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PRINCIPLES OF AUSTRALIAN MARITIME OPERATIONS

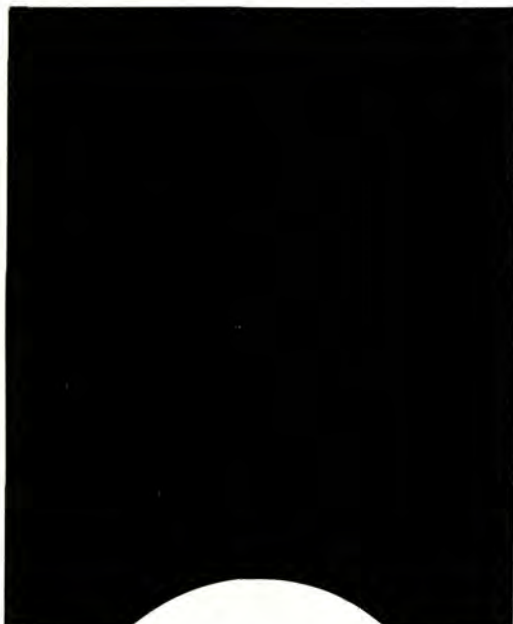
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ABSTRACT

Australia is undeniably a maritime nation, yet it is only recently that Australia has begun to realise the importance of its maritime interests and the need for a sound maritime strategy to defend those interests. This Working Paper considers the evolution of maritime strategic thinking and the maritime strategic concepts that are applicable to a medium power like Australia. It highlights the growing importance of Australia's maritime interests and seeks to explain some principles of Australian maritime operations that would form the basis of a strategy to defend those vital interests.

This paper has been prepared as a precursor to an expanded monograph on the same subject being prepared by the Maritime Studies Program of the Royal Australian Navy (RAN).

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PRINCIPLES OF AUSTRALIAN MARITIME OPERATIONS

W.S.G. Bateman
and
R.J. Sherwood*

Australia is an island. The nation's area of direct military interest constitutes about 10 per cent of the earth's surface and is to a large extent maritime in nature.¹ Australia's marine and estuarine areas (including the continental shelf and Exclusive Economic Zone) exceed the country's land mass and encompass around 7.9 million square kilometres. Lying between three great oceans of the world (the Pacific, the Indian and the Southern), Australia has its main centres of industry and most of its population in the south and south-east, naturally protected by the adjacent oceans and inhospitable tracts of country to the north and north-west.²

Australia's geo-strategic setting is both unique and enduring. The oceans around Australia provide a natural security barrier and the major avenue for commerce both foreign and domestic. They also offer great potential for future offshore resource development.

Australia has important economic interests in the maritime environment. More than 90 per cent of Australia's trade by volume is seaborne; coastal shipping with its related infrastructure is essential for the movement of liquid fuel and other bulk commodities such as iron ore, bauxite and cement and is vital to the support of some of the nation's remote northern settlements. Exploitation of non-living and living resources in the marine environment is playing an increasing role in Australia's economic development. Additionally, Australia has significant offshore territories lying far out in the Pacific, Indian and Southern oceans.

The lack of common land borders, an abundance of natural resources and a spacious land mass have in the past tended to give Australians a deceptively continental outlook. While the large expanses of water which surround Australia confer on the nation certain security advantages, and provide a formidable barrier to any potential enemy, they are also the medium through which any adversary must pass. This is recognised in the importance placed on the sea-air gap (essentially to the north) in Australia's current defence strategy. *Defence of Australia 1987* (DOA 87) states that:

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By its very nature, the defence of Australia and its territories emphasises maritime warfare capabilities. The ADF [Australian Defence Force] must be able to conduct maritime operations to prevent an adversary from substantial use or exploitation of our maritime approaches.³

It is an essential element of this strategy that Australia can use the seas surrounding it for our own purposes (*sea assertion*) while denying that use to those who are inimical to our interests (*sea denial*). Sea assertion and sea denial are major facets of the ability of a nation to exercise *sea control*. Yet sea control is not a concept based solely on the instruments by which it is exercised (ships, submarines and aircraft). It is a complex interdependency of geographical, economic, technical and human factors as well as military capabilities.

Additionally, these factors influence the need of a particular country to exercise sea control. In Australia's case, geography, technology and human resource constraints mean that the ability to deny an adversary operational freedom in the approaches to Australian territory, while being a major constraint on hostilities would, more importantly, make the defence of such territory more manageable. This is a fundamental consideration in the strategy of defence in depth, which requires that any adversary should be met by a comprehensive array of relatively high-technology defensive capabilities as far forward as possible in the maritime approaches. To implement this strategy, Australia needs the ability to exercise sea control.

The concept of sea control is an important element of the theory of sea power, which is the major thrust of maritime strategic thinking. The basic elements involved had their origins in the period when war at sea became distinct in its tactics and techniques from war on land. The development of the science of navigation, the invention of the cannon, the advent of seaborne trade, the improvement in the sailing ship, and the rapid technological advances of the period following the industrial revolution have all played their parts in the development of the maritime school of strategic thought. It was first seriously enunciated by Mahan and has evolved over the last century through naval officers and scholars such as Colomb, Corbett, Gorshkov, Till, Booth, Grove and Hill.

There have been four important features of this school of thought. Firstly, that maritime strategy and the theory of sea power can be applied in military operations either in times of peace or in times of conflict; secondly, that in the conflict situation it involves more complex principles than simply war fighting; thirdly, it is truly a joint approach in that it recognises the roles and importance of land and air forces; and finally, that it integrates civil components of maritime power (the marine industries and maritime infrastructure) into its principles.

