# SEA POWER IN THE TWENTY FIRST CENTURY

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**by**

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First of all I would like to thank Admiral Oxenbould and the Australian Naval Institute, of which I am proud to be a member, for giving me the signal honour of inviting me to give this annual speech. I chose the term "sea power" deliberately. It is nowadays usual to emphasise, with Corbett, the significance of maritime power rather than sea power. This reflects the fundamental fact that people live on shore rather than at sea and that, therefore, seapower must make an impact ashore if it is to mean much. All this is true but, apart from sounding better, sea power is more specific, especially for a *Naval* institute. By seapower I mean the power one obtains from a capacity to use the sea for commercial and military purposes. This means the passage of shipping. Of course shipping — in its widest sense — may be used to support operations ashore or to carry out independent operations against the shore. As well as usually providing logistical support for land and land-based air operations, sea based assets can land troops from the sea and bombard targets at variable ranges with guns, aircraft and missiles both ballistic and cruise. This "power projection" capability has greatly increased in the last three quarters of a century or so, and in the post-Cold War world has become the major role for the greatest of the world's major navies. In an era of "battlespace dominance" of the surface, subsurface, air, land and space environments (not forgetting the electromagnetic spectrum) never has it been more true that sea power is but a form of air power, and land power too. But the unifying element in what I shall be talking about and what I hope the ANI is primarily interested in is the sea and what I think the future holds for sea based forces.

It seems unlikely that the sea will lose its so far unchanging characteristics in the next century. Seventy percent of the world's surface remains covered by the sea and, if the prophets of global warming are correct, this proportion may increase marginally over time. Water will remain inherently the most efficient means for transport of large and bulky items. A dramatic indication of this greater efficiency is that it costs the same to transport a tonne of coal from Australia to the UK as it does to transport it 100 kilometres from the port to the power station inland. Moreover, the sea gives great access. Seventy percent of the world's population lives within 175 kilometres or so of the sea; thus the centres of world population and power are within easy range. Indeed the range of sea-based systems is now such — thanks to the sea's utility as a mobile basing medium for such large and bulky items as ballistic missiles — that sea power can co-opt the ubiquity of air power to give it almost unlimited access.

Unlike air power, however, a much greater proportion of the free access provided by sea power is legal and exercisable in all conditions of political relations. Despite attacks by the more recent supporters of *mare clausum*, assaults spurred on by the new technologies of economic exploitation of both the sea and the ocean floor, the rights of maritime forces and merchant shipping to traverse "on their lawful occasions" not just high seas but exclusive economic zones remain very considerable. They are enshrined in the UN Convention on the Law of the Sea that has just come into force. I think these rights will remain. Although much of the impulse that has seen naval forces grow in recent years has come from the need to assert rights and undertake duties in variously enclosed areas of sea, that very growth of naval forces has given more states than ever an interest in maritime rights of passage. Moreover, the key importance of seaborne trade to the growth of the fastest-growing economies in the world — those of the Asia-Pacific region — gives new force to the maintenance of rights of free passage on Mahan's "great common" Not for nothing has Commodore Bateman spoken of Mahan being alive and well and living in the Asia-Pacific.

In some ways he is, but there are important differences caused by the very different structure of the current politico-international system compared with that with which Mahan was familiar. Although 'realism', the view of states acting as billiard ball-like independent actors in a context dominated by military relationships, is far from superseded as a paradigm of the international system, it exists side by side with 'complex interdependence', the analysis of international politics that emphasises those international and

transitional connections that increasingly exist at all levels between states and the nationals of states. No aspect of human activity demonstrates 'complex interdependence' better than the shipping industry, where ships owned in one state can be managed by a company registered in a second, fly the flag of a third, be officered by the nationals of a fourth and fifth, be crewed by those of a sixth and seventh, carry the cargo of an eighth and ninth and, finally, be insured in a tenth.. Such a situation does much to undermine the traditional mercantilistic notions of the nation identity of the elements of sea power enunciated by Mahan. It can certainly create problems at the interface of merchant shipping with military navies and when merchant shipping has to be used for military purposes.

