

## *Should we sharpen the Shortfin Barracuda's teeth?*

The Shortfin Barracuda, the replacement submarine for the Collins-class, is touted to become the most capable conventional submarine yet seen. To date, the government has been quite coy about what weapons systems it will be fitted with (it is supposed to be announced as part of Project SEA 1000 Phase 4), but Lockheed Martin has been announced as the weapons system provider. As they provide the systems for the United States Navy's (USN) nuclear-powered attack submarines (SSNs), the new submarines may well have the software systems to manage the latest version of the Tomahawk Land Attack Cruise Missile (Block IV TLAM E).

By the time the first boat is launched in a decade or more we can expect that there will have been significant enhancements in such weapons systems. The current TLAM has a 450-kg payload, which can either be a single enhanced high-explosive warhead or cluster submunitions of various types. They have a range of up to 925 km when launched from a submarine. The launch can occur from torpedo tubes or silos using a vertical launched system (VLS). Although the USN SSNs have a VLS, there has been no hint as yet that the Barracuda will have such a capability. The Collins-class carry up to 22 torpedo-sized weapons, so we can expect that the Barracuda will have at least this, and maybe up to 30 weapons.

For a pre-planned dedicated mission, this could result in a cruise missile payload of between 15 to 25 missiles. As the 12 boats are to be built over a 25-year plus period, we can expect a new commissioning every 2 – 4 years, and thus a maximum of about nine boats at any one time. As the global performance metric is to have a third of a submarine force at sea at any one time, this could yield up to three boats and a launch capacity of 45 – 75 missiles to be fired in salvos of 15 (or more if VLS is installed). When reloading, the submarines would prudently seek to re-position as far as possible before firing again. The missiles from the subsequent salvos could make use of their extended loiter capability, their on-board memory for 15 separate targets, and the capacity to receive new targeting orders (after a rapid battle damage assessment of the first strike) to strike in an optimally tailored manner.

Among many options in a high-threat scenario, one is to use this capability, along with cyber attack, to allow a synchronised strategic strike which targets an opponent's air defence radars, command-control-communications-intelligence assets and high value aircraft (early warning, air-to-air refuelling, electronic warfare and long-range strike aircraft) in order to clear the way for our own strike aircraft (Super Hornets or F35s) – the aim being to maximise the damage caused by our aircraft whilst minimising air frame and air crew casualties (at US\$1

million per TLAM, they currently represent about 1 per cent of the replacement cost of an F35 and pilot).

A Kokoda Foundation conference and then paper first proposed that Australia should take such a dimensional force-projection step up. The need for a substantive initial critical first strike was touted as the justification for having 12 submarines. Apparently, Prime Minister Rudd inserted this number into the 2009 Defence white paper as well as the words "strategic strike" as a task in the submarine section. The 2016 white paper, however, has been quite circumspect and does not mention long-range strike in the submarine section, but neither does it rule it out. Creation and maintenance of ambiguity is a key strategic technique, as it puts your opponents on the horns of a dilemma with a view to shaping them to dissipate their resources in order to provide precautionary coverage of your lurking options.

A range of commentators (including Desmond Ball and Robert O'Neill), building on the Kokoda conference, have justified this increased capability by saying that it would allow Australia to:

- go it alone in a situation where our Allies were constrained from helping;
- have the "weight" of capability to substantiate us leading a regional coalition; and
- stand as a more equal partner with the United States, and thus earn us a seat at the table when major strategic decisions were being made – such a strike capability is seen as a key mechanism for defeating an anti-access or area-denial strategy employed by an opponent with the aim of preventing carrier battle groups from getting within aircraft launch range.

While the logic is definitely assertive, it is one that I suspect the current government is leery of promulgating, as it would almost certainly lead to vociferous protests from a range of international actors to our north. It would also give the domestic media free reign to pontificate on potential scenarios *ad nauseam*.

As such, I suspect the option will definitely be left hanging until the first boat is in the water and has proven that the wrinkles have been ironed out. Thereafter, we may well see RAN submariners quietly doing exchange postings on USN SSNs to learn how to 'throw Tomahawks', and maybe a quiet 'lay buy' of a small stock of the latest version of the TLAM missile. Time will tell. Certainly, it is an option with many hanging issues, but one we should potentially consider in an increasingly uncertain world.

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