In the Australian context, the maritime school of strategic thought potentially provides the foundations on which the nation can move towards a concept of maritime power applicable to Australia's unique geo-strategic circumstances. This conceptual basis is not just a matter of naval or sea power, but one that properly reflects the importance of the maritime interests and the maritime environment in their entirety to Australia's security. It blends the contributions of the nation's maritime interests (such as seaborne trade, offshore territories, offshore resources) and marine industries (such as shipping, fishing, shipbuilding, offshore oil and gas) and the contributions of both naval and air capabilities to Australian maritime operations.

The purpose of this paper is to set out some principles of maritime strategy and some maritime operations that could be required to protect Australia and our national interests. These principles have been shaped not only by Australia's unique geo-strategic position but also reflect the concepts of sea power and maritime strategy proposed by Mahan and later writers, especially contemporary ones.

The operations described in this paper involve not only the Royal Australian Navy (RAN), but also relevant elements of the other two armed services that contribute to the maritime security of Australia and our national interests. They also recognise the support required from the Australian shipping industry and other elements of Australia's maritime infrastructure. They include maritime operations for periods of conflict or tension and those to be conducted in peacetime to promote a favourable regional strategic environment, which will prevent threats from arising.

Evolution of Maritime Strategic Thinking

Maritime strategic thinking has its origins in the use of the military forces in a naval sense in support of land forces during the Persian invasion of Greece in 480 BC.⁴ Historians such as Thucydides⁵ also provide illustrations of some concepts of maritime strategy from which later writers drew their inspiration. Following the technological developments of the cannon and the increased manoeuvrability of the sailing ship, writers such as Alonso de Charves, Sir Walter Raleigh and Sir Francis Bacon began considering maritime tactics and strategy in a practical sense.⁶

It was, however, the onset of the machine age that forced a group of predominantly Anglo-Saxon naval thinkers⁷ to consider seriously the theory of sea power. All were to argue that sea power conferred so many advantages that those nations that possessed it to a significant degree would have a dominant influence on world events. From an appreciation of the importance of the oceans to trade and imperial expansion, they argued that sea power was the means to national prosperity. All advocated the building of not only naval

power but also the civilian maritime components of fishing and merchant fleets, ports, overseas bases and colonies.

Mahan, in *The Influence of Sea Power upon History*, attempted to define sea power in an age of great technological transition. He set out three attributes on which sea power could rest: instruments of war (including bases to support such instruments), seaborne commerce and colonies.⁸ Adjusted for the march of history and the technological change of the twentieth century, these three attributes of sea power can be extended as follows to the present day:

- * Instruments of war would now equate to capabilities for maritime operations (including ships, submarines, aircraft, mobile land forces and the means of providing appropriate logistic support).
- * Seaborne commerce to the full range of a nation's commercial maritime interests would now embrace shipping, fishing, aquaculture, offshore mining and marine tourism activities.
- * The utility which Mahan saw in colonies is now provided by port access rights, alliance relationships and co-operative approaches to regional security through dialogue and confidence building.

If not a prophet of sea power, Mahan was at least a weathervane for a philosophical outlook whose time had come.⁹ Yet his work did not completely penetrate to the logical end of what he was proposing, nor did it seek alternatives to the three means he saw for gaining command of the sea: blockade, the decisive battle between opposing fleets or the fleet in being. This was left to other scholars, such as Richard Colomb. Colomb, in his work on naval warfare,¹⁰ stressed that a maritime nation's security was intrinsically linked with the ability *truly* to command the sea. This required enforcing authority in all aspects of maritime endeavour. He foresaw the central influence that a powerful force at sea would have on world affairs and to this extent was the true father of the modern concepts of naval diplomacy and presence.

Another writer, Sir Julian Corbett,¹¹ took Mahan's concepts further by recognising that while a maritime strategy comprised principles of warfare in which the sea was a substantial factor, those principles were only a component of a larger national strategy. Corbett steered away from the concept of the decisive battle and introduced the idea of sea control, with the objective of gaining control - either offensively by denying the adversary the use of the seas, or defensively by protecting shipping. He recognised that naval forces alone could not achieve total victory and stressed the importance of combined (joint) operations.

Admiral Sergei Gorshkov, in expounding the need for Soviet sea power, expanded on these fundamentals and further emphasised the economic importance of the maritime environment and the civil components (merchant and fishing fleets) of maritime power. He noted that the primary role of naval forces was ultimately to facilitate sea-based strike against an enemy. This

involved either anti-trade operations or direct action against the sources of the enemy's military power, rather than the more traditional application of force in action against the enemy's military forces.¹² Gorshkov thus highlighted the basic principles comprehended in maritime strategy, that conflict between nations is not conducted by military means alone and that not all military action has purely military objectives. These are not recent principles but ones that can be tracked over time in the history of economic warfare and that recognise the fundamental significance of economic factors as a cause of conflict between nations.

More recent scholars have sought to meld the development of these strategic principles, initially espoused by Mahan and others, into a schematic presentation of the functions of maritime forces. Ken Booth has proposed a trinity of naval functions: a diplomatic role, where navies are used in support of foreign policy either through a passive presence or in a manipulative/coercive sense; a policing role associated with sovereignty protection and coastguard-type activities; and a military role of projecting and maintaining a balance of power.¹³ Similarly, Geoffrey Till has characterised maritime strategy as comprised of two essential parts: the winning, keeping, contesting or ignoring command of the sea by means of the decisive battle, fleet in being or blockade; and purposive or preventive uses of the sea by means of coastal protection, protection of trade, projection of power ashore, naval diplomacy and strategic deterrence.¹⁴

Perhaps of more relevance in the Australian context has been the work of Rear Admiral Richard Hill, who has attempted to deliver a general theory of maritime strategy for medium powers.¹⁵ His belief that a medium power should create and keep under national control enough means of power to sustain coercive actions, which will preserve national interests, is based on the concept of credible missions. He sees this in the concept of *sea control*; consisting of *sea use* (essentially *sea assertion* and *power projection*) and *sea denial*. Also fundamental to the Hill thesis is the concept of *reach*, which is significant to Australia given the extent of our area of direct military interest.

