruction (WMD).

While Australia’s strategic environment and the enduring strategic interests related to that environment can generally be considered as existing within geographic boundaries, there are sense linkages and dependencies upon events elsewhere within the world. In the economic and maritime contexts, in particular, the free movement of shipping between major trading blocs all over the world is vital to the economic well-being of the Asia-Pacific region, while the majority of the states within it are dependent upon the uninterrupted passage of oil supplies, particularly from the Middle East, for their very existence.

Thus, these strategic interests recognise both the need for unilateral action, generally as a last resort, and the requirement to act co-operatively with other states within the region and with more distant allies. Co-operative action, in particular, may require the operation of Australia’s combat forces in areas not only within but well outside the Asia-Pacific region, but for reasons which derive from our strategic interests, such as Australian involvement in the Gulf War in 1991.

Strategic Characteristics

What the ADF and, in particular, Australia’s maritime combat forces can achieve is influenced by Australia’s strategic characteristics. These characteristics can be defined as being the elements which, in conjunction, make Australia a unique entity within the Asia-Pacific strategic environment. They include, but are not limited to the national political system, its economy, population and national support base, its foreign policy and the influence of its history. The influences which go together to make up what is sometimes termed as Australia’s strategic geography are also vital and these have been discussed in Chapter Two.

Political System

Australia is a sophisticated liberal democracy with one of the longest histories of democratic government in the Asia-Pacific region. Its military forces have an absolute commitment to upholding the Australian Constitution, to the subordination of the military to the Government, of the Government to Parliament and of Parliament to the people. This means that Australia’s use of armed force must be subject to the test of legitimacy, in that the Government must have the capacity to demonstrate to the electorate that is there adequate moral and legal justification for its actions.

In terms of the organisation of the ADF, this adherence to legitimacy and the democratic nature of the Australian nation state is a particular strength. It is a historical fact that liberal democracies have been more successful in the development and operation of maritime forces than other forms of government, principally because the intensity and complexity of the sustained effort required for these capabilities places heavy demands upon a nation’s systems of state credit, its technological and industrial infrastructure, and its educated population. Sophisticated combat forces, in other words, depend directly upon the support of the people for their continued existence.

Economy, Population and National Support Base

Dependent upon the maritime environment for economic well-being and security, Australia’s limited population and demography mean that the levels of human resources allocated to defence in peacetime will be limited and must be very carefully managed. Furthermore, national capabilities will not in the foreseeable future be sufficient to maintain all force elements at the required technological levels by Australian efforts alone. As with other countries, external support through access to technology, manufacturing and logistic support will be required to ensure that the fighting edge of national forces is maintained at a reasonable price and without making
excessive demands on the domestic economy. The most important relationship in this regard for Australia is and will be the United States of America. The balance between self-reliance and external support will inevitably be dynamic and one of the key considerations for the Government.

Foreign Policy
The Government operates under the fundamental objective that attacks on Australia or its interest will be prevented and the possibility of such attacks occurring will be minimised. Australia's aggregate power, but it is prepared to use armed force for its own self-defence, in the defence of allies and friends and to defeat or deter international aggression when diplomacy has failed. Maritime forces, therefore, will need to maintain a sustained presence without violating other nations' sovereignty, represent a highly appropriate mechanism for demonstrating such national interest in many circumstances.

The Influence of History
Such usage of armed force is borne out by Australia's history, which is one that shows that Australians are, although lightly, prepared to protect their national interests. Australians thus accept that some circumstances may require the application of force.

Nevertheless, the nature of the Australian military experience in general and our naval history in particular create special challenges for policy makers. The achievement of a credible and effective capability, as well as their reach and the ease with which maritime forces can be integrated into multinational operations means that they may be the first options considered by government when Australia's interests require participation in a contingency. Many of the unique characteristics of maritime forces described in Chapter Six bear directly upon their utility in these circumstances.

In the unremitting effort required in Protection of National Interests (PNI), maritime forces are among the most effective and credible elements of the ADF. They can protect our land forces possess sufficient maritime mobility to accomplish their tasks. In Defence of Regional Interests (DRI), the maritime nature of our region means that conflict will likely manifest itself on or over the sea. Even in situations where the initial conflict has developed wholly on land, its protraction or conclusion will be directly affected by the control of sea communications. Offensive and defensive operations will thus require maritime forces, whether in their own right against seaborne adversaries or as enablers for the projection of air or land power.

In Defence of Global Interests (DGI), the requirements for achieving and maintaining a credible capability, as well as their reach and the ease with which maritime forces can be integrated into multinational operations mean that they may be the first options considered by government when Australia's interests require participation in a contingency. Many of the unique characteristics of maritime forces described in Chapter Six bear directly upon their utility in these circumstances.

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Named the WESTPAC EXPRESS to reflect its main area of operations— the western Pacific, the vessel will be used to rapidly deploy USMC forces and supporting vehicles and equipment. Specifically, the WESTPAC EXPRESS will deploy forces between White Beach Okinawa, Yokosuka Naval Base, Iwakuni and other ports in Japan. Currently, the 15,000 marines stationed in the Amami area can deploy to the mainland and to reflect its main area of operations on the upper passenger deck.

Deployment System.

To Tokyo in under 24 hours. A similar and make the journey from Okinawa battalion and equipment in one load and can be used for training purposes. It is estimated that the Westpac Express will save more than 200 battalion transit days per year.

No New Combat System for Collins', heavyweight torpedo torpedoes the most appropriate for our strategic requirements.

The Government has decided that a comprehensive arrangement with the USN on submarine issues is in Australia’s best strategic interests and has therefore decided that the selection of the combat system for the Collins Class submarines and a new heavyweight torpedoes cannot proceed at this time.

The two short-listed tenderers for Collins’ Class submarines for the US were the US-based Raytheon and European-based STN Atlas.

The Minister for Defence, Peter Reith, said recent developments in the relationship between Australia and the US on submarine issues together with the accumulated experience and emerging understanding of the operational potential of the Collins Class submarines made this decision the most appropriate for our strategic circumstances.

The Australian and US Navies are entering into a Statement of Principles arrangement to achieve a shared goal of maximum cooperation and synergy on submarine matters. These arrangements are expected to give Australia even better access to US military technology giving the sub a vital edge in capability and operations.

The selection process for the heavyweight torpedo has also been terminated. A new arrangement will be developed by the Australian and US Navies under a cooperation agreement.

The benefits of this decision include no loss of key US Navy tactical information, resupply in time of need and the provision of torpedo firing exercises with US submarines.

Second USN FFG to Poland?

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Second USN FFG to Poland?

During a visit to Poland, US President George Bush announced his strong support for the transfer of a second Oliver Hazard Perry-class frigate to Poland. He said he plans to work with Congress to secure legislation authorising the transfer. The addition of another FFG will further improve the interoperability of the Polish Navy with its NATO allies.

The Westpac Express will be able to carry a full MEU battalion and all its support equipment from Okinawa to Tokyo and a further 15-18 days to deploy back to base. Based on annual usage, it is estimated that the Westpac Express will save more than 200 battalion transit days per year.

It is anticipated that Westpac Express will be able to carry a full battalion and equipment in one load and make the journey from Okinawa to Tokyo in under 24 hours. A similar deployment to South Korea would take around 18 hours. The charter is expected to result in significant savings in operating, logistics and maintenance costs over the existing deployment system.

