

## **ASPI Future Submarine Conference**

### **The Role of Submarines in a Maritime Strategy**

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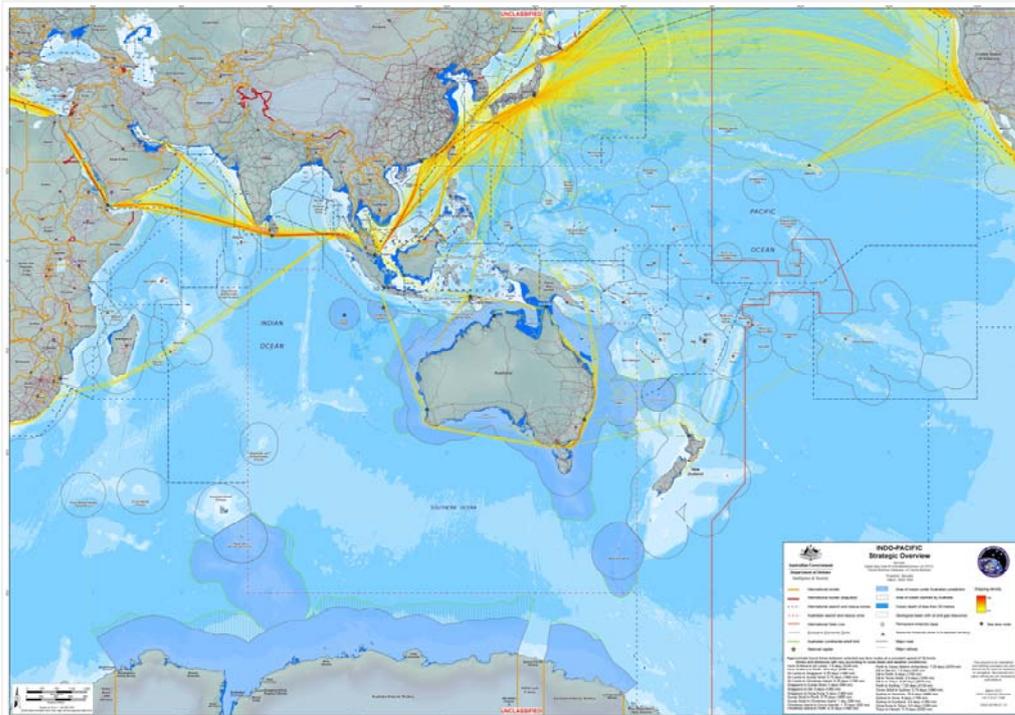
Good Morning Minister for Defence, Senator the Honourable David Johnston, Mr Stephen Loosley, Mr Peter Jennings, Former Chiefs of Navy, Ladies and Gentlemen. I'm delighted to be able to speak to you about submarines in Australia's maritime strategy.

Can I start by acknowledging the Ngunawaal people, the traditional owners of this land on which we meet and pay my respects to their elders past and present.

It's important that, as we look at the upcoming white paper process, there is a broad understanding of the role of submarines in Australia's defence strategy. I suspect there is no other element of the ADF's current ORBAT which has received such consistent, high-profile attention. You have to go back to the F-111 purchase in the 1960s to find something comparable. But sadly, a lot of the discussion about submarines in Australia is based on headlines and glib grabs rather than fact. While Navy should never shrink from scrutiny of how it serves the nation, the discussion has left us as a nation with a somewhat skewed understanding of both the role and capability of our submarines, how they serve our national interests, and our capacity to build, maintain and operate them.

My intention today is to provide as objective a view as possible of the strategic rationale for submarines in Australia's defence forces. More than anyone else, I understand it's about much more than the platform but I do want to focus on the role of the platform because, let's not kid ourselves, along with the people, the platform is the key component in the capability. Before I delve into the role of submarines, there are a few things about Australia's maritime strategy that are worth setting out.

The first is that maritime strategy is not naval strategy – maritime strategy is much broader. This nation has a maritime strategy as the cornerstone of its defence simply because of our strategic geography.



This map shows our region, the Indo-Pacific and the major trading arteries that connect the global economy.

Unlike some academics and commentators, I like the term Indo-Pacific because it puts the focus firmly on these two great oceans. Our nation's security, prosperity and way of life are **completely** dependent on what travels on and over the world's oceans, and our maritime resources are increasingly significant to the operation of our national economy. It's difficult to overstate how important this is to Australia.