These problems, however, will probably not seriously undermine the traditional attributes of sea power in a military sense. Sea power provides great mobility, the ability to move over two thirds of the world's surface at a rate of four hundred miles per day. This mobility is combined with — indeed forms a key component of — considerable stealth. The oceans are so huge that even the largest ships can lose themselves in their wide open spaces. Modern techniques of surveillance — satellites in particular — have gone some distance in undermining the stealthiness of surface ships, but it is likely to remain inherently difficult for a satellite to be able to get a real time fix on where a particular surface ship actually is rather than where it was some greater or lesser period before. Satellites can have their most effective sensors — electronic intelligence receivers — defeated by emission control regimes and operational decoy techniques. And when the vessel dives beneath the sea the problems of finding it become greater still. The evidence of the last decade and a half or so seems to demonstrate the inherent ability of the submarine to defeat by increased quietness the ability of long range sensors to "make the seas transparent". The ability of water to defeat virtually all forms of electromagnetic radiation is a fundamental law of physics and the maritime environment is such a complex one that it will always be difficult to be certain about the presence of submarines from the detection and analysis of surface data such as wakes or 'humps'. When one side to this is diminished willingness to spend scarce resources on submarine detection in the post-cold war world, it becomes even more difficult to imagine circumstances where an ability to deploy stealthily or base forces at or beneath the sea will cease to be advantageous.

This is especially so as sea based forces are so versatile. They are inherently flexible and adaptable in a wide variety of roles. Moreover they provide sustained reach, the capacity to deploy at a distance with their own integral logistic support. This leads to an attribute of sea power which is especially important today and likely to remain so in the future, the ability to 'poise'. The ability of a naval task force to remain on station for long periods either openly or covertly can keep options open for a government that has difficulty making up its mind. I sometimes call this the "John Major factor" but all politicians are likely to be grateful for forces that can be used to maintain the maximum number of open options in circumstances of unprecedented fluidity and uncertainty, conditions which may last for some little time, perhaps well into the next century.

It all adds up to disproportionate leverage for sea power, a leverage that is likely to continue. It has been fashionable to see the twentieth century as a period when Sir Halford Mackinder's land power came to become more important then Mahan's sea power, an era dominated by continentally based states. Nevertheless, as my colleague Professor Colin Grey has shown, even in this period of continental advantage sea power allowed nations and coalitions who possessed it decisive superiority in strategic agility and mobility and an ability to put together coalitions of superior total strength to the dominant continental power. In the next century, an era when maritime communications may well be of greater importance once more, this "leverage of sea power" may be more enhanced still.

The next century is beginning with a period of great uncertainty. There is no clear threat but considerable global disorder. Instant worldwide communications and the political pressures they foster lead to a propensity to intervene, often at some distance from one's own shores, if for no other reasons than to evacuate one's own and friend's nationals caught up in the conflict. What is unknown and unknowable is where that intervention will take place and when. These are conditions where forces require the maximum degree of flexibility, adaptability and deployability. Given the attributes just explored it can be seen that these are conditions tailor made for sea power and navies. Nevertheless navies alone usually cannot operate ashore or even in the air in the required strength. The challenge for nations is going to be to develop an overall joint defence posture based around an ability to project power from the home base capable of sustained operations at a distance: In other words an expeditionary capability.

The use of the term "expeditionary" is important. "Maritime" might be a more descriptive term, as the sea must be the key component in any ability to deploy power at a distance. But "maritime" has tended to be adopted as a synonym for "Naval". "Expeditionary" may be a truly joint term that can conquer traditional service prejudices. What one is looking for is not aggrandisement for the navies of the world but the creation of the most appropriate overall defence posture for the new world disorder. Each posture, however, would have to rely on the attributes of

seapower to gain its effectiveness.