Sea assertion makes it possible for a nation to control or use the sea, or parts of it, for its own purposes and makes it possible to project power ashore against an adversary. Typical sea assertion operations comprise amphibious operations (including such tasks as the evacuation of nationals and the restoration of law and order); naval presence missions (including response to regional requests for support and peacekeeping tasks); intelligence and surveillance (in forward areas); protection of shipping, offshore territories and resources; and mine countermeasures.

At the highest operational level, power projection includes strikes against land targets or lines of communication from the sea. Typical operations involve naval gunfire support, seaborne air strike, and interdiction of an adversary's sea lines of communication. To this extent, many sea assertion operations are

offensive in character, although they may be conducted for defensive objectives. Sea assertion strike missions are to be distinguished from sea denial ones in that the former are usually conducted at greater distance from bases than the latter, although they need not necessarily be in areas under control of the adversary.

Sea denial makes it possible for a nation to prevent an enemy (real or potential) from using the sea for that enemy's own purposes. Typical sea denial operations include sovereignty protection, maritime patrol and response, maritime strike, anti-submarine warfare, and the shadowing and marking of an adversary's units in a constrained rules of engagement situation. Such operations are essentially defensive in character.

Reach in the broadest sense is the distance from home bases at which operations can be carried out.¹⁶ The degree of reach is dependent on several factors, such as the level and type of operations, sustainability, and support available from alliance partners. Afloat support has a key role to play in this respect. Under-way replenishment has particular advantages in sustaining operations at long distances from shore-based logistical support.

No discussion of the evolution of maritime strategic thinking would be complete without some reference to the application of air power in the maritime environment. Since the advent of aircraft in the early part of this century, their influence on maritime operations has been fully recognised in maritime strategic thinking.¹⁷ The utility of aircraft for naval reconnaissance and surveillance was recognised immediately, but their significant impact on maritime operations through the strike role was not appreciated fully until World War II. Aircraft are now an essential element of maritime operations, but no contemporary writer of the maritime school has regarded them as anything other than an integral part of the concept of sea power.

Additionally, there is little in the customary air power texts about the application of air power at sea. The explanation seems simple - the primary concern throughout the historical evolution of air power theory has been with the independent application of air power, and that seems to make more sense as an adjunct to continental theories of strategy rather than maritime theories. Generally, air power theorists have eschewed the support role of air power in land/sea operations and have directed their attention more towards the strategic role of independent air power and the importance of air superiority, although even the latter has been primarily in the context of the land battle or for the air defence of land targets.

Maritime Power and Australia

Historical Perspective

Australia is one of the world's most isolated nations. Although dependent on the sea for international trade and as a natural defence barrier, as a nation it has never had a clear maritime defence strategy. Australia has not been a strong maritime or naval power.

Australians, at least in the twentieth century, have not thought of themselves as maritime people. Historically they have left their maritime industries, such as shipping and fishing, largely in the hands of foreigners. There were virtually no exports of fish and other seafood from Australia until the 1960s. Until 1986, the collective interests of Australian shipowners were served by the Australian Chamber of Shipping, an organisation dominated by foreign-owned companies.

Additionally, Australia placed heavy reliance on concepts of forward defence associated with the 'domino' theory, a belief that Australian security was best preserved by keeping the communist threat as far from Australia as possible.¹⁸ As far as the defence of Australia itself was concerned, this encompassed the protection potentially provided by major allies, initially Britain and more recently the United States. Australians had little concept of what would be required in the self-reliant defence of Australia and of how significant the maritime environment that surrounds it was to that defence.

More than once over the years Australia had started towards a maritime force posture and defence strategy. This was apparent in the moves immediately after federation to build a strong local navy and again in the years between the world wars, particularly the 1930s when, for better or worse, primary defence reliance was placed on Imperial sea power, to which the Australian fleet contributed.

A maritime defence strategy also appeared to be emerging in the early 1960s, prior to the Vietnam War, with the ordering of the Charles F. Adams - Guided Missile Destroyers (DDGs), Submarines, Mine Countermeasure (MCM) forces, new fleet air arm aircraft (Grumman Tracker and Douglas A-4D Skyhawk), and the commissioning of HMAS *Supply*, the RAN's first under-way replenishment ship, to provide afloat support to the fleet. These force structure developments were significant steps towards defence (or at least naval) self-reliance. However, with Australia's commitment to Vietnam, the realisation of an unambiguous maritime defence strategy was prevented by Australian involvement in major military operations overseas in co-operation with a powerful ally.

In retrospect, it would appear that defence strategies based on forward defence, and the associated expeditionary force mentality,¹⁹ militated against a more comprehensive appreciation of Australia's geo-strategic environment.

These attitudes led Australia to join with major allies in fighting wars as far afield as Korea and Vietnam - not to mention, in earlier times, Europe and the Middle East. Australians thought more about land operations in the jungles of Southeast Asia and Papua New Guinea, and more about maritime operations in co-operation with allied naval forces in distant oceans, than about the operations that could be required in the defence of Australia and Australian interests in the regional geo-strategic environment. In referring to that geo-strategic environment, two things stand out - firstly, the extent and importance of Australia's maritime interests, and secondly, the significance of the seas and oceans around Australia as natural barriers to any adversary.

Australia's Maritime Interests

Australia's maritime interests comprise interests in areas where an issue of Australian sovereignty is involved - maritime space, offshore territories and EEZ marine resources, both in and beneath the sea - and interests in activities that support the nation's security and economic well-being - seaborne trade, marine industries and assertion of transit rights.