Westpac Express is able to accommodate 100 HUMVEE’s on the mezzanine deck and four trucks and 12 UH-1 utility helicopters or a smaller number of CH-46E Sea Knight troop-lift helicopters on the main deck stored inside the ship. The two short-listed tenderers for Collins’ Class submarines and a new heavyweight torpedoes cannot proceed at this time.

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A RNZAF Macchi trainer/ground attack MB-339 and offered for charter on the commercial market. The New Zealand Government estimated the cost of the necessary modifications to enable the vessel to possibly fulfill its intended sealift role at $35-40 million, which did not consider to be the most cost-effective use of defence resources. As part of the 8th May 2001 Defence decisions, the Government announced that CHARLES UPHAM was to be sold at the end of its current charter arrangement.

The aircraft are on the international market, following the Government's decision to restructure elements of the New Zealand Defence Force.

Air Force Director of Logistics, Group Captain Peter Guy, said the international financial broker firm Ernst & Young had been selected to organise and conduct the marketing strategy and represent the RNZAF during the sales process.

The Skyhawks, some of which have seen over 30 years of service with the RNZAF, and some with the RAN, will be stored at Woodbourne and the Macchis, which are ten years old, at Ohakea.

Group Captain Guy said a number of organisations had expressed an interest in the aircraft and he was optimistic that they would all be sold.

HMS ARK ROYAL at sea after refit

The RN aircraft carrier HMS ARK ROYAL has sailed from Rosyth for trials in the North Sea after an extensive refit. ARK ROYAL arrived at Rosyth in May 1999. The £47 million refit by Babcock Engineering Services saw the flight deck strengthened for the new Merlin anti-submarine warfare helicopters and further alterations to allow the carrier to operate RAF GR 7 Harriers.

The refit will allow the ‘ARK’ to remain in active service until 2015 when the proposed Navy ‘super-carriers’ will be expected to enter RN service. HMS INVINCIBLE has since arrived at Rosyth for a shorter £50 million refit programme starting in November.

No second aircraft carrier for France

The French Minister of Defence, Alain Richard, has said that, for the time being, France has ruled out building a second aircraft carrier. Priority would be given instead to the procurement of new surface combatants, nuclear-powered attack submarines (SSNs) and cruise missiles.

The Navy's financial burden in coming years will also include outlays for Rafale carrierborne fighters, a fourth SSBN, two Horizon-class anti-aircraft frigates, the new MS1 nuclear missile and NH-90 multi-role helicopters.

While senior Marine National officers concede that such expenditure on the Navy has put the project for a second carrier on hold, those who lobbied for a second carrier argued it was required to replace CHARLES DE GAULLE when the 40,000-ton carrier put in for regular maintenance. The thinking now is that France’s new multi-mission frigates, land attack cruise missiles and new SSNs will allow the Navy to maintain full operational when CHARLES DE GAULLE leaves service.

“We estimate the cost of a sister ship for CHARLES DE GAULLE at just under £52 billion. This works out to the price of seven frigates without missiles,” said a source at the French Ministry of Defence.

A rear-projection class SSNs – the first to be ordered in 2002 – will be designed primarily to take part in land-attack operations with the new SSN project to cost an estimated US$3.6 billion.

Additionally, the Navy estimates the development and production of a new version of the SCALP-EG cruise missile, the SCALP Naval, will cost US$1.3 billion. The service has set its minimum requirement for the SCALP Naval cruise missile at 240. They will be deployed aboard multi-mission frigates earmarked for land attack and on new SSNs for launch from vertical silos or from vertical tubes. SCALP Naval is to become operational with the multi-mission frigates from 2011 and with the SSNs from 2013.

Aster missile tests successful

The French Government's procurement agency (DGA), recently carried out a test firing of the Aster 30 SAM to test its capability to operate in a hostile EW environment at its Test Centre in South West France.

The test used airborne targets, each carrying a jamming missile. A missile was fired at one of the targets when it was 1km away successfully hitting its selected target despite the heavy jamming.

This was the fourth successful test in a series designed to confirm the Aster 30’s ability to operate in a hostile environment.

A newswire news an Aster 15 missile launched from the trials vessel ILE D’OLERON successfully intercepted a sea-skimming target as part of a qualification firing to prove the French Navy’s Sol Air Anti-Surface (SAAM/FR) point-defence missile system.

The USN has decided to convert at least two of its Ohio-class nuclear powered ballistic missile submarines (SSBNs) into conventionally-armed submarines (SSGNS) with long-range strike and special operations capabilities.

Of US Naval Operations ADM Vern Clark said that the Navy would convert two of the Ohio-class submarines, adding that two more could be converted if additional funding were provided. The total cost of converting two submarines is expected to be about US$2 billion.

The conversion proposal has received strong support from the Navy’s special warfare community and corresponded with the US Department of Defense’s evolving future warfighting concept in which stealth and long-range strike are becoming increasingly important.

Each submarine will carry up to 154 Tomahawk and Tactical cruise missiles, two or three helicopters, and new SSNs will allow the Navy to achieve a 206-warhead stockpile by 2017.

Twenty-two of the boat’s Trident missile tubes will be converted to hold seven Tomahawks each – some fitted with a new penetrating warhead. The missiles will be launched from stocks of torpedo-tube-launched missiles on Los Angeles-class SSNs.

The USN will focus on the newest two submarines – the USS MICHIGAN (SSBN-727) and GEORGIA (SSBN-729) rather than the older two, the USS OHIO (SSBN-726) and FLORIDA (SSBN-728). Unless additional funding can be found, the older two submarines will be decommissioned rather than refuelled. Refuelling each boat costs about US$250 million, slightly more than the cost of decommissioning, the USN estimates. After refuelling the two converted boats are expected to remain in service for another 20 years.

Refuelling and conversion of the USS MICHIGAN and GEORGIA is
expected to begin in 2003 and will also include selective upgrades to the submarine combat systems, intelligence, surveillance and reconnaissance capabilities, and communications.

USN commissions LHD-7, USS IWO JIMA

The USN IWO JIMA, the US Navy’s latest large-deck amphibious assault ship (LHD-7) was commissioned on 30 June during a ceremony at Pensacola Naval Air Station, Florida. Built by Northrop Grumman Ingalls Shipbuilding, IWO JIMA is the seventh Wasp-class amphibious assault ship to enter service with the USN. She will be the USN’s first amphibious assault ship (LHD) to enter service with the USN.

Italy begins construction of new aircraft carrier

Fincantieri has cut the first metal for the construction of Italy’s new aircraft carrier and flagship, to be called ANDREA DORIA. Work is being carried out in the company’s yards at Riva Trigoso (Genoa) and Muggiano (La Spezia) with the ship to be delivered in 2007. The ship will have a standard displacement of about 22,000 tonnes, an overall length of approximately 235 metres and a speed of no less than 25 knots; it is fitted to accommodate a complement of 1,290 which also comprises a maximum of 450 marines. The ship has been designed to be both an aircraft carrier and an amphibious landing ship, with the capacity to embark a battalion sized assault force. The vessel will be equipped with a flight deck suitable for approximately 2,500 square metres. Two elevators will be installed for aircraft and there will be two access ramps to move vehicles from the quayside to the hangar/garage.

