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LONG RANGE SUBMARINES FOR AUSTRALIA

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LONG RANGE SUBMARINES FOR AUSTRALIA

Why Submarines?

1. The submarine's primary characteristic is **stealth** – the ability to operate covertly close to an adversary's forces, to observe and report or to react and respond to changing circumstances. A well-positioned and covertly operated submarine is able to strike an adversary hard and without warning, without support from other ADF forces.

2. A **covert** submarine capability gives the Australian Government a broader range of military response options. Submarine forces can be deployed to monitor developing events, remain poised to strike for long periods then withdraw covertly if circumstances improve. The deployment of submarine forces to a theatre of operation can be declared – as subterfuge to influence an adversary's actions – or remain undeclared.

3. The covert nature of the submarine makes it an **asymmetric** capability for Australia – one where its ability to influence events far outweighs the size and weight of the force. A force able to deploy and sustain capable submarines on covert patrol anywhere in Australia's area of strategic interest requires a disproportionate response from an adversary seeking to counter it; the cost to develop and sustain an effective counterforce would be significant. This asymmetric nature gives an Australian government the ability to influence events in our region in a way that cannot be achieved by the conventional forces that Australia can afford.

4. Submarines enjoy the advantage of **access** – the ability to operate independently in sea areas where other ADF platforms cannot, because air and sea control has not been established. This gives them a unique surveillance and strike capability in areas that an adversary considers to be his own.

5. The submarine capability's primary characteristics – stealth, asymmetry and access – make it a significant **deterrent** for an adversary who threatens Australian interests in our area of strategic interest. A strong and credible submarine force demonstrates our ability to impose prohibitive costs on potential aggressors and hence influence events in this area.

Increasing strategic uncertainty

6. Australia has an enormous area of strategic interest. Our economic security depends on our ability to **trade by sea** so defending that ability has to be a core focus for the ADF. Our most important trading partners are in north and east Asia but that trade passes along Sea Lines of Communication traversing the Indonesian and Philippine archipelagos, the South China Sea and beyond. Maritime security along our Sea Lines of Communication is therefore of core interest to Australia.

7. The balance of power in the Indo-Pacific region is shifting as China and India grow and the United States rebalances its posture in response. Historical disputes remain unresolved and have the potential to resurface as nations grow in economic and military strength. Smaller nations will have to review their own posture in response to the changing power structures, with potential for friction or conflict which could easily impact on our Sea Lines of Communication. The future strategic environment in the Indo-Pacific region is thus a more uncertain one than the stability of the past half-century, at a time when we rely on maritime security more than at any time in our past.

8. Nations throughout the Indo-Pacific region are making the same judgements about the importance of the sea and are increasing the weight of their maritime forces. Submarines particularly are proliferating in our region as nations recognise the value of operating their own covert maritime forces. Countering the threat of these submarines – even from declared ‘neutral’ players – will be an increasingly difficult task for the future ADF, increasing the importance of Australia’s strategic surveillance and warning capability.

9. Australia is a middle power that seeks to maintain a stable global order by influencing the actions of bigger, more powerful nations as well as more comparable powers. Our economic and military power is limited by our population size so any influencing strategy (be it diplomatic, economic or military) has to employ a degree of asymmetry. Maintaining strong military capabilities able to achieve asymmetric influence along our Sea Lines of Communication is a vital hedging strategy as Australia moves into the more uncertain security environment ahead of us.

Why long range submarines?

10. Australia’s size in the world, geography and far-reaching interests lead correctly to its strategy of defence in depth. Our defence strategy involves targeting an adversary’s forces as far from Australia as possible, close to its bases and transit areas. By doing so we seek to control the sea and air approaches to Australia to deny an aggressor the opportunity to attack us directly. Our ability to conduct military operations far from home allows us to maintain the security of our vital interests.

11. The submarine’s unique characteristics of stealth, covert operation, asymmetry and access are maximised when it is operated in an offensive or ‘**forward**’ posture. In our context this means that Australian submarines must be capable of sustained deployed covert operations well north of the Equator. Submarine operations in these forward areas maximises Australia’s ability to influence events in our area of vital strategic interest and hence the deterrent effect of the submarine capability. The ability to sustain such operations – indefinitely, if needed – increases their asymmetric nature and capitalises on the access developed by a consistent presence. Additionally the strategic warning provided by a forward-deployed submarine force skilled in intelligence collection and surveillance allows Governments to adjust strategy to avoid conflict.

12. Since the introduction of submarines in the early 20th century, successful campaign strategies have invariably been those which have employed them offensively at long range from their bases¹.

13. Planning which limits the deployment of Australian submarines to the sea-air gap in a simple sea denial role against an adversary's forces is a fundamentally flawed strategy. It is a defensive strategy that does not exploit the submarine's attributes in situations short of this most unlikely scenario, denying Government the ability to influence events beyond the sea-air gap. Such a strategy would surrender the initiative and severely constrain the military options open to Government.

14. Defending the sea-air gap would inevitably involve operating within or close to the Indonesian Archipelago, which would require acquiescence or support from the Indonesian Government (or risks incurring their opposition).

15. Conventional submarines do not have the same tactical mobility as nuclear submarines, surface ships or aircraft. These means that they operate most effectively where the enemy *must* be and go – his own bases, focal areas and choke points – rather than in ways which could give him the potential to evade the underwater threat outright. The passive 'point defence' construct, implicit in submarine defence of the sea-air gap, lacks understanding of the geography of our vast northern areas and of the mobility of conventional submarines. There would be significant risk that our limited number of conventional submarines patrolling the sea-air gap would be in the wrong place at the wrong time.