Many take the smooth functioning of our globally connected, just in time economy for granted. For most their outlook is shaped by the working system. My job along with other Defence chiefs is to envisage and plan to mitigate circumstances where that system is in fact disrupted. Just think about our national situation with significant disruptions to the global trade in petroleum, iron ore, natural gas, coal or wheat.

The recent NRMA Study on Australia's liquid fuel security is for me a significant case in point. Who here is really comfortable that a serious interruption to our liquid fuel supplies to this country would, within a month, have significant impacts on our economy and society?

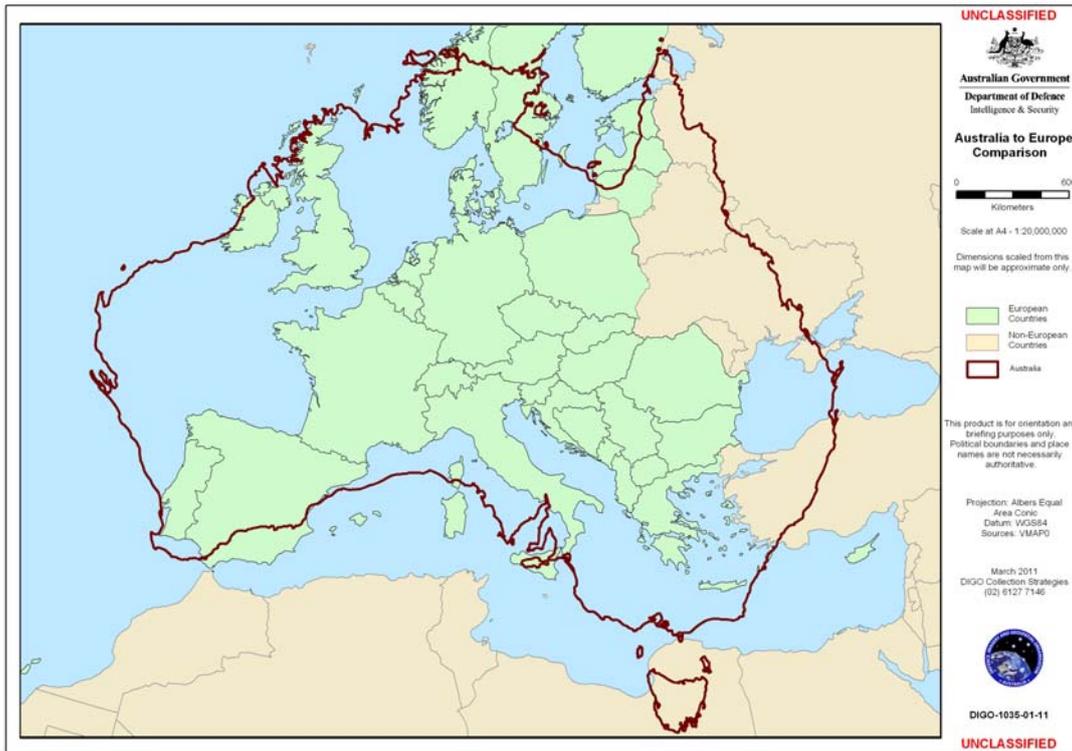
That is why Navy's contribution to the effective operation of the maritime global trading system is so important. Those contributions are needed around the system, not just in a tight set of concentric rings drawn around Darwin. These contributions are more sophisticated than traditional notions of SLOC protection and that is something we need to explore. So, as we discuss the role of submarines in our national maritime strategy, it's important to keep in mind the stakes we are considering.

As the Prime Minister has recently pointed out, it's difficult to predict exactly what the future holds. What we do know is what's of value to Australia, where it is, and how we can contribute to its preservation. This puts us in the best possible position to shape and respond to future events. The Navy has an important role to play in a maritime strategy, but it is just one component of the military element of national power, and only one of the players both militarily and more broadly across our national security effort. I've spoken about this in detail elsewhere, so I won't harp on it today, however it's important to appreciate the context.

Submarines are a critical element of our maritime strategy. That they are worthy of such detailed individual consideration is one indicator of their significance.

Australia has operated submarines on and off for a century – next month, it will be one hundred years since the arrival of our first submarines AE1 and AE2 into Sydney Harbour. And we've operated large (amongst the largest in the world), long range conventional submarines for almost fifty years. The reasons for this are a combination of our strategic geography; and the design challenge of balancing submarine size, endurance and power.