HMS TRAFALGAR

Tomahawk ready

The Tomahawk Cruise Missile system is on target to achieve full operational capability with the Royal Navy after a successful test launch from the attack submarine HMS TRAFALGAR in the Gulf of Mexico. This provides the UK with a third Tomahawk fitted aboard one of GPMPS’s submarines, and planned and its success significantly enhances the RN’s ability to deploy a continuous Tomahawk capability worldwide.

Tomahawk has already proved its worth in action with the Royal Navy during the Kosovo campaign in 1999. The missile was flown to a target using the satellite Global Positioning System and Digital Mapping Navigation Techniques over a pre-planned route to the target range at the TLAM retrofits. The second Swisse-class boat to receive TLAM is HMS SPARTAN, currently completing refit at Rosyth and expected to return to operational service in 2002. Work is also under way on retrofits to HMS TRENCHMOUTH and TURBULENT. HMS TALENT, TIRELESS and TOWAY will follow in 2006.

Raytheon delivers Ship Self Defence System for USS NIMITZ

A Raytheon Company system for the USN NIMITZ designed to provide improved ship self-defence has completed development and has been delivered to the USN. The Ship Self Defence System (SSDS), designated MK 2 MOD 0, will provide a capability against anti-ship cruise missiles (ASCM) for the USN’s aircraft carriers and amphibious assault ships.

Raytheon’s Naval & Maritime Integrated Systems (NAMIS) business unit developed the system during the past two years teamed with the USN’s Programme Executive Office for Theatre Surface Combatants (PEO TSC).

SSDS, using track data from the Raytheon’s Cooperative Engagement Capability (CEC) system, provides automated defence against ASCMs by co-ordinating the actions of the ship’s self defence weapon and electronic warfare systems. Although SSDS will not improve capability of individual sensors, it enhances target tracking by integrating the inputs from several different sensors to form a composite track. For example, SSDS will correlate target detections from individual radars, the electronic support measures (ESM) system (radiolocator intercept receiver), and the identification-friend-or-foe (IFF) system, combining these to build composite tracks on targets while identifying and prioritising threats. The system will also improve the warfighter’s ability to launch TLAM on small targets and those not identified by the RN’s own systems.

The missile was launched from the USS DECATUR (DDG-73), an Arleigh Burke class guided-missile destroyer. The USS DECATUR installed an upgraded Harpoon Ship Command and Launch Control System (HSLCS) prior to the first launch of the Block II missile in May 2001. The enhancements of the launch system provide for GPS initialisation and for faster and more user-friendly engagement planning.

Raytheon’s Block II version of the Harpoon is the first ship-based anti-ship missile able to launch TLAM from a sea-to-shore configuration, a capability that has been developed and tested since 1995.

Harpoon Block II destroys land target

A new Harpoon Block II is launched from the Arleigh Burke class Destroyer USS DECATUR at a simulated SA-20 SAM site in order to confirm the missile’s land attack capability (Boeing).

The recent testing confirmed that the Block II Harpoon is able to engage a land target, the missile demonstrated its coastal clutter suppression capabilities by scoring a direct hit on a simulated SA-20 Mobile Radar Van.

The USN recently tested the new Harpoon Block II missile against a land target on San Nicolas Island at the Naval Air Weapons Center. The missile demonstrated its ability to hit a user-defined target impact point, the 500-pound blast warhead delivers lethal firepower against a wide variety of land-based targets, including coastal defence sites, surface-to-air missile sites, exposed aircraft, port/hardened facilities, and ships in port. Harpoon Block II improvements will maintain Harpoon’s probability of target kill even against ships very close to land and in congested waterways.

The multi-mission Block II missile is capable of being deployed from all current Harpoon missile system platforms with either upgraded existing command and launch equipment or the new Advanced Harpoon Weapon Control System (AHWCS). Block II also is fully compatible with Block I capability and existing HSLCS and AHCWS. Both HSLCS and AHCWS allow all Navies to utilize Harpoon for current and future missions. Harpoon Block II missiles are being sold under US foreign military sales agreements and have recently been offered to the RAN.

Fifth Dutch Kortenaer for Greece

Greece has taken over a fifth Kortenaer-class frigate from the Netherlands under a US$36m agreement.

The transfer of the ship, the former HRMS PIETER FLORISZ (F-386), includes a training and spare parts package incorporating at least one spare Rolls-Royce Tyne gas turbine engine.

The deal brings the total of Kortenaer-class frigates operated by the Hellenic Navy (HN) to seven. The ex-Netherlands ship is to be renamed HS BOUBOLINA and due to arrive in Greece by the end of this year.

Daewoo delivers frigate to Bangladeshi Navy

The South Korean shipbuilder, Daewoo Shipbuilding & Maritime Engineering, has delivered a new 2,300-tonne DW 2000H frigate to the Bangladeshi Navy. BNS BANBANDHU, a Kortenaer for Greece, was delivered to the Bangladesh Navy in her new home in Bangladesh.

The BNS BANBANDHU (F-25) on her way from South Korea's Daewoo shipbuilding facility to her new base in Bangladesh.
USN SSNs double up at Stirling

In a rare event for an Australian naval port, two USN SSNs docked at Fleet Base West, one at the beginning of her cruise, the other at the end. The timing of this event was also special, with the submarines arriving a few days before the 25th anniversary of the first USN SSN visit to an incomplete HMAS STIRLING (known back then as the West Coast Naval Facility) of the Skipjack class submarine USS SNOOK (SSN-592) on 14 August 1976.

On 31 July 01 the Los Angeles class submarine USS ASHEVILLE (SSN-758) tied alongside Diamantina Wharf and was expected to immerse alongside Diamantina Wharf and was expected to immerse 

New Patrol Boats on the way

In line with strategy commitments of the Defence White Paper, the Request For Tender for replacements for the RAN’s 15 aging Fremantle class Patrol Boats - a project worth up to $450 million to Australian Industry - has been issued.

Despite the Fremantles providing almost a quarter of a century of good service to Australia, they are becoming increasingly difficult to maintain.

Ordered by Naval personnel, the new Patrol Boats are expected to continue to provide operational training for Navy personnel at the front line of Australia’s defences against people smuggling, illegal fishing, the narcotics trade and breaches of Australia’s quarantine regulations.

The RAN contributes 1800 Patrol Boat days each year to Coastwatch operations protecting Australia’s maritime zone.

USN suffering mine warfare deficiencies

A report by a committee of the National Research Council, commissioned by the chief of naval operations, Admiral Vernon Clark, has criticised the USN’s abilities to detect and cope with the threat of mines. The report stated that although the number of countries that have a mine deployment capability is rising, due to a global lack of regulation in this area, the nature of the development of the USN has led to the neglect of its ability to defend against this type of mine threat.

The report recommended that an increase of approximately 30% in the mine warfare budget would be required to resolve the current underfunding of mine countermeasures (MCM). It cited the "aging and decreasing inventories of mines, the absence of an effective mining capability beyond shallow depths, the termination of all mine acquisition programs, the dramatic decline in development activity at Navy laboratories, the loss of an industrial base and the lack of training and exercises", as evidence of the decline in this area.

Furthermore, the report identified significant spatial areas throughout the globe where mines could be used as an effective defence to supplement any naval fleet. The report said that since 1950, 14 U.S. ships have been sunk or damaged by mines, seven times as many as have been damaged by missile or air attack.

The $5.6 billion due to be spent over the next 7 years by the USN, the majority is to be spent on MCM, but the report warned of the disadvantages if the navy lost the capability to lay mines. Specifically it used the example of how mines could be used to defend Taiwan from possible Chinese attack.

