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# RSIS COMMENTARIES

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## **Australia's Submarine Dilemma: Homegrown or Not?**

By David Brewster

### **Synopsis**

*The debate over Australia's future submarine fleet is hotting up. Canberra is making decisions about a new fleet which will have a major impact on Australia's defence capabilities into the middle of this century.*

### **Commentary**

AUSTRALIA IS now on the verge of some big decisions about its new submarine fleet. Canberra is considering building some 12 new submarines over the next two decades at a projected cost of more than A\$40 billion (US\$38 billion). The choice of submarine design type will need to be made soon if the first of the new class is to become operational by 2030.

This is not just a large equipment acquisition. Australia's submarines represent its principal independent strategic deterrent and one of its key means of power projection. The shape and size of its new fleet will therefore be a major factor in Australia's strategic weight in the region for several decades to come.

### **Lessons from the *Collins* class**

Australia's choices are limited by several geographic and political factors. Firstly, its submarines must be capable of independent deployment over vast distances – from the South Pacific to Northeast Asia and the Persian Gulf. Secondly, the submarines must also be conventionally powered, which significantly increases travel time and decreases loiter time as compared with the much faster nuclear-powered submarines. This means that Australian submarines must be among the largest and longest range conventional submarines in the world.

Thirdly, the government has committed to build the submarines in Australia. The naval shipbuilding industry is a big economic factor for South Australia and many see the naval shipbuilding industry as an essential defence capability.

Australia has operated submarines for more than a century. Australia's current fleet consists of six Australian-built *Collins* class submarines, which are expected to reach end of life starting in the mid 2020s. The *Collins* class has been controversial.

Although they are among the most capable conventional submarines anywhere in the world, for a long time they suffered many reliability problems. According to Australian Navy Chief, Ray Griggs, this reflected some

poor component choices and poor logistics, underscoring the Australian Navy's inexperience in acting as the 'parent navy' to a class of major warships. On top of this, Australia's recent mining boom has sucked away large portions of Australia's submarine crew with promises of much higher wages, leaving many submarines tied up at the dock.

But a recent report has concluded that most of these problems have been resolved and that there has been a dramatic increase in fleet availability compared with 4 years ago.

### **Nuclear vs. conventional options**

Some analysts have argued that many of Australia's problems could be resolved by simply purchasing off-the-shelf nuclear powered Virginia class submarines from the United States. These would have a relatively low unit price and would resolve many operational constraints faced by slow moving conventional submarines.

But this option has been rejected. The government has no inclination to venture into the political minefield of nuclear power, which has long been taboo in Australia. Nukes would also need to be supported by very large onshore nuclear power logistical capabilities – and in the absence of a civilian nuclear power industry, Australia simply does not have these capabilities. Suggestions that Australia could largely rely on US nuclear logistics have apparently been rejected on national interest grounds.

The nuclear option, it seems, is dead in the water.

But Australia's options for conventional submarines are limited. There are few conventional submarines anywhere in the world that have the capabilities that Australia requires.

It was assumed under the previous government that the most likely option would be an Australian-designed 'evolved' version of the *Collins* – but bigger and more capable. But Australia's new conservative government is concerned about the risks associated with an Australian-based designed effort. The frontrunner for the design has shifted to Germany's TKMS, and Sweden's Saab has also now joined the fray. These options are not without significant risks themselves: neither has designed submarines of the size that Australia requires.

But a recent defence technology agreement between Australia and Japan may open up Australia's options. Japan's submarine technology is among the world's most advanced. Japan has long prohibited the export of defence technology and the new agreement represents a breakthrough for Australia.

Australia is very interested in what Japan may have to offer. In particular, the drive train used in Japan's *Soryu*-class submarines potentially mated with Swedish air independent propulsion technology may be ideal for Australian requirements. Australia might even be interested in an off-the-shelf *Soryu* class design, although this may be a political step too far for Japan.

### **The \$40 billion plus question**

Where does that leave Australia's choice? The A\$40 billion plus price tag was always going to be a big stretch without a major increase in defence spending and/or cuts in other defence programmes.

A new Defence White Paper, due to be completed next year, is supposed to answer these questions. One answer will likely be extending the life of the *Collins* submarines. This is looking increasingly feasible following the resolution of most reliability problems, allowing an extension of maintenance cycle from an assumed 8+2 years maintenance to 10+2 years. This now implies a class life of some 34 years. Access to Japanese technology may also be an important element in this.

The other answer will likely involve cutting the size of the fleet, perhaps to as few as six submarines. This should become more evident in the new White Paper. Of course, this could have major repercussions for Australia's strategic weight in the region.

But the choice may not be just about manned submarines. In the longer term, unmanned underwater vehicles (UUVs) will likely represent