Turning first to our strategic geography, it's worth appreciating just how large Australia is, and just how large the Indo-Pacific is.



This slide (above) is one you have probably seen before, but I think it sets the context well, particularly noting that it is through their capacity to patrol well beyond Australia’s shores that our submarines generate the most effect. This slide is not designed to denigrate any submarine design but simply to make the point that each nation needs a design suited to their circumstances. Designing a boat to operate in the Baltic is, in pure geographical area terms, akin to designing it to operate solely in the Gulf of Carpentaria. It is entirely satisfactory for one country’s strategic needs but clearly doesn’t meet the needs of another.

The *Oberon* Class submarines we purchased in the 1960s were amongst the largest conventional submarines in the world at the time. They were designed and built for operations around the world and had the range and endurance for that purpose. Subsequent classes of British submarine were nuclear powered, with the exception of the *Upholder* Class, which were built for Cold War operations in the North Sea and the Greenland-Iceland-UK Gap.

At this point, it’s worth addressing the issue of nuclear powered submarines – just to pre-empt the inevitable questions. Nuclear power is certainly a very effective way of powering a submarine, but it is not an inexpensive or simple drop-in

alternative to a diesel-electric power plant. There is a large shoreside infrastructure cost and a big workforce impost not just in numbers but in the long term investment in human capital that we simply have not made. An investment that is crucial to the safe operation of a fleet of nuclear powered ships. In the absence of a much larger national nuclear power sector, it is simply not viable for Australia to consider nuclear power for this next generation of submarines.

Given that large conventional submarines are the most appropriate for our circumstances, it is also important to understand the consequences of such a decision, particularly given how tightly integrated is the submarine design process. There are reasons why the largest conventional submarines in the world – most of which are operated by Japan and Australia – are about the size of a *Collins* class boat. Submarines of this size are an effective balance between propulsion capacity, the internal volume required to fit equipment, fuel, weapons and people, and the logistics to sustain them for long endurance missions. If you change any one of these parameters, there are flow on consequences – more internal volume means a longer or wider hull, which needs more power, hence bigger engines, which takes up more of your internal volume ...

You can see how it goes.

This is not to say that there's nothing more to be learned or that there are no developments in submarine design. We continue to develop relationships with other navies who share similar interests and obviously we are discussing some aspects of submarines with our Japanese friends, who also operate large conventional submarines. Submarine design and construction is a long term commitment in time and resources.

This has been one aspect of my discussions with counterparts in the UK, USA, Spain, South Korea, France, Japan and Sweden. They attach great importance to incremental development and to learning from their previous experiences. If you look at very successful submarine designs, they are based on carefully derived requirements, and benefit from long-term development and improvement. This is best

demonstrated by the success of the *Virginia* SSN program in the United States, and the incremental development approach followed by Japan.

What does this mean for Australia and our current processes? The first thing to say is that we are not looking at trying to deliver a science project which lives on the boundaries of the laws of physics. What we are looking at is probably best characterised as a contemporary version of the *Collins* class capability.

Yes, as the Prime Minister says, this will be a significantly more capable submarine. And that improvement in capability can be achieved over time by evolving the design. This does not mean any decisions have been made with respect to any of the options which are before the Government. As you have heard from the Minister, Government is understandably using the White Paper process to reconfirm in its mind what the right submarine options and numbers are. Given the scale of investment none of us should be surprised at this. And of course the discussion about the future cannot be disentangled from the discussion about the *Collins* capability.

Hence the importance of the Coles Review over the last couple of years.

While we had initiated work on a number of aspects of the review before it occurred, it's fair to say that it provided a very necessary holistic view of the enterprise. That was important to help drive change and was very helpful to me to have it so early in my time as Chief as it was for Warren King early in his time as CEO DMO. As you would have seen from the Phase 4 report we have made some excellent progress in driving to benchmark standards.

I note though that it is still difficult to get genuine good news about submarines any airplay in this country despite the valiant efforts of one or two journalists. I thank them for their efforts!

As good as the news is in the Phase 4 report I would sound a similar note of caution to Mr Coles and to the Minister. There is no doubt that the submarine capability is now on the right trajectory but there will be ups and downs in availability as we go forward until the full 10+2 regime is fully in place. This is a reality that is

reflective more of fleet size than anything else that leaves us little room for manoeuvre when something legitimately goes awry.