As well as advocating the improvement of US mining capabilities, the report suggested that the government work towards improving international laws governing the exportation and spread of mines.

Israel's Gal SSKs go unwanted

Israel has been unable to find buyers for its three ageing Gal-class diesel electric submarines in a saturated submarine market.

The submarines were delivered in the mid-1970s and have recently appeared for the first time in the "Israel Defence Sales Directory" under the chapter of Surplus Naval equipment. Unofficially, the Israeli Navy has been trying to unload the BNS BANGABANDHU for over a year without success.

An Israeli official said that they have been offered to a range of European, Asian and South American countries with interest being shown from India, Poland and Sri Lanka.

The official said that the Defence Ministry would spend this year and part of 2002 seeking a buyer for the subs before deciding whether to sell them for scrap metal.

British contractor Vickers constructed the 600-ton Type 540 submarines which have a top speed of 17 knots and a maximum operational range of 2,500nm with a crew of 23. They have eight torpedo tubes and are sub-Harpoon capable.

The stripped footage of the USN EP-3 brought down one Hainan Island after colliding with a Chinese air force fighter. The aircraft was first stripped of its engines, then roll section and finally its wings before being loaded into a Russian Antonov An-24 for the flight back to the US. The plane was declared repairable on the spot for flight back to the US by a Lockheed Martin team but the Chinese insisted it be disassembled and flown out by non-US military aircraft. China is still demanding compensation from the US for the incident (USN).
Observations

By Geoffrey Evans

THE FEDERAL ELECTION

During the currency of this issue of THE NAVY the Australian people will decide whether or not to change the country's government.

While at the time of going to press (late August) neither foreign affairs nor defence appear likely to become a subject of contention between the political parties to the extent of affecting the result of the election, it is proper to take a brief look at recent statements by senior politicians to gain some idea of the likelihood of major changes in policies in the event of a change in government.

With regard to foreign policy it is true to say that for many years policies have been developed steadily by successive governments, each taking into realistic account changing international relationships and circumstances; and that the basic tenets of policy have always been accepted by the major political parties and wider Australian community.

In recent times some differences have emerged, notably concerning Australia's relations with its most populous neighbour, Indonesia, and with aspects of United States policy, principally that country's missile defence plans and its commitments to some other countries. It would be regrettable if such differences as may exist were to be exaggerated by rash statements during the run-up to the election.

Defence and foreign policies are of course closely linked but while the later can be changed quickly by a government if it was thought desirable, defence policy that has resulted in a particular armed forces structure cannot be changed nearly so quickly.

The Defence Department's main concern would seem to be, whichever political party is in power, the annual requirements for the parliament to approve the funds allocated for defence.

Despite the existence of Defence White Papers and long-term commitments, a government can delay completion of a or in some circumstances cancel a contract depending on its reading of the nation's circumstances at the time. The cost penalty may well be severe but there are precedents.

COASTWATCH

Several items in the July 2011 issue of the US Naval Institute's journal PROCEEDINGS would be studied by advocates of an Australian coastal surveillance organisation based on the United States Coast Guard (USCG). In fact, the Americans have looked at Australia's model, Coastwatch, which has so far avoided many of the problems troubling similar organisations in other countries.

In both the United States and Australia the maritime surveillance organisations have an extremely wide range of responsibilities and have to perform effectively in remote areas. The responsibilities are to a number of government departments and agencies that also have land-based responsibilities, eg Customs, Immigration, Quarantine, Federal Police, Transport etc.

In PROCEEDINGS Captain Goward from USCG headquarters Washington writes that the Coast Guard's priorities will never be altered until it is bound to the myth that it is a single, monolithic organisation and accepts the reality that it is a multiplicity of unified and individual entities actually supporting maritime surveillance organisations. It must also focus on the individual services, not the holding company, in the competition for federal dollars and support.

The USCG's situation as one of the US armed forces while a part of the civil service Department of Defence with consequential funding problems, appears to be at the heart of its troubles.

Australia's Coastwatch has gone a long way to avoid the American experience of obtaining approval of clients' agencies such as Custom Bay class vessels, Defence's patrol boats and Orin aircraft, and being threatened with invasion by counter-attacks from other defence services.

An experienced senior naval officer seemed from the Department of Defence as Director-General has the responsibility of co-ordinating and overseeing the various surveillance organisations so far this arrangement has worked satisfactorily judged by the success rate of apprehending illegal arrivals even if a good deal appears to depend on the personal ability and enthusiasm of the officer appointed to ensure all concerned work closely together.

After the foregoing notes were compiled the long-awaited Joint Committee of Public Accounts and Audit report on Coastwatch was tabled in Parliament.

The committee made a number of recommendations designed to improve the organisation but concluded that 'current Coastwatch represents the best value for money'. This has been the view expressed by Observations in several issues of THE NAVY.

Admiral Sir Anthony Symon

The death of Admiral Symon on 4 July 2001, was noted in several countries in the form of newspaper articles and obituaries describing his distinguished service as an Australian naval officer and armed forces leader.

So not well known was the Admiral's relationship with the Navy League of Australia from 1972 until 1991 when he relinquished his position as a member of the League's Federal Advisory Council, an appointment he accepted after retiring from the defence force.

It was the writer's good fortune to be able to discuss national and wider interests for the whole of his period. At Admiral Symon's request much of his future interest have been retained.

After serving as Fleet Commander and Director of Joint Staff in the Defence Department Admiral Symon became Chief of the Naval Staff (CNS) in 1976, with the Services Oversight Committee made necessary by the 1975 decision to integrate the Navy, Army and Air Force in a single Department of Defence. As CNS he also had the vexatious matter of the aircraft carrier MELBOURNE to deal with. The Navy League was quite heavily involved in both issues.

In both the US and Australia several items in the July 2001 issue of US Naval Institute's journal PROCEEDINGS would be studied by advocates of a similar organisation based on the United States Coast Guard (USCG). In fact, the Americans have looked at Australia's model, Coastwatch, which has so far avoided many of the problems troubling similar organisations in other countries.

In both the United States and Australia the maritime surveillance organisations have an extremely wide range of responsibilities and have to perform effectively in remote areas. The responsibilities are to a number of government departments and agencies that also have land-based responsibilities, eg Customs, Immigration, Quarantine, Federal Police, Transport etc.

In PROCEEDINGS the writer examines this ship's 'Escape from Soerabaja'.

The Strategic Situation

December 1941 found the Royal Netherlands Navy (RNN) preparing for the Japanese invasion of Southeast Asia, including the Dutch territory of the Netherlands East Indies (NEI). Prior to the outbreak of hostilities, Dutch naval authorities had coordinated defence planning with their British and American counterparts as the RNN was not strong enough to defend the islands without assistance.

With the severe losses suffered by the USN at Pearl Harbor and heavy demands on the RN for units in the Mediterranean, Allied forces were stretched thin. In January 1942 land, air, and naval units of the American, British, Dutch, and Australian (ABDA) forces were assembled under the overall command of British General Sir Archibald Wavell, Commander of Allied naval forces was held by Admiral Thomas C. Hart, USN and later Vice Admiral Conrad E.L. Helfrich. RNeD. Land-based aircraft to scout for Japanese ships, leaving the Dutch submarine force with assistance from a few British and more numerous American subs to intercept the Japanese invasion forces. The larger surface ships of ABDA, limited to cruisers and destroyers after the loss on December 10, 1941 of the battleship HMS PRINCE OF WALES and battleship HMS REPULSE to Japanese attack, were divided between convoy escort and assignment to a multinational striking force under command of Rear Admiral King F.W.M. Doorman, RNeD.