Offshore Oil and Gas

There are significant strategic implications of Australia's increasing economic reliance on offshore oil and gas. Australia's current net self-sufficiency in crude oil supplies exceeds 90 per cent, but producing fields plus proven and probable reserves available for development may not be able to maintain this level in the face of increasing domestic demand and the decline of existing fields - particularly Bass Strait. Unless new discoveries are made, Australia's level of self-sufficiency could be down to about 65 per cent and Australia could then be importing a quarter of a million barrels of oil a day. This is equivalent to one large inbound tanker to Australia each day. The offshore continental shelf is regarded by industry and government geological experts as the area having the greatest potential for the future discovery of oil.²⁰ More than 70 per cent of Australia's undiscovered oil reserves are thought to be offshore.

The part of the continental shelf in the Timor Sea, including the territory of Ashmore and Cartier islands and adjacent waters, is emerging as a very important oil-producing area that will contribute significantly to Australia's oil self-sufficiency in the 1990s. The Jabiru field alone already contributes nine per cent of Australia's total oil production. Considerable exploration activity is likely in the Timor Sea area in the next few years, particularly in view of recent trends in world oil prices and the agreement reached with Indonesia on a Joint Development Zone in an area with good prospects where the seabed boundary between Australia and Indonesia was in dispute. Australia's dependence on the North-West Shelf and the Timor Sea will in the future be a major strategic

vulnerability for the nation and the security of the installations there would involve extensive maritime operations at any level of threat.

Shipping

Maritime commerce, both coastal and overseas, is a major national interest for Australia. By world standards, Australia rates highly as a shipping nation in terms of total tonnage of cargoes loaded and discharged. Australia's seaborne trade in recent years has represented nearly eight per cent by weight of total international seaborne trade, although the nation's overseas trade is equivalent to only about one per cent by value of total world trade. On a tonne-mile basis, Australia's share in world seaborne trade is even more impressive - about 13.5 per cent of the total.²¹ This is because of the long distances involved in shipping cargoes from and around Australia, and because almost all of the nation's seaborne exports (and much of the coastal trade) consists of heavy bulk ores, particularly iron ore, coal and bauxite. Crude petroleum and refined petroleum products make up about 40 per cent of total Australian seaborne imports in terms of tonnage.

The strategic importance of coastal shipping is often overlooked in Australia. Again liquid fuels are a primary concern. Coastal shipping is regarded by the transportation industry as the only practical mode of transport for moving almost 17 million tonnes of crude oil and petroleum products around Australia each year.²²

From a defence point of view, the resupply of fuel would be a dominant factor in planning military operations in northern Australia. Most of the fuel used in the north in peacetime is supplied by sea. This would be unlikely to change in time of conflict, when the situation could be exacerbated by a high level of military operational activity in the area, including use of very fuel-hungry aircraft such as F/A-18s and F-111s. Because of the economies of scale available from sea transport of liquid fuels, it seems inescapable that, in any defence contingency in the north, Australia would be required to run tankers into relevant northern Australian ports.

Other potential major vulnerabilities in coastal shipping are:

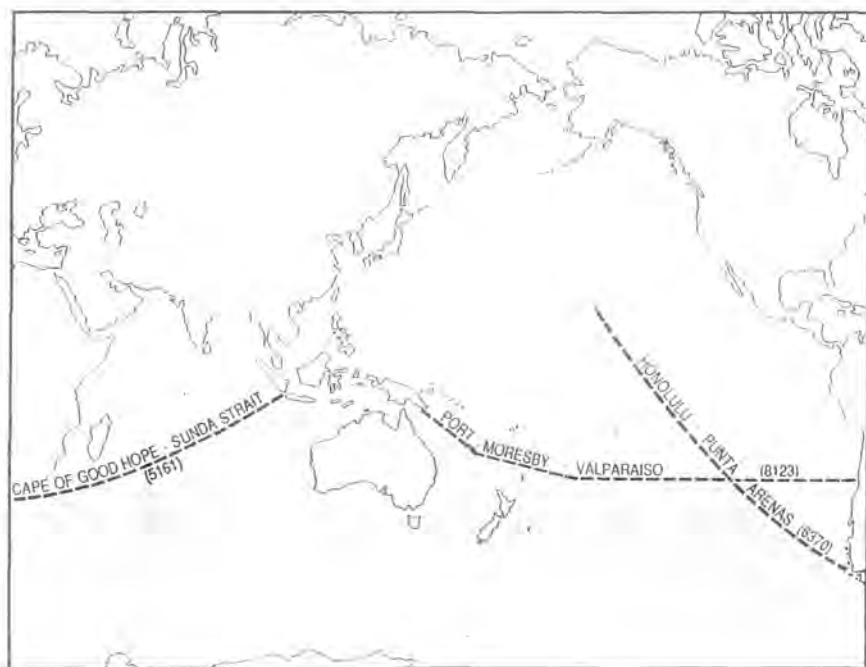
- the Weipa-Gladstone bauxite trade, which is of high economic importance through the 'value added' contribution of the alumina exports from Gladstone and domestic aluminium smelters; and
- coastal shipping in northern Australia to the small coastal settlements which are not linked to the outside world by developed roads (this also could be a significant military planning consideration with operations in the north).

Attacks on merchant shipping, both coastal and overseas, could be an attractive option to an adversary at lower levels of conflict. This would be less

demanding in resources than other forms of offensive action and would require a heavy commitment of Australian resources in providing for the protection of shipping. Experience from the Iran-Iraq tanker war, the Vietnam War and the 1971 Indo-Pakistani conflict suggest that an adversary is unlikely to be deterred from attacking ships bound to and from Australian ports simply because they are not flying the Australian flag.