The *Collins* class are very capable submarines, but they have not always been reliable submarines. That's less to do with their construction and more to do with some particular component choices, an ambitious combat system concept and some very poor logistic support arrangements and decisions. And it was these choices which created the long term reliability issues which have flowed through operational availability and our ability to generate and sustain the submarine workforce. Building any submarine, even in a shipyard with extensive experience, is a demanding task and not without its challenges.

Notwithstanding, when you look at the scale and complexity of what was achieved from almost nothing, the building of the *Collins* class was quite remarkable. The difference between the O boats and *Collins* is that for *Collins* we were the parent Navy. In the O boats we relied heavily on the support of the RN for maintenance regimes and sharing of issues and challenges. There was always the RN to fall back on. Being a parent Navy is something we have rarely been for major combatants. The *Anzacs* were the first class we faced this challenge in, and even then we had the MEKO User Group nations to share challenges with.

*Collins* though was really ours from the start and with that ownership came that logistic support challenge I have spoken of. We have learnt much from this, and, given the challenges of the submarine life cycle, there will be more to learn ahead I am sure. Understanding this parent Navy mindset and the attendant support arrangements that we know are needed will stand us in good stead for the future submarine. One of the most important features that has taken a while to sink in is the need for the key submarine players to act as an enterprise. We are seeing encouraging signs of enterprise activity but more work is needed and we cannot afford to bathe in the reflected glory of the Coles Phase 4 report.

So why persist? Because a capable submarine force gives us strategic weight. For Australia, our submarines provide us with *strategic weight* in a way that no other ADF asset, or combination of ADF assets does. By *strategic weight*, I mean

submarines are a capability which shapes or changes the behaviour of other nations and the calculus of their leaders.

There are many countries which are seeking the strategic weight that a submarine capability brings – and many countries in our region have recently acquired or are looking to acquire submarines. On current projections, by 2030 – if you leave ourselves and the US to one side – about half of all the submarines in the world will be based in the Indo-Pacific. Significantly more if you include the US and ourselves. More than half of the world’s submarines operate in the region through which all of our maritime trade passes – ninety percent of everything for us and for our allies, partners and neighbours passes through this region.

And what are submarines designed for? They are an offensive capability, intended to sink ships and other submarines. Yes, they do other tasks, but this offensive capability is the bread and butter of ‘the trade’. Because of their potency, our submarines can have a powerful conventional deterrent effect.

This deterrent effect operates in two distinct ways. The first is fairly well known – their offensive capacity means a potential adversary must consider whether the use of force against Australian interests is wise, achievable or without risk of an Australian response. This is an immediate, direct deterrent effect.

But there is also a much longer term deterrent impact. By having such capable submarines in the ADF order of battle, any potential adversary must be able to defeat our submarine capability. And, as many in navies and air forces around the world can testify, anti-submarine warfare is one of the more complex maritime warfare disciplines to be effective at. It takes a range of expensive high-end capabilities – surface, air and sub-surface units – which must be developed and maintained over many years.

As we contemplate the direct cost of the new submarine program for Australia, I think we should always balance that against the considerable cost impact that the investment we make imposes on others to try and counter the effect of our submarine

capability. This aspect of the submarine discussion is largely absent in the public domain, if we are truly thinking strategically it needs to be there, front and centre.

Submarines provide the Australian Government with options to take action in our national interest. Importantly, the Government can exercise these options to act at any time of Australia's choosing and under almost any conceivable threat scenario. And we can act as our interests dictate, either as part of an alliance, within a coalition or unilaterally.

So, as we discuss all the different characteristics of our submarines, we need to keep coming back to the strategic impact of different decisions. Decisions around capability, stealth, range and endurance all have an effect on the *strategic weight* we gain from our submarine capability. For over a century submarines have had a significant impact on both the preservation of peace and on the conduct of war at sea. The biggest military conflict to come close to Australia, WW2 in the Pacific, had a large and influential submarine campaign. While it was largely fought by large, conventional American submarines, many of which operated from Australia, we should not forget the strategic impact of that campaign. We can't say exactly where or when, Australia will need its future submarines and all the *strategic weight* they bring. But, their deterrent effect will continue to play a significant role in contributing to the security of our inherently maritime region – through their preparedness to fight and win at sea.