One of the truly remarkable stories of naval daring during the opening stages of the Pacific War, when the naval forces of Japan seemed unstoppable, concerns the little Dutch ship HR. MS. ABRAHAM CRIJNSEN. This small mineweeper with hardly any armament, a maximum speed of 15 knots, and bunkerage for only 105 tons of fuel made a lengthy solo journey across the waters controlled by the Japanese Imperial Navy to reach and continue the war.

Mark C. Jones examines this ship's 'Escape from Soerabaja'.

Of the many amazing escapes of naval ships and aircraft from superior forces during World War II, one of the best known is that of the Polish submarine O.R.P. ORZEL. After several days of patrolling the southern Baltic under heavy pressure from German ships, ORZEL moved farther north.

After landing the commanding officer at Rcval (now Tallinn) due to illness on September 14. ORZEL was interned the next day by Estonian naval authorities. The boat was then demilitarised with all but five torpedoes, shells for the deck gun, and all charts taken from the boat.

ORZEL's crew, under the leadership of the executive officer, Lieutenant Commander Jan Grudzinski, overpowered the Estonian guards and put in US September 18 under small arms and artillery fire. Drawing on the collective knowledge of the officers, a crude map of the Baltic was drawn to hand in the escape to Great Britain.

ORZEL remained on patrol for two more weeks before attempting an escape. After two weeks of careful navigation through waters controlled by Germany, ORZEL arrived at Rosyth on October 14, 1939 and was included in operations with the Royal Navy's 2nd Submarine Flotilla in December. ORZEL made several patrols in the North Sea, including sinking the German troop transport RIO DE JANEIRO off Norway on April 8, until the boat failed to return from a patrol in June 1940. While the story of ORZEL is certainly a tribute to the skill and courage of officers and men of ORZEL, there is perhaps a less well-known escape that demonstrated equal bravery and great cleverness.

The little Dutch minesweeper HR. MS. ABRAHAM CRIJNSEN still exists as a museum ship at the naval museum in Den Helder, in the Netherlands.
One of the Little Ships

One of the small vessels stationed at Soerabaja was the minesweeper HR. MS. ABRAHAM CRIJNSSEN. Built in 1936, this 40-ton (standard, 585 ton full load) steel-hulled minesweeper of the Jan van Amstel class was armed with a 3-inch gun plus four small anti-aircraft machine-guns, with a crew of 46. Like her sisters, CRIJNSSEN was named for a famous naval ship captain of the Dutch Golden Age during the 17th century. CRIJNSSEN was employed in minelaying, minesweeping, and convoy escort duties to major ports in the NEI from January 1939. In October 1938, CRIJNSSEN was transferred to the 2nd Minesweeper Division and, with her commander Lieutenant Commander van Miert, assumed command of ABRAHAM CRIJNSSEN. Lieutenant Commander van Miert was a graduate of the Royal Netherlands Naval Academy at Willemsoord near Den Helder. His early postings consisted of several tours in the NEI including service on the new light cruiser DE RUYTER. As a Lieutenant, van Miert was detailed in August 1939 as the executive officer of the newly commissioned mine layer WILLEM VAN DER ZAAN and temporarily served as Captain from January to April 1941. In October 1941, Lieutenant van Miert left WILLEM VAN DER ZAAN and assumed command of ABRAHAM CRIJNSSEN. This was a critical period of the war in the NEI, and ABRAHAM CRIJNSSEN was often employed in minelaying and minesweeping operations in the NEI's ports and waterways. CRIJNSSEN used her motorboat to reconnoitre local shipping and to gather intelligence about enemy air and surface activity in the area. With the success of the Java Sea battle, ABRAHAM CRIJNSSEN was able to sail southward along the coast until it finally reached Geraldton at 1200 hours on Sunday, March 15. The ship's crew was able to secure the ship and set sail for Australia. ABRAHAM CRIJNSSEN was able to sail southward along the coast until it finally reached Geraldton at 1200 hours on Sunday, March 15. The ship's crew was able to secure the ship and set sail for Australia.
Changing National Strategy

Current US military strategy calls for enough forces to fight two nearly simultaneous major theatre wars (MTW) and to support global peace operations (military operations other than war; MOOTW). That strategy determines in large part the number of combat forces that the US military maintains. Military critics have consistently maintained the current force structure is totally incapable of meeting those requirements. A March 2000 presentation to the QDR Preparation Group lists the following questions under the 'Strategy' and 'Force Structure' headings:
- Should strategy be capability-based, threat-based, or a combination?
- Is scenario-based planning viable in determining force structure?
- Is the two MTW requirement the right sizing convention?

Yet the "...Navy and Marine Corps team is one of the most visible aspects of United States diplomacy around the world." (Testimony, VADM C.C. Lautenbacher, April 21, 1999). The future of the US Navy will be shaped by the decisions embedded in the forthcoming Quadrennial Defense Review (QDR II), due by September.

In today's constrained fiscal context, the size and shape of the US Navy out to 2020 will be the subject of major debate. The 1997 QDR called for a 315 ship Navy centered around 12 Carrier Battle Groups (CBG), 12 amphibious ready groups (ARG), and about 50 nuclear attack submarines.

Navy leaders now maintain that the current fleet cannot meet its stated requirements and must increase in size. President Bush has called for a "new" military focused on "lighter" and "more lethal" forces equipped with advanced technology. Other critics argue that a force of fewer than 230 ships by 2025 - too few to come close to meeting current operational requirements.

The only warship currently in production in the US is the Arleigh Burke Flight IIA class destroyer. Work needs to start soon on the new DD-21 destroyer. Here USS ROOSEVELT executes a turn during her acceptance trials. (USN)

Changing the means to goals

The official Navy Strategic Planning Guidance (NSPG) with Long-Range Planning Objectives (April 2000) offers some insights into existing plans for the early 21st century. The strategic objectives of US naval forces will not change: control of the high seas, protection of vital sea lanes, and influencing events ashore in pursuit of US and allied interests.

But the methods by which these objectives are achieved have been under careful review. Two key trends stand out:
- the ongoing transformation of the US naval mission toward a landward focus on the littorals;
- a growing realization that in an era of globalization the information age has revealed an international medium as important as the oceans—cyberspace. These environments call for two means, the traditional "forward presence", and a presence complemented by "knowledge superiority". Asymmetric threats will be more important in the coming two decades, as rendered obvious with the devastating terrorist attack on the destroyer USS COLE in Aden, Yemen in October 2000.

There are two major problems with the current plans:
1. Navy leadership has already rejected the planned fleet as inadequate to meet stated requirements;
2. The planned shipbuilding budget doesn't even come close to sustaining a 300 ship fleet, much less a larger one.

Fiscal crisis ahead

In testimony before Congress in September 1999 the Chief of Naval Operations put it this way: "the mounting evidence leads me to believe the 305 ships is not likely to be enough in the future." In particular a force of only 116 surface warships has come under severe criticism, as has a force of only 50 nuclear attack submarines. Among the figures sometimes mentioned as more realistic are a 360 ship Navy with 15 carriers, 130 surface ships and 68 attack submarines.