An adversary preparing for higher levels of conflict against Australia would recognise the potential vulnerability of Australia to disruption of seaborne trade and plan accordingly. Overseas shipping bound for Australia is peculiarly vulnerable to interdiction because it either has to pass through the archipelago to Australia's north or can be recognised as heading for Australia while it is still some distance away. Figure 1 shows the so-called Sandison Line²³ which, once crossed by a ship, indicates that the ship can only be heading for Australia or New Zealand.

FIGURE 1
THE SANDISON LINE



Future Trends

Australia's maritime interests stand to grow significantly in importance in the years ahead. Resource pressures on land are now focussing increased attention on the largely untapped potential of the world's oceans. Technological advances in many fields are making feasible a whole host of activities, on and under the sea, previously thought impracticable. Consequently, nations are tending to become more aware of their offshore maritime interests.

For Australia, with one of the longest coastlines in the world and an Australian Exclusive Economic Zone (EEZ) that is the fourth largest in the world, the prospects are particularly exciting. Australia's marine industries are already worth over \$A16 billion annually and approximately \$A4.5 billion in gross export income. These figures have the potential to increase dramatically as Australia takes up the marine opportunities available to it.²⁴ This may involve some diversification away from the conventional marine industries (shipping, fishing, shipbuilding, offshore oil and gas) to include increased activity in new marine industries (marine tourism, coastal and offshore engineering, marine consultancies to regional countries and cultivation of marine resources).

Emergence of an Australian Maritime Strategy

Australia's current defence strategy was comprehensively defined in the policy information paper, *Defence of Australia 1987*. A more recent and unclassified discussion of aspects of the strategy can be found in the ministerial statement on *Australia's Regional Security* delivered in December 1989.²⁵

Key features of the Australian defence strategy are:

- Defence self-reliance set firmly within the framework of our alliances and regional associations.
- Defence in depth - meaning that priority is given to meeting credible levels of threat in Australia's area of direct military interest and that any adversary should be faced with a comprehensive array of military capabilities having both defensive and offensive components.
- A high priority for maritime (naval and air) forces capable of defeating an adversary as far forward as possible in the sea-air gap.
- Activities, including operations by the ADF, which promote regional security in concert with Australia's neighbours and prevent threats from arising.

Australian defence planning now fully comprehends the significance of the nation's wide maritime approaches to the security of Australia and that, in many ways, Australia is now pursuing a maritime strategy for the defence of its national interests. It is now government policy that Australia should work

actively with other regional countries to promote regional security. There are clear maritime implications of this policy.

A maritime defence force posture is emerging in Australia today. This is apparent from capital equipment projects in the pipeline (primarily the Anzac frigates and Collins-class submarines), from the provision of maritime strike capabilities for Royal Australian Air Force (RAAF) aircraft (F/A-18 Hornet, Orion P-3C and the F-111), the two-ocean naval basing policy and the development of HMAS *Stirling*, and the acquisition of over-the-horizon radar (OTHR) as the core of the nation's maritime surveillance system.

It is also apparent in the ministerial statement on *Australia's Regional Security*, which identifies maritime patrol and response forces as being essential 'to intercept hostile forces forward of Australia, to protect offshore territories and interests, and to allow Australia to influence the type, level and location of hostilities'.²⁶ In other words, Australia's security policy recognises that Australia must be able to establish control of the sea in areas where Australia's interests are at stake.

The ministerial statement also presents a regional security policy for Australia involving comprehensive engagement with Southeast Asia and a constructive commitment in the South Pacific.²⁷ Marine issues such as offshore resources, shipping, fishing rights, law of the sea, maritime boundaries, surveillance, piracy and refugees will loom large in how this policy is implemented. These issues have a significant impact on how regional countries conduct their foreign relations, both between themselves and with countries outside the region. Increasingly, also, these issues (as, for example, with overlapping maritime boundaries and competing claims over islands such as the Spratlys in the South China Sea) have the potential for generating conflict between regional nations. In implementing the Australian policy response, the maritime capabilities of the ADF will have a major role to play. These capabilities include not only the ships, submarines and the expertise of members of the RAN but also the maritime surveillance (P-3C) and strike (F-111 and F/A-18) aircraft of the RAAF.

Australian Maritime Operations

Concurrently with the acquisition of these capabilities, the ADF has moved towards identifying its roles, supported by operational concepts that recognise the key features of Australia's strategic environment and any contingencies that may arise there. These include:

- intelligence collection and evaluation,
- maritime surveillance,
- maritime patrol and response,
- protection of shipping, offshore territories and resources,

- strategic strike,
- operations in support of land forces, and
- peacetime activities.²⁸

Intelligence Collection and Evaluation

Sound and timely intelligence is essential in providing political decision-makers and military commanders with early warning of activities inimical to Australia. It is the first layer of Australia's strategy of defence in depth.

Intelligence collection is usually seen as a sea assertion mission, in that it requires Australia's ability to use the sea for our own purposes. The possible areas of operations extend beyond the area of direct military interest.

Although the collection of intelligence is conducted by a variety of means, maritime forces have a vital part to play in both the collection and evaluation of intelligence. The inherent mobility and geographical spread of their operations give maritime assets (ships, submarines and aircraft) ample opportunities to observe and enhance knowledge of the regional environment. When strategic circumstances dictate, surface ships and submarines provide flexibility by their inherent ability to sustain intelligence collection operations for considerable lengths of time at long distances from base. Submarines have the added advantage of being able to gather intelligence covertly and have an important part to play in this respect at higher levels of conflict.²⁹

The role played by maritime forces in gaining detailed knowledge of Australia's maritime environment, especially in the maritime approaches to the north and north-west, is also very important. The collection, management and dissemination of data concerning Australia's maritime environment (hydrography, oceanography and meteorology) are important for many aspects of Australia's security including maritime operations, environmental security and navigational safety of shipping, while also contributing to the ability to exploit commercial opportunities. Comprehensive oceanographic knowledge is essential for submarine operations, anti-submarine warfare, mining and mine countermeasures, but the problem with acquiring such knowledge is compounded because oceanographic conditions vary so much from one area to another. This is particularly so in Australia's case, with wide differences between the colder, deep, acoustically quiet southern waters and the warmer, shallower, acoustically noisy waters of the north.