Technological developments are working in the direction of enhancing expeditionary capability. Aircraft are becoming more suitable for operating from relatively simple seaborne platforms. There can be little doubt that conventional catapults and arrester gear combined with conventional take-off and landing (CTOL) aircraft will always provide the most capable sea based air forces (and the USA will continue to deploy large aircraft carriers for the next half century). But the adoption of newer techniques STOBAR (short takeoff but arrested landing, made possible by high thrust to weight ratios and fly-by-wire and pioneered by the Russians on the *Admiral Kuznetsov* ) and the more widely used STOVL (short takeoff and vertical landing) proven by the United Kingdom and adopted by other countries make possible cheaper options of increasing relative effectiveness. It is worth considering at length the implications of the fact that the planned replacement for the F-18 is also the planned replacement for the Sea Harrier. This will probably be a modular design in which a price in performance will probably have to be paid for a STOVL variant compared to the more conventional version that will also be produced, but even Air Forces might begin to see the advantages of sea basing — and therefore STOVL — as a useful option adding greater flexibility to their deployment options. The possibility will therefore exist for more unified sea based/land based air forces, although care will have to be taken to ensure that the pitfalls of the past are avoided. Navies will still need their own 'organic' air assets to operate effectively, especially helicopters, but STOVL fixed wing too.

Another air technology that will add to sea power is tilt rotor. The ability of such VTOL aircraft to operate at greater distances and speed compared to helicopters could greatly enhance the value of sea based air platforms, especially — but not exclusively — in forcible entry amphibious operations or evacuations.

Missile technology in its various forms is also enhancing the impact of other sea based components of 'air power'. At the most cataclysmic end sea based ballistic missiles are just as accurate and discriminating as any land based missile. This allows them to cover all the nuclear options required by a nuclear power. It also sets them at one end of a more unified spectrum of naval power projection capabilities, rather than confirming them as a highly specialised force of 'boomers'. The conventionally armed sea launched cruise missile can cover a large range of precise targets, including those defended to a point where attack by all but the most stealthy aircraft is inadvisable (such as downtown Baghdad in the Gulf War). Their ability to hold directly at risk what a potential third world aggressor might value — such as his own life — has greatly enhanced the concept of 'conventional deterrence'. Shorter ranged tactical missiles with advanced sub-munition warheads, such as the American ATACMS can also be adapted for sea launch from either surface or subsurface platforms. This will reduce, but not replace, reliance on ship-based artillery. In the defensive mode any twenty-first century naval area air defence system worthy of the name will have some anti-ballistic missile potential, at least against the more primitive forms of device likely to be used by potential rogue missile operators This will give an important new dimension to the role of surface combatants.

This brings us to the increasing importance of space in thinking about warfare at and from the sea. Space platforms play an increasing role in surveillance, navigation, missile guidance and communication. An ability to use space and/or deny its use to an opponent thus becomes an ever more vital part of sea power. It is true that the new century will begin with potential enemies of the major sea powers not very capable (if capable at all) in space — a factor that will allow certain liberties to be taken with submarines, for example — but this cannot be taken for granted for ever. Consideration is going to have to be given to the security of space assets, and holding at risk or destroying potentially hostile space platforms either in orbit or at source. This will be an area of American pre-eminence — another good reason to maintain good relations with the US Navy — but it is a factor that many navies will have to bear in mind. Satellites provide the keys to most modern forms of $C^5I^2$ as we must now call it — Command, Control, Communications, Computers, Consultation, Intelligence, Information. The revolution in this area has perhaps been the most important of all the revolutions in naval warfare this century. The advent of the operations room (CIC to Americans) as the nerve centre where electronic inputs are synthesised in order to fight the ship is the most obvious dimension of this revolution. We are close to the fiftieth anniversary of the sinking of the Japanese cruiser *Haguro* by surface torpedo attack, a fascinating example of the combination of an obsolescent technology (destroyer torpedoes) with radar and operations rooms. Now, half a century later, information gained from a wide range of sensors can be displayed in the operations room of an ordinary destroyer or frigate giving a good idea of not just the tactical but the strategic operational situation too. Electronically linked forces have become the norm for major navies and now this principle is being extended by the development in the United States of Co-operative Engagement Capability (CEC), the sharing throughout the whole force of fire control quality information. This exciting development that allows the entire force to fight as a single unit places still further emphasis on the requirement for different naval forces intending to operate together to possess the same command and control technologies. Certainly navies with a traditional close relationship with the USN, such as the RN and the

RAN, need to acquire CEC as soon as practicable.