Unless there is a very large increase in the Navy's budgets, by the year 2020 the fleet will have declined steadily in numbers to as few as 200 ships. In the estimate of the Congressional Budget Office, DoD requires an annual budget increase from the 2000 $289 billion to $327 billion. Even President Bush's campaign promise to increase the US defense budget by $45 billion over the next nine years does not come close to addressing that gap.

Future naval shipbuilding

At present, the Navy has plans for the following combatant ship construction between year 2001 and 2003:

<table>
<thead>
<tr>
<th>Programme</th>
<th>Number</th>
<th>Cost (in million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nimitz and CVN</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Arleigh Burke DDD</td>
<td>28</td>
<td>24.5</td>
</tr>
<tr>
<td>Zumwalt DDG (DDG 201)</td>
<td>21</td>
<td>28.5</td>
</tr>
<tr>
<td>New Cruiser CG (21)</td>
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<tr>
<td>SeaWolf SSN (21)</td>
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<td>4.4</td>
</tr>
<tr>
<td>Virginia (SSN)</td>
<td>30</td>
<td>66</td>
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</tbody>
</table>

(Source: US Navy, AMI Information, 2001)

"The above construction obligues US$139.5 billion in new combatant construction, and would not include the requirements for new amphibious landing and replenishment ships to maintain a robust "forward presence".

According to the Congressional Budget Office, the Navy's shipbuilding budget is short about $1.4 billion a year through 2020 in its current plan to build 64 vessels by 2010 and that the plan will sustain only a 200 ship fleet. Some Navy officials suggest the gap is much larger than that.

Not listed above is another major funding program, the 12 ship "Lewis and Clark" class T-AKE Auxiliary Dry Cargo Vessel (formerly ADCLX). The FY2000 budget included $437.6 million for the lead vessel; FY 01 included one ship ($335.8 m) and FY 02 includes $370.8 million towards the third ship.

CVX-1 for FY05?

Early in 1998, a Navy commission recommended a new carrier (CVN-X) of "about 100,000-tons displacement with a large flight deck design capable of embarking a large air wing and future manned and unmanned aircraft designs." The study basically validates the improved Nimitz class CVN-77 design.

USS RONALD REAGAN (CVN-76) was 73% completed and launched in March this year; estimated delivery date is late February 2003. In order to sustain the current 12-carrier force, CVN-77 is to be laid down in 2002, launched in 2006, and commissioned in 2008. CVN-78 is to be laid down on launching CVN-77, and commissioned in 2013. CVN-79 would be laid down in 2011 and commission in 2018. However, keeping USS JOHN F. KENNEDY (CV-67) in service until 2018 seems optimistic to maintain the 12-carrier force. Building CVN-77 and CVN-78 consecutively would have obvious cost savings and operational advantages.

Some critics maintain that the CVN-X concept is too conservative and should be cancelled in favor of more advanced technology. Other critics argue that a force of nine carriers would be adequate with a more realistic strategy.

There is considerable uncertainty, however, about the size and makeup of the Navy's combat carrier wing. The Naval Postgraduate School and Naval War College are working on advanced ship concepts, such as "Corsair" - a small, advanced hull platform for carrying as...
A widely popular option that must be undertaken prior to 2003 is to convert four Ohio class SSBNs into a guided missile (SGSN) and Special Forces configuration, deploying as many as 154 BGM-109 cruise missiles and housing a 100-man Special Forces team (see Flash Traffic section SSBNs Michigan and Georgia to SSGNs).

At current funding levels, the Navy cannot even sustain the current 55-boat fleet, much less the desired 68.

**Surface Forces**

The only surface combat ship in production at this time is the Arleigh Burke Flight IIIA guided missile destroyer. Twelve ships are under construction and 17 more are planned, at a rate of over one per year. 28 DDG-51 Block I and II ships are currently in service. Some critics argue that the "Burke" class is an expensive Cold War design not suited for littoral war, and cite the attack on the USS COLE as evidence. Reducing numbers may be necessary.

**DD-21 Zumwalt class**

Last year the Navy announced the future 'Land Attack' DD-21 Zumwalt class would be the first class of ships designed and built during this century to be powered by electric drive featuring an integrated power architecture. Current plans call for a total of 32 ships.

Released design features estimate a stealthy 10-14,000-ton 30-knot vessel firing with 128 cells for a mix of land-attack, anti-ship and anti-air missiles. The ship's highly automated systems would reduce the crew to 95, far below the complement of current warships.

The current acquisition schedule calls for laying down the first ship in 2004, with three DD-21s to be laid down in FY2005 through 2009. First ship delivery in 2008, with initial operational capability the following year.

There is strong support in the Navy and Marine Corps for this new concept missile destroyer. The $25 billion DD-21 program is still on the books - vulnerable under QDR II. The danger inherent in such a move is the survival of naval shipyards, a key and irreplaceable component of the nation's defence industrial base.

**Marine Corps programmes**

The US Marine Corps' new concept entitled 'Ship to Objective Maneuver' (STOM) dispenses in most cases with the traditional landing and 'beachhead' assault. Instead, sea-based Marine forces would avoid heavily defended beaches, and directly attack key inland objectives.

The heart of the Amphibious Ready Group (ARG) is the Amphibious Assault Ship (LHA),a fast, 100-car power plant capable of 25 knots at sea.

The Wasp class LHD USS BONHOMME RICHARD seen here leaving port. The USN has just commissioned its 7th Wasp class LHD giving it 17 USMC carrying 'big deck'. Cost overruns and delays in other amphibious ship programme could place it properly under LHD conversion (USN). ORLEANS were done in September 2003 and August 2004, but the program is 24-months behind schedule due to design problems. Congress also slashed funding to $421.3 million for FY02. Cost overruns have also driven LPD-17 ship costs up from $974 million to $1,166 billion for LPD-17 and LPD-19 from $806 million to $856 million. Future ship estimates are nearer $700 million.

There remain serious issues of whether QDR II will continue to support the ARG force level. Reduction will mean reduction in LPD-17s. The Navy also has seven Vehicle Cargo Ship (T-AKR) ships under construction, with T-AKR-102 MENDOCA due from commission shortly and T-AKR-317 delivery due in September 2002.

Beyond the basic ship platforms, the Marine Corps insists it must replace all three elements of its assault transport vehicles to implement its 'ship to objective maneuver' strategy: aircraft, amphibious assault landing craft, and air-cushioned landing craft.

**Troubled bird: Osprey**

The operational linchpin of the Marine Corps' STOM concept is the revolutionary MV-22 Osprey. The MV-22 has the lowest IR signature of any Navy/Marine aircraft and is the first USMC 24 fully equipped 12-car, 9,000-kgs of cargo up to 200-m. The Marines currently plan to acquire 360 Ospreys under the 1997 QDR Full rate production was scheduled to begin in FY 2004, with a 30% rise in annual production. First production aircraft were handed over in May 1999.

The MQ-8C Fire Scout unmanned aerial vehicle (UAV) system is a highly compact, low-cost, low-altitude, long-endurance unmanned aerial system designed as an advanced technology demonstrator and to be delivered to the Navy in 2010.