Maritime Surveillance

The ability to detect, identify and, if necessary, respond to sea and air activity in Australia's sovereign sea and air space is vital to the protection of national interests. The surveillance of the northern and north-western maritime approaches is important for the early detection of any adversary's activities and

the vast expanses of these approaches make the task of maritime surveillance a formidable one. Even with the OTHR network, ships and aircraft are still required for more detailed surveillance, especially in maritime focal areas, and surface ships, embarked helicopters, submarines and fixed-wing aircraft all have an important part to play in this three-dimensional environment. Furthermore, a distinction has to be made between wide-area surveillance of the broad maritime approaches and the more concentrated, detailed surveillance of particular areas of maritime interest, including shipping focal areas and the seaward approaches to vital assets.

Maritime Patrol and Response

The ADF must be able to conduct maritime operations to prevent an adversary from substantial use or exploitation of Australia's maritime approaches (sea denial). The unpredictable and possibly deceptive nature of operations by an adversary demands a flexible, well-balanced mix of aircraft, surface ships and submarines able to locate, identify, track and, if necessary, engage targets. The nature of these operations is such that they may be required over an extended period against a wide cross-section of threats (surface, sub-surface and air). Submarines would normally be tasked with patrol operations in focal areas, including exit points from the archipelago, under control of an adversary. Their torpedoes and missiles provide a tactical response capability. P-3C, F-111 and F/A-18 aircraft also can be used in maritime response operations.

While aircraft can patrol larger areas than can surface ships and submarines, naval forces are essential for many response activities, including boarding operations. They have the added advantages of being able to remain on station for extended periods (further extended if afloat support is available) and observe potentially hostile forces without provoking a hostile response. Larger surface ships possess a multi-role capability that allows them to conduct anti-air warfare (AAW), anti-surface warfare (ASUW), and anti-submarine warfare (ASW), if not always simultaneously then at least without having to be withdrawn from the area of operations to re-configure weapons systems.

An AAW capability not only contributes to the self-defence of the platform to which it is fitted but also provides defence to other platforms within its immediate area - the concept of *area defence* - and a limited interdiction capability of hostile air targets passing within range of its systems, while also providing targeting and command and control back-up to friendly aircraft. An ASUW capability enhances the ability to interdict hostile surface vessels and serves as a demonstration of an intent to protect essential maritime infrastructure and shipping against surface threats. Finally, an ASW capability allows the surface combatant to operate in the proximity of potentially hostile submarines and, if necessary, apply sufficient pressure to force them to the surface for identification. Both fixed-wing and rotary-wing aircraft contribute

significantly to ASW, especially in their ability to broaden the area of surveillance. Friendly submarines are also an important asset in ASW operations. Ideally, forces should operate together to enhance mutual defence capabilities.

Even in low-level conflict, aggressive patrolling by Australian forces in the maritime approaches would be central to the national ability to influence the type, level and location of hostilities and to keep the forces of an adversary away from Australian territory. The ability to deny an adversary operational freedom near Australian territory would be a major constraint on the level and type of conflict initiated against Australia and make the land defence of Australia's northern areas more manageable. The intensity and posture of operations conducted by Australia in the maritime approaches would contribute significantly to Australia's ability to manipulate the centre of gravity of conflict.³⁰

Protection of Shipping, Offshore Territories and Resources

The protection of shipping, offshore territories and resources is potentially the most demanding task facing the ADF and could require the sustained deployment of forces over extended distances. Although the interdiction of Australian shipping could largely be confined to several maritime focal areas, the economic costs in re-routing shipping would be substantial. Interference with or interdiction of shipping in coastal waters and in the vicinity of Australian ports (all susceptible to mining), especially in the north, would impact on the sustainability of ADF operations in that theatre. Mechanisms for effective mine countermeasures, the protection and control of shipping and the ability to deploy appropriate protective forces at short notice are essential in this environment.

The protection of maritime commerce for a medium power like Australia, with the vast ocean expanses that surround it, must by necessity dictate a strategy involving the protection of ships and not the protection of sea lines of communication. This is done by adopting a *moving zone of sea control*, which can change on a day-by-day and even hour-by-hour basis. While not all shipping would require protective measures, there would always be some ships that would require close escort. For overseas shipping, this could include ships with strategically important cargoes such as petroleum products, military equipment and plant.

Protection of shipping also involves naval control of shipping measures such as safe routing, and a combination of maritime assets in maintaining sea and air control of particular focal areas for specific periods (sea assertion). This control is achieved by escorting high-value targets through areas of potential vulnerability, conducting mine countermeasures operations as appropriate and, if required, by intercepting and shadowing an adversary's air.

surface and sub-surface units. Strategic circumstances permitting, the required control can be achieved by offensive measures to neutralise hostile capabilities, including strike against the adversary's bases.

Some of the above procedures are also applicable to the protection of Australia's offshore territories and resources. Many of these are located in areas remote from military bases and the nation's industrial and logistic support centres. While recognising the advantages of air assets (essentially speed of response), they do have some strategic limitations imposed by the resources required to lift large amounts of stores, the availability of suitable airfields, and the question of fuel stocks and resupply. Support of air operations from Cocos and Christmas islands would depend on Australia's ability to resupply with fuel, and this in turn would depend on Australia's capabilities for sea assertion.