16. Conducting forward-deployed submarine operations using shorter-range submarines operating from a forward base or tender ship is also a high-risk strategy. Australia has no 'forward' territory so our submarine operations would be entirely dependent on the good will of host nations, which could be subject to coercion from an adversary. A tender ship would also require the approval of a host nation in port and would require protection in transit to the forward port and on site, particularly when submarines were being replenished or maintained alongside. Both a forward operating base or tender ship would require proximity and access to an airport with secure routes for logistic support aircraft.

17. The most significant consequence of the selection of these forward deployment options would be the reduction in strategic uncertainty for the adversary, narrowing the area in which Australian submarine operations were being conducted.

18. The US Navy currently conducts forward-deployed submarine operations in our region from forward operating bases in Japan and Guam. We note however that, while operating from these bases is a cost-effective strategy in the current threat environment, the USN has no expectation that they will remain accessible in a higher threat future and that US submarines are more than capable of conducting their operations from US mainland and Hawaiian bases.²

¹ Notably the early periods of unrestricted submarine warfare by Germany in both World Wars until the Allies' counter-measures became effective, and the USN Pacific Submarine Force campaign against Japan that sank about 66% of Japanese ships in WW2. The WW1 allied submarine campaign in the Sea of Marmora (where HMAS AE2 was sunk) is another example of a successful forward strategy that limited the Turkish Army's ability to expel the Allied expeditionary force on the Gallipoli Peninsula.

² Note that the Australian ports of Fremantle and Brisbane were forward operating bases for the USN Pacific Submarine Force, as well as British and Dutch submarines in World 2.

Why not nuclear?

19. Nuclear propulsion is a significant mobility advantage for a submarine, allowing it to control a much broader sea area compared to a conventional submarine. Development and sustainment of a nuclear propulsion system however is a formidable engineering challenge which is considered beyond the capability of Australia at present, even if closely supported by our allies (which is by no means certain). The SIA therefore considers that Australia's next submarines should be conventionally powered but notes that, because of the limitations of conventional submarines discussed earlier, it is even more important that Australian submarines be capable of long-range deployed operations. Australian nuclear submarines could possibly defend the sea-air gap but Australian conventional submarines will have to operate much further forward to be effective.

Future force size

20. Strategic deterrence and an adversary's strategic uncertainty are clearly maximised by a larger submarine force. Force structure modelling³ shows that a minimum of 12 submarines is needed to keep two submarines continuously on station at long range and one at shorter range, with half of the force deployed at any one time to sustain such a rotation. This is considered to be the minimum force size needed to provide a credible strategic deterrence (six submarines deployed and unlocated at any time). It allows continuous submarine operations in three different areas and in varying roles.

21. The Collins class experience over the past two decades has shown that a force of six submarines is below the critical mass needed to maintain the submarine workforce, sustain the submarine industry and provide a credible deterrent.

Self-reliance

22. Australia's defence strategy is one of self-reliance within the context of the ANZUS alliance and regional cooperation. We expect to be able to deter and defeat armed attacks without relying on the combat forces of another country, to the greatest extent possible.

23. Australia expects direct combat support from the US if threatened by a major power with capabilities far beyond our own, so must be prepared to provide combat power in return when called on. A force of 12 capable submarines is numerically half of the US Navy's Pacific fleet submarine force (25 attack submarines in 2040) and therefore represents a significant contribution to any US-led operation.

24. A strong submarine force is also a very substantial and useful contribution to any future regional maritime security coalition, putting Australia in a leadership role amongst its regional partners.

³ SIA submission to DWP2009 dated 31Aug08

25. Submarine technologies are amongst the most closely-held. No nation allows export of its best submarine technologies and even close allies share only some. Long-range conventional submarines are not available in the world market now and will not be in the future.

26. In these circumstances Australia has little choice but to develop the submarines it needs and to ensure that it can sustain and upgrade them through their lives. The SIA advocates that Australia designs, builds and sustains its submarine force using Australian industry, supported by the US Navy and overseas suppliers. Such a self-reliant strategy is consistent with our broader defence strategy and is the right one for the nation's primary deterrent capability.

27. As we have learnt from the Collins class submarines, the ability to sustain and upgrade capability through life is just as important as the platforms themselves. The industry developed to design, build and sustain submarines through their life is therefore a strategic asset vital to Australia's national interests. To maximise the effectiveness of this industry the submarine platform design should be coupled with the design of the submarine industry, factoring in the optimum build cycle and maintenance philosophy such that industry can grow and sustain its skills in the long term.

28. The build cycle should be sufficiently spaced to allow a rolling program of improvements and evolution in design, learned from operations of the earlier submarines and technological advancements over time, such that the later submarines still retain a technological edge over other regional submarines. This will also provide an opportunity to 'level-load' the highly specialised workforce to prevent the peaks and troughs apparent in other build programs.

29. A measured build program will also allow a more even spend profile, taking pressure off the Defence acquisition budget.

30. A continuous build program can be balanced against available resources and can be sustained over many decades. The outcome will be a submarine force of the right size and shape to meet Australia's strategic needs, supported by an industry with the skills and capacity to evolve and enhance the submarine capability to maintain the leading edge essential in the undersea warfare environment.

Conclusion

31. Submarines have unique advantages that make them a formidable deterrent to potential adversaries. Australia depends on its ability to trade by sea and hence the security of our distant Sea Lines of Communication is vital to us in the increasingly uncertain future. A middle power like Australia can influence events far from home by employing asymmetric capabilities such as long-range submarines. A large force of long-range submarines would be a significant contribution to the US alliance and could give Australia a leadership role in regional coalitions.