**The USMC is adamant that the MV-22 Osprey is vital to its concept of STOM (Ship To Objective Maneuver) and land assault capability is unsustainable by any 'helicopter', including its price.**

The Osprey program is in serious trouble. Four of the first 12 aircraft ordered were grounded and the rest are grounded pending the outcome of an ongoing full program review. A hydraulic system redesign has been ordered. The program cost for full rate production of 458 V-22s is about US$41 billion – or US$83 million each (inflation adjusted) – with production terminating in 2013. US$12 billion has already been spent. The Marine Corps remains adamantly in its defence of the Osprey as the heart of the Navy-Marine-Naval Force concept, and without it the Marine Corps will cease to exist.

**What kind of Navy does the US want?**

If one assumes that retaining the current strategy and adapting the future force to it our will not happen due to fiscal and political realities, what are some proposed solutions to the Navy's dilemma?

At the level of national military strategy, the 'win two major near-simultaneous theatre wars' requirement is already a 21st century scenario. Even a 200-ship, 10-carrier Navy will force adjustments on the "forward presence" mission in the Asia-Pacific Rim. At the level of the US Navy's doctrine, Naval Postgraduate School Professor James Wirtz, recommends that a choice be made. Does the US need a 'Golden Age' Navy that estimates no serious blue-water naval threat and only minimal land-based threats, and concentrates on forward presence and expeditionary missions? Or is the USMCF's concentration on lighter but more lethal forces—and keep the Osprey program alive? Or does the US need a 'traditional' Navy that will face the much more severe threat posed by an emerging 'peer competitor' (the PRC being mentioned most frequently) Such a Navy might build more carriers and SSNs—but cancel OSPREY and DD-21.

The 12-car ' Armen' will not be easy choices. The US Navy has the opportunity between now and 2020 to radically change its policies, including organisation, procurement, development, and deployment. New technologies may well allow for discarding of post-World War II deployment patterns, while joint operations with other services may offer major changes in the way the Navy deploys and employs its Navy-Marine forces. It should also be noted the future at 2010 or 2020 is not just about the US Navy, but 'joint operations' in which the US Navy is expected to operate alongside the other US services and allies. Based on current trends, inter-allied operations within NATO and other organisations are going to be more difficult, largely because of the growing technological gap between US and allied naval and air forces.

Doctrinal rejection of either the Navy or Marine Corps doctrinal tenants would also open the budgetary door to other US Air Force and its Global Strike Task Force concept, combining continental-based bomber forces and Air Expeditionary Force (AEF) doctrines. The Corps faces the same challenges from the US Army's "Army After Next" strategy and General E. Shinske's "military" for rapid reaction and early conflict insertion concepts. The changed strategic and fiscal realities of the new Millennium will indeed require a changed Navy.
Hatch, Match & Dispatch

DISPATCH

HMAS RUSHCUTTER and SHOALWATER

In a low key ceremony attended by few the Navy's two MHIs (Mine Hunter Inshore) HMAS RUSHCUTTER and SHOALWATER have been decommissioned. Both ships had been laid up in reserve for sometime before their decommissioning.

HMAS RUSHCUTTER was commissioned in November 1986 as an experimental/innovative way of combating mines. Her catamaran hull meant that she would have a much larger deck area, greater flexibility in case of a near mine detonation. HMAS SHOALWATER was commissioned in October 1987 and had a top speed of 10kts.

While the ships did not perform to expectation, it was hoped that the ships would be the first two of many, they did fill a gap in the RAN's mine countermeasures proficiency and training when the six Ton class mine sweepers were decommissioned without replacement and until the arrival of the Huon class. The future of the two Newcastle built ships is still unclear.

Notice is hereby given that the ANNUAL GENERAL MEETING

of THE NAVY LEAGUE OF AUSTRALIA

will be held at the Brassey House, Belmore Gardens, Barton, ACT

On Friday, 16 November 2000 at 8.00 pm

BUSINESS

1. To confirm the Minutes of the Annual General Meeting held in Launceston, Tasmania on Friday, 24 November, 2000

2. To receive the report of the Federal Council for the year ended 30 June 2000

3. To receive the financial statements for the year ended 30 June 2000

4. To elect Office Bearers for the 2001-2002 year as follows:
   - Federal President
   - Federal Vice-President
   - Additional Vice-President (4)

Nominations for these positions are to be lodged with the Secretary prior to the commencement of the meeting.

5. General Business:
   - To deal with any matter not specifically covered in the agenda

ALL MEMBERS ARE WELCOME TO ATTEND

By order of the Federal Council
Ray Corboy, Honorary Federal Secretary
PO Box 309, Mt Waverley Vic 3149
Telephone (03) 9888 1977 Fax (03) 9888 1083

PRODUCT REVIEW

The Australian Centenary History of Defence, Volume III
The Royal Australian Navy

Edited by Dr David Stevens
Oxford University Press
253 Normanby Road, South Melbourne, Australia
Reviewed by Captain Peter Lewchun, RAN.

The Royal Australian Navy is the third volume in the Australian Centenary History of Defence series. It has been edited by Dr David Stevens, the Director of Naval Historical Studies, and authored by him and five other noted naval historians. All have had a long association with the Navy in both regular and maritime roles and all have served in the Navy, most with long experience as serving officers. Between them, the authors are widely published on a range of Navy and maritime related subjects.

The book chronicles the development of the RAN from its genesis in the colonial naval forces at the end of the 19th century, through the creation of the Commonwealth Naval Forces at Federation, the grant of the title Royal Australian Navy by King George V on 10 July 1911, and the arrival of the Australian Fleet in Sydney in 1913. Subsequent sections of the book cover World War I, the interwar years, World War II, Korea, the move from Forward Defence to Self-Reliance, and the change, uncertainty and reforms that have taken place in the RAN in the last twenty years.

The description of historical events is quite detailed but very readable. While the famous events of RAN history, such as the SYDNEY-EMDEN battle, are well covered, it is perhaps more interesting to learn just how many other, sometimes obscure, operations the RAN has been involved in, in both peace and war. It is striking that there is no period in the last 100 years when the RAN has not been almost continuously engaged in operations, independently, jointly, or in concert with allies and coalition partners.

For the chronicle of events is both interesting and useful, perhaps the greater strength of this book is the way it puts these events into their political, strategic and technological context. The book clearly shows how government and the RAN assessed and responded to the events of the day, and how the force structure and personnel base waxed and waned over time. Herein lies one of the most valuable lessons of the book, if we did not already know it: the current period of major change, budgetary constraints and Defence reform is, in many respects, not new. Nor are current difficulties with recruiting and retention of people. This book clearly reveals that this has been a recurring problem throughout the RAN's history.

Another theme of the book is the quest for a balanced fleet. This has always been a goal for the RAN, and one that has been achieved to a credible level by the standards of the day on a number of occasions. Nevertheless, the book makes it clear that it has been a constant struggle to achieve and maintain such a force structure. Two of many possible examples are the O' Class submarines. The RAN has fielded a submarine force early in World War I, with the 'J' Class from 1919-22, the 'O' Class from 1927-30, and then the Oberon and subsequent Collins Classes from the mid-1960s. Similarly, Fleet Air Arm fixed wing and helicopter forces have undergone major changes. In recent times the RAN has had to work very hard to restructure the aviation force around Seahawk (and soon Super Seawolves) helicopters operating from frigates. It is interesting to learn, however, that in the late 1950s the future of the Fleet Air Arm was under real threat. It was a hard fought battle, under then Minister for the Navy, John Gorton, which eventually led to decisions to acquire Wespes, Tracker and Skyhawk aircraft between 1961 and 1965. One lesson of these and other examples is that the loss and subsequent reintroduction of major naval capabilities has occurred quite regularly, and has always been a traumatic experience. Navy can, therefore, be well pleased with the direction set in Defence 2000: Our Future Defence Force, but history suggests that full implementation of the program will require a long and hard fought struggle.