International naval co-operation is an increasing trend. This allows national naval forces to respond to the increasingly powerful dynamics of complex interdependence. Operations under UN mandates, if not UN control, have become the rule rather than the exception. Recent experience in the Gulf and the Adriatic has done much to develop a corpus of doctrine and experience in combined naval activities. Differences in rules of engagement can be worked around effectively, although it is of course desirable to achieve the maximum possible level of interoperability.

A key factor making international naval operations the future rule rather than the exception is that the USA is going to be decreasingly willing to act independently — or perhaps at all if the commitment of ground forces is required. Naval forces are often the best forces to use for coalition building because of their utility for development with limited commitment. Moreover they are often at a premium at the early stage of a crisis when embargoes and demonstrations of force are required. By these means international solidarity can be shown sufficiently for the commitment of some US assets. However, these assets might be primarily maritime. The clear trend in US policy is to prefer offshore carrier and amphibious contributions rather than more fixed ground based forces. This may well continue with the USA preferring to give necessary support — including key space-based $C^5I^2$ assets — to another nation's or group of nations' expeditionary operations rather than taking the lead itself.

Nevertheless the USA will remain the pre-eminent naval actor well into the next century. It will continue to possess capabilities no-one else can match — notably large aircraft carriers and a massive amphibious force. After the USA will come, for a time at least, the two large European navies of the United Kingdom and France with their much more limited but still significant global force projection capabilities. Then come the smaller medium power navies of the broadly 'western' coalition, such as Canada and Australia. These need to provide a sufficiently comprehensive set of capabilities to control their own maritime environments and to contribute significantly to combined forces of a regional or more broadly international nature. A noteworthy tendency is the trend towards air capable support ships — even in the German Navy — to provide a mobile base for a flexible national 'medium power' expeditionary capability.

The future of the Russian Navy is tied up with the uncertainties of the future of the country itself. A recent visit to the Northern Fleet revealed a numerically much reduced force of modern destroyers and large anti-submarine ships and an equally slimmed-down but efficient submarine force. Power projection capabilities seemed very limited with only one carrier-type ship left running and the amphibious shipping more or less laid up. Presumable there are more pressing uses for Naval Infantry elsewhere. For the time being the pattern of Russian deployment seems to have reverted to extended coastal defence with occasional forays by individual units, sometimes to take part in international operations, sometimes to deploy nuclear-powered submarines in more traditional ways.

The capacity of the Russian Navy to operate in force effectively far from its shores, however, must remain limited for some time. This, together with a natural desire to retain the status the Soviet Navy achieved in the 1970s and 80s, helps explain the Russian interest in developing techniques of co-operation with other major navies.

Russian technology is allowing China to emerge as a significant naval power. There is a tendency to overestimate China's naval forces. The numbers of fully modern destroyer/frigate types remain very small indeed and will only grow relatively slowly. The Chinese submarine force is significant but not overwhelmingly powerful in terms of real operational capability. The Chinese seem to have taken a sensibly long-term approach to their naval build-up, emphasising it in resource terms but working on building up training and personnel skills first, rather then rushing into building ships that cannot be operated properly. Assuming that China stays together and continues to expand economically at the present rate — perhaps two rather large assumptions — one might expect the Chinese navy to grow into a fully-fledged Great Power navy but it will take several decades yet. This is not to say that China cannot create problems closer to its shores, notably in the South China Sea against weaker neighbours. But, for some time to come, it picks quarrels with more well-established major naval powers at its peril.

