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THE MARITIME ENVIRONMENT

- Australia is an island continent in a maritime region.
- Australia's area of strategic interest is vast.
- Australia and the nations of the region are dependent on the sea for transport; they draw heavily on the maritime environment for living and mineral resources.
- Maritime forces possess significant access and influence in our region.
- Australia requires maritime forces capable of meeting the challenges of our strategic geography.

THE PHYSICAL ENVIRONMENT

The importance of the maritime environment is both a worldwide reality and one with particular significance for Australia. 70 per cent of the surface of the Earth is covered by sea and this means that maritime power is frequently the most efficient means of applying force in a conflict. The areas in which maritime forces can operate range from the open oceans, or what is known as *blue water*, over the continental shelves, archipelagos and coasts in *green water* and into inshore areas and estuaries in *brown water* conditions. The physical differences between these circumstances can pose very different challenges for naval forces, particularly in the *littoral*. This is defined as those areas on land which are subject to influence by units operating at or from the sea, and those areas at sea subject to influence by forces operating on or from the land. Platforms, systems and operating procedures that are configured for one condition may not be well suited for another.

Nevertheless, operational flexibility can be built into maritime forces and developed through training and doctrine. In general, larger platforms with primacy in blue waters can be adapted to be very effective in green and brown water conditions and thus within the littoral, but smaller units lack the sea keeping capabilities necessary to deal with the swell and sea states experienced in deep water, as well as the endurance to cope with oceanic distances. This is particularly important for Australia. In the Australian context, the relationship between the environment and maritime security is very



Naval forces conduct surveillance and enforcement operations in concert with several civil agencies. Among the most important is Coastwatch, which operates a number of patrol aircraft such as the DASH-8

complex. The area of direct interest to Australia's security encompasses a substantial percentage of the Earth's surface. Australia adjoins the Pacific Ocean in the east, the Indian Ocean in the west, the South East Asian archipelago in the north and—sometimes forgotten—the Southern Ocean. Our maritime 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. Within a few weeks, major units may transit from the tropical calm and heat of the dry season in the South East Asian archipelago to the huge seas and swells of the Southern Ocean.



Australia is a maritime nation in a maritime region

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 movement of shipping through maritime 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 the fact that, for most of this country's northern coastal regions, as well as many parts of the archipelago to the north and the islands of the South West Pacific, the sea represents either the *only* means of access at all, or the *only* way 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, not only through better navigational techniques, but by improved environmental understanding and sensors and data exchange systems which allow seaborne units to 'look' inshore from the coastline over terrain to detect possible threats.

Although wide area surveillance systems are available to the great powers and increasingly to 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 shrewd exploitation of weather and oceanography, the problem for an adversary can be complicated still further.

SOCIAL

Approximately 70 per cent 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 per cent 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 coast and enjoying 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 and away the most cost-effective means for the movement of international trade, both by value and weight. In Australia's case, more than 70 per cent of our exports and imports go by sea in terms of value and well over 95 per cent 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 nation'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.

The total value of Australian merchandise exports in 1998-99 was AUD\$86 Billion, and the total value of Australian merchandise imports was AUD\$97.6 Billion. Australian domestic coastal shipping cargo alone totalled 52.5 million tonnes. By comparison, scheduled international airline traffic carried a total of 630,000 tonnes of freight to and from Australia by air routes over the sea.

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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 the movement of goods and people.

Conditions in Australia's vast Exclusive Economic Zone range from the Antarctic to the tropics



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. 81 per cent of that catch was exported, mainly to Asian markets.¹

ECOLOGY

The increasing exploitation of marine resources makes preservation of the marine ecology a vital issue for all nations in the region. Australia possesses a number of unique elements of the world's marine environment, including the Great Barrier Reef. The prevention of marine pollution is one fundamental requirement for their preservation, as well as for the maintenance of much of our tourist industry and for the quality of life of Australians generally. In addition, the management and conservation of living resources are important not only for Australia's domestic fisheries but also for the long-term preservation of a healthy ecology.

LAW AND INTERNATIONAL LAW

Australia's combat forces operate in accordance with both international and domestic laws which set out the rights and obligations of the ADF and govern the 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 *1982 United Nations Convention on the Law of the Sea (LOSC)*.

Historically, maritime forces have been prohibited from conducting operations within the *territorial sea* 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

¹ *2000 Year Book Australia*, Australian Bureau of Statistics, Canberra, 2000, pp. 464-468.

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 neutral coastal states involved. Thus, while the *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 apply 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 as migrating fish stocks on the high seas, it is too early to be certain how such regimes will operate effectively.