Oxford University Press has very attractively produced the book. The format includes foldouts showing interesting cut away drawings of some of the more important classes of RAN ships. The appendices contain a wealth of information; the charts showing the development of the RAN force structure through the 20th century provide a particularly useful reference that supports the text very well.

Overall, the Royal Australian Navy is a most interesting and readable book. It should be a standard reference for all those with a professional or more general interest in the RAN and its vital importance to Australia's security. And here, perhaps, may lie its most important contribution to the defence debate in Australia. For a maritime nation, Australians in general are not well informed about the long term and continuing importance of maritime issues to Australia. This book goes a long way towards addressing this lack of understanding.

Review courtesy of the Australian Naval Institute
The discussion of the emergence of Australia's Navy, it is easy to propagate the conventional wisdom that Britain was obstructionist and the visit of the Great White Fleet a retort. Nicholas Lambert exposes an entirely different context for what was actually admirably supported for an Australian Fleet Unit. James Rocker casts light on the American perspective on the US Fleet visit of 1908. Transition from a past involving conflict to a situation of friendship and alliance is an interesting process, and nowhere more so than in the case of the United States' relationships with current allies such as Australia and Britain. Nicholas Tracy's chapter on the union of imperial naval policies provides interesting comparisons with issues underpinning development of Australia's Navy. David Stevens' account of the early recognition of what is now Australia's predominant strategic reality - the sea-air gap to the north - illuminates the national side of the same regional contours. He gives fascinating insights into the extent to which flawed personal relations can diminish an organisation's potential. James Goldrick's contribution strikes the balance between national territorial defence and global interests. More important is the distinction he draws between acquiring a fleet and achieving a Navy. Many will recall Vice Admiral Ian MacDougall's comments as CNS on the subject of Australia's path to self-reliance. Goldrick highlights this issue and suggests what it means for Australia's relationships. The business of getting a Navy is a fundamental assertion of national status and interest, bringing its own substance to our national independence. In Australia's case, as Southern Trident shows, the getting of a Navy has been more of a substantial assertion of emerging Australian interests than is often recognised.

Each of the chapters in Southern Trident attracts interest and provokes discussion. Some open new doors, others combine learning with an easy touch, and still others call for concentration but are very definitely worth the effort. I have referred briefly to a selection from very good company. Anyone with an interest in naval matters - Australian or international - will find Southern Trident an interesting, informative and thought-provoking read. I expect that many readers will find value, as I will, in returning to it out of professional purpose and personal interest.

Review courtesy of the Australian Naval Institute.
The Navy League:  
- Believes Australia can be defended against attack by other than a super or major maritime power and that the prime requirement of our defence is an evident ability to control the sea and air space around us and to contribute to defending essential lines of sea and air communication to our allies.  
- Supports the ANZUS Treaty and the future reintegration of New Zealand as a full partner.  
- Urges a close relationship with the nearer ASEAN countries, PNG and the Island States of the South Pacific.  
- Advocates a defence capability which is knowledge-based with a prime consideration given to intelligence, surveillance and reconnaissance.  
- Believes there must be a significant deterrent element in the Australian Defence Force (ADF) capable of powerful retaliation at considerable distances from Australia.  
- Believes the ADF must have the capability to protect essential shipping at considerable distances from Australia, as well as in coastal waters.  
- Supports the concept of a strong Air Force and highly mobile Army, capable of island and jungle warfare as well as the defence of Northern Australia.  
- Supports the acquisition of AWACS aircraft and the update of RAAF aircraft.  
- Advocates the development of amphibious forces to ensure the security of our offshore territories and to enable assistance to be provided by sea as well as by air to friendly island states in our area.  
- Advocates the transfer of responsibility, and necessary resources, for Coastal Surveillance to the defence force and the development of the capability for patrol and surveillance of the ocean areas all around the Australian coast and island territories, including in the Southern Ocean.  
- Advocates the acquisition of the most modern armaments and sensors to ensure that the ADF maintains some technological advantages over forces in our general area.  
- Advocates measures to foster a build-up of Australian-owned shipping to ensure the carriage of essential cargoes in war.  
- Advocates the development of a defence industry supported by strong research and design organisations capable of constructing all needed types of warships and support vessels and of providing systems and sensor integration with through-life support.  

As to the RAN, the League:  
- Supports the concept of a Navy capable of effective action off both East and West coasts simultaneously and advocates a gradual build up of the Fleet to ensure that, in conjunction with the RAAF, this can be achieved against any force which could be deployed in our general area.  
- Believes it is essential that the destroyer/frigate force should include ships with the capability to meet high level threats.  
- Advocates the development of afloat support capability sufficient for two task forces, including supporting operations in sub-Antarctic waters.  
- Advocates the acquisition at an early date of integrated air power in the fleet to ensure that ADF deployments can be fully defended and supported from the sea.  
- Advocates that all Australian warships should be equipped with some form of defence against missiles.  
- Advocates that in any future submarine construction program all forms of propulsion, including nuclear, be examined with a view to selecting the most advantageous operationally.  
- Advocates the acquisition of an additional 2 or 3 Collins class submarines.  
- Supports the development of the mine-countermeasures force and a modern hydrographic/oceanographic fleet.  
- Advocates the retention in a Reserve Fleet of Naval vessels of potential value in defence emergency.  
- Supports the maintenance of a strong Naval Reserve to help crew vessels and aircraft in reserve, or taken up for service, and for specialised tasks in time of defence emergency.  
- Supports the maintenance of a strong Naval Reserve Cadet organisation.  

The League:  
Calls for a bipartisan political approach to national defence with a commitment to a steady long-term build-up in our national defence capability including the required industrial infrastructure.  
While recognising current economic problems and budgetary constraints, believes that, given leadership by successive governments, Australia can defend itself in the longer term within acceptable financial, economic and manpower parameters.
HMAS CESSNOCK working with a RAAF P-3C Orion aircraft during a search exercise. The Australian government has rushed several P-3Cs and extra patrol boats and ships into the North West area of Australia around Christmas Island to halt an expected rush of illegal immigrants in the wake of the MV TAMPA settlement (RAN).

The SSN USS CHICAGO at periscope depth in the waters off Singapore. The image shows the susceptibility to visual detection a submarine is exposed to when near the surface. (USN)
AS A REPRESENTATIVE OF A COMMERCIAL MARITIME OR DEFENCE-RELATED INDUSTRY OR A MEMBER OF THE DEFENCE FORCES

The Pacific 2002 International Maritime and Naval Exposition will be the most significant trade fair of its kind ever held in the Asia Pacific region.

It will afford a unique opportunity to forge new business relationships and consolidate existing ones.

Defence and industry visitors will be made most welcome at this comprehensive showcase, featuring the latest developments in commercial maritime and naval technology.

Pacific 2002 will be supplemented by the International Maritime Conference and the Royal Australian Navy’s Sea Power Conference. The Exposition is being held at the Sydney Exhibition and Convention Centre, Darling Harbour.

Pacific 2002 will provide a focused and informed business environment. Mark it as an essential date for your calendar.

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