In technological terms the Japanese Maritime Self-Defence Force is far ahead of the Chinese PLA Navy. It possesses perhaps the finest destroyer/frigate fleet outside the USN — especially now that it deploys AEGIS-equipped ships — but it lacks both SSNs and carrier-type vessels, for obvious political and historical reasons. The latter gap is to be filled by an enhanced landing ship but it will take longer for Japan to adopt nuclear power. The growth of Japan's navy is vitally dependent on the continuation of the American defence relationship. If the USA cannot or will not provide the naval cover it has done since the Second World War, Japan, as one of the most sea-dependent nations in the world, can do no other than invest a larger proportion of the world's second-largest GNP in a navy of her own, including carriers and SSNs. She has the technological prowess to do so and in classical Mahanian terms ought to be a global naval power.

Major expansion in the Japanese Navy would of course have massive regional implications. Even without it, however, the South Koreans are looking forward to a future after reunification when they might well have a GNP comparable to a current major European power and a long-reach navy to match. As long as Taiwan retains its current status it requires a powerful escort force to deter blockade by the mainland. In combat tonnage it is one of the world's top ten navies and its technological capabilities are remarkably high. If peaceful unification occurred its surface fleet would transform the overall capabilities of the Chinese Navy.

The highly maritime nature of the Asia-Pacific region encourages the nations of the area to invest the fruits of their growing economies in naval forces. Throughout the region growth is taking place, with new Malaysian frigates, large scale second-hand buying by the Indonesians and , perhaps most notably of all, the Thai aircraft carrier. Submarines are under consideration by those states who do not already have them. All these states have important off-shore interests and responsibilities and the process need not necessarily be dangerous. Yet there are important disputes over sovereignty, even among ASEAN partners and, despite local rhetoric, some of the building is interactive. It would still be wrong to characterise these developments as a regional "naval arms race" but steps should be taken of a confidence building nature to prevent unnecessary suspicion being engendered. Naval co-operation at various levels is a key part of this process.

In the Indian Ocean India retains the ambition to be the dominant regional power. Her naval build-up has been limited by economic problems and these are likely to persist for some time. This will mean that the Indian Navy will not grow as much as originally planned but it will remain a significant force with limited power projection capabilities to maintain a favourable situation in neighbouring island states. India, however, also seems to have responded to constraints by developing a new emphasis on naval co-operation with other littoral nations such as South Africa.

If a trend can be extrapolated from the above it is a dialectic of more national naval power but also more international naval co-operation. This is a natural outcome of the wider dialectic of 'realism' and 'complex inter-dependence'. Modern sea-power in its civil sense provides one of the main mechanisms by which the world is bound together. Its international nature emphasises the mutuality of state interests. In parallel, naval power is also being increasingly conceived of as an international expeditionary (and sea control) capability to mitigate the effects of a new world disorder ashore as well as afloat. This is a very different world from Mahan's image of competitive self-sufficient maritime empires.

Of course it all might change. As Colin Gray puts it "Bad times always return". One need not be quite so pessimistic but recent disputes between the USA and Japan show at least the potential for a breakup of the liberal economic order. There might also arise a new major 'threat' requiring containment by the Western maritime coalition. In these circumstances naval forces may well have to exploit their inherent flexibility to re-emphasise sea control at sea rather then power projection from it. One should therefore beware the siren voices who speak of "the end of naval strategy" or who wish to abandon more traditional warships for slow offshore support vessels or even rig-like offshore airfields. Such over-specialisation denies the inherent nature of sea power, its flexibility and mobility.

Whatever the future holds, the use of the sea for civil and military purposes is going to be at least as important as it has been in the past, probably even more so. This is a promising environment for navies on both sides of the world. I see no need to revise my conclusions in "The Future of Sea Power" that the prospects for sea power and its practitioners remain as sound as ever.