Strategic Strike

Notwithstanding the political constraints at the lower end of the conflict spectrum, the government must have the option to strike at an adversary's bases and communications to control conflict escalation and encourage negotiations. The ADF's submarine force lends itself particularly well to this role. Submarines can exploit fully the capacity to conduct operations covertly, interdict shipping and otherwise attack an adversary within range of hostile shore-based weapons and aircraft. They also can land special forces and conduct covert mine laying. Air assets also contribute to strategic strike in the maritime environment through their ability to interdict surface shipping and to lay mines. Yet, as would be the case in using surface ships for such a task, the use of aircraft is fundamentally an overt action and stands a greater risk of detection. This imposes consequent resource-intensive requirements in providing for the protection of the strike platform.

Support of Land Forces

The ADF's capability to conduct many operations across northern Australia and to respond to regional requests may well require the transport of personnel and stores by sea. While all naval units can contribute to these operations by transporting equipment, stores and personnel, the RAN's heavy landing ships and heavy landing craft provide a specialist capability by their ability to discharge cargo and personnel across a beach or through non-operational ports by beaching or the use of small vessels. Naval helicopters also contribute to these operations.

Peacetime Activities

Australia's military capability has the capacity to contribute to a positive security environment through the exercise of what might be described as military diplomacy, or a politico-military capability. Although the fundamental

role of maritime forces is the war-fighting one of national defence in times of conflict, there are also important peacetime roles to consider. Maritime forces may have their main utility in times of peace in pursuing the politico-military objectives of government, in contributing to a stable maritime regime and in enforcing maritime domestic and international law. These are sometimes referred to as the diplomatic and constabulary roles of navies.

Maritime forces by their nature offer flexible and manoeuvrable instruments to achieve politico-military objectives. Operating in a medium that is, in times of peace, more free of restrictions than the continental environment, they are ambiguous in their intent and tend to raise fewer complications and cause less friction to local sensitivities than other military capabilities. Surface ships in particular, by their conspicuous nature and their inherent capacity for remaining on station for some time in one area, are well suited physically as well as jurisdictionally to carrying out the function of naval presence.

- **Regional Security.** Some regional maritime issues impact on national security. If Australia is to have a regional voice on these issues, it will be important that it is recognised in the region as a maritime power. The maritime capabilities of the ADF play an important role in implementing the Australian policy response to such issues. Personnel exchanges between maritime units, dialogue such as that sponsored by the RAN's Maritime Studies Program, training conferences and exchange of technical information all build confidence among regional players and defuse potential for conflict in this largely maritime environment. RAAF P-3C surveillance flights over the South China Sea and Bay of Bengal; rotational deployments of RAN units to Southeast Asian waters; and ADF assistance with the maritime surveillance arrangements of South Pacific nations (such as the Pacific Patrol Boat program, surveillance flights and naval ship visits) are already contributing to a favourable strategic environment.
- **United Nations Peacekeeping Tasks.** The recent conflict in the Persian Gulf demonstrated that international events can develop with little warning. Those that involve Australian interests will entail a maritime response. The ready deployment of the RAN task group (two escorts and a supply ship) to the Persian Gulf exemplified the flexibility and effectiveness of naval forces. This was not only in their ready and timely deployment, but also because the extent of their commitment could be easily controlled and used in a graduated way to demonstrate the intention to support national interests with military power should the need arise. The Gulf crisis also proved that collective security under the guise of the United Nations is workable and has led to proposals that the UN should develop a more permanent standing naval force whose main roles would be peace enforcement, maritime policing and humanitarian aid.³¹
- **Policing Role.** As noted by several contemporary strategic writers, the constabulary roles of maritime forces will grow steadily in importance in

the future as nations become more concerned over their access to and control over offshore resources, the uses of the sea become more diverse and the regulatory controls more complex.³² The law of the sea is a fundamental consideration, yet many of its regimes and rights remain ambiguous and open to dispute. The issues involved are particularly important in the regions around Australia, where countries attach great importance to their sovereign rights in littoral waters and there are relatively few areas of high sea.

The maritime forces of the ADF already have a central role to play in surveillance of Australia's offshore areas. The response capabilities of RAN patrol boats are particularly vital in this regard.

Other peacetime activities such as civil disaster relief, drug surveillance, counter-terrorism operations, the protection or rescue of Australian nationals abroad and assisting legitimate governments in maintaining internal security³³ are also considerations. The requirement for these activities could arise with little warning.

Conclusion

Australia is a maritime nation that shares no land borders. The waters that surround the continent of Australia have always been important in maintaining the nation's sovereignty and its economic well-being. Increasingly, the resources of those waters are becoming vital national interests.

Australia's broader area of strategic interest is distinctly maritime in nature. Maritime issues play an important part in regional relations. For most regional countries the sea is both a major source of food and wealth and a conduit for commercial relations.

Fundamental to the protection and security of an isolated island nation, such as Australia, is a sound maritime strategy. This must be a strategy that maximises the use of scarce resources to assert Australia's sovereign claims, protect vital maritime interests, deny the use of maritime approaches by an adversary, and actively promote a stable strategic environment.

Sound intelligence collection and evaluation, along with maritime surveillance capabilities, are essential prerequisites for implementing such a strategy. These capabilities provide the early warning that allows further mobilisation of national resources when required. Also, because military pressure at the lower end of the conflict spectrum can be quick in inception, Australia must have sufficient capability to actively patrol her maritime approaches and, if necessary, use force to assert her own sovereign rights or at least deny an aggressor the use of those waters. The enormous size of Australia's maritime surrounds and the paucity of land-based infrastructure (especially in the north and north-west) make reach a vital

characteristic of the sea assertion maritime capabilities required to protect Australia's shipping and more distant off-shore interests.

Australia's maritime assets (ships, submarines, aircraft and personnel) provide the foundation for the nation's capacity to contribute to a positive security environment through the exercise of military diplomacy or a politico-military capability.

The balance of maritime air, high- and low-capability surface units, submarines and afloat support provides Australian policy-makers with appropriate options for national security without being an onerous burden on national resources. As recognised by John Curtin in 1941,³⁴ the predominant role of land forces in the defence of Australia's interests is only important if the nation's maritime strategy has failed.

Notes

- 1 Department of Defence, *The Defence of Australia 1987* (Australian Government Publishing Service, Canberra, 1987), para. 1.11 describes this as an area stretching over 7000 km from the Cocos Islands to New Zealand and the islands of the Southwest Pacific, and over 5000 km from the archipelago and island chain in the north (Indonesia and Papua New Guinea) to the Southern Ocean.
- 2 *ibid.*, para. 2.63.
- 3 *ibid.*, para. 4.45.
- 4 Archer Jones, *The Art of War in the Western World* (University of Illinois Press, Urbana and Chicago, 1987 and Harrap, London, 1988), pp.87-88 gives a good description of how the Greeks through a decisive fleet battle halted the Persian advance and deprived the Persian army of secure maritime communications.
- 5 Thucydides, *History of the Peloponnesian War*, cited in Geoffrey Till, *Maritime Strategy and the Nuclear Age* (Macmillan, London, 1982), p.19.
- 6 *ibid.*, pp.20-21.
- 7 The group included the American Admiral Alfred Thayer Mahan (1840-1914); and Britain's Vice Admiral Phillip Colomb (1832-1899), Sir Julian Corbett (1854-1922) and Sir Herbert Richmond (1873-1946).
- 8 A.T. Mahan, *The Influence of Seapower upon History* (American Century Series edition, New York, 1957), pp.22-77.
- 9 Till, *Maritime Strategy and the Nuclear Age*, p.29.
- 10 P.H. Colomb, *Naval Warfare: Its Ruling Principles and Practice Historically Treated* (W.H. Allen, London, 1895).
- 11 Sir Julian Corbett, *Some Principles of Maritime Strategy* (Longmans Green, London, 1911).
- 12 S.G. Gorshkov, *The Sea Power of the State* (Pergamon Press, Oxford and Naval Institute Press, Annapolis, 1979), p.221.
- 13 K. Booth, *Navies and Foreign Policy* (Croom Helm, London, 1977).
- 14 Till, *Maritime Strategy and the Nuclear Age*, p.15.
- 15 J.R. Hill, *Maritime Strategy for Medium Powers* (Croom Helm, London, 1985).
- 16 J.R. Hill, 'Maritime Forces for Medium Powers', *Naval Forces*, Vol.5, No.2, 1984, p.29.
- 17 VADM Sir Arthur Hezlet, *Aircraft and Sea Power* (P. Davies, London, 1970) gives a good historical overview on this topic.
- 18 T.B. Millar, *Australia in Peace and War* (Australian National University Press, Canberra, 1978), p.200.
- 19 J. Grey, *A Military History of Australia* (Cambridge University Press, Cambridge and Melbourne, 1990), p.44.
- 20 'The Outlook for Crude Oil Supply and Demand in Australia and its

- Energy Policy Implications', Association of Mining and Exploration Companies (AMEC) Working Party Report, August 1991, p.23.
- 21 World seaborne trade in 1985-86 was 3385 million tonnes gross weight, of which Australia's share was 7.7 per cent, or 260 million tonnes gross. On a tonne-mile basis, the world seaborne trade was 12765 billion tonne-miles with Australia's share being 13.6 per cent or 1870 billion tonne-miles. UNCTAD *Review of Maritime Transport* (United Nations, New York, 1986) as quoted in D. Smith, 'Australian Shipping in Context', *Journal of the Australian Naval Institute*, Vol.16, No.3, October 1990, p.37.
- 22 Directorate of Naval Force Development, Department of Defence (Navy Office), *The Role and Importance of Coastal Shipping in Australia: A Defence Perspective* (Department of Defence, Canberra, 1986).
- 23 J.M. Sandison, 'Unambiguous Explanation of the Unambiguous Zone', *Pacific Defence Reporter*, April 1986, p.4.
- 24 Department of Industry, Technology and Commerce, *Oceans of Wealth?*, Report by the Review Committee on Marine Industries, Science and Technology (Australian Government Publishing Service, Canberra, 1989), p.3.
- 25 *Australia's Regional Security*, Ministerial Statement by Senator the Hon. Gareth Evans QC, Minister for Foreign Affairs and Trade, December 1989 (Department of Foreign Affairs and Trade, Canberra, 1989).
- 26 *ibid.*, p.16.
- 27 *ibid.*
- 28 These all received brief coverage in Department of Defence, *Force Structure Review*, Report to the Minister for Defence, May 1991 (Australian Government Publishing Service, Canberra, 1991), pp.1-2.
- 29 VADM Sir Peter Gretton, *Maritime Strategy: A Study of British Defence Problems* (Cassell, London, 1965), p.107.
- 30 J.C. Wylie, *Military Strategy: A General Theory of Power Control* (Rutgers University Press, New Brunswick, 1967), p.91.
- 31 M. Pugh, 'Multinational Maritime Peacekeeping: Scope for Deep Blue Berets?' paper delivered to the Asian Peace Research Association Conference, 'Peace and Security in the Asia-Pacific Region', Christchurch, 1992.
- 32 E. Grove, *The Future of Sea Power* (Routledge, London, 1990), p.187 provides a good example, although the matter has been dealt with by Booth, Till, Hill and others in recent times.
- 33 *Australia's Regional Security*, pp.18-21.
- 34 See R.J. Sherwood, 'John Curtin and a Maritime Strategy Circa 1941', *Journal of the Australian Naval Institute*, Vol.18, No.1, February 1992, pp.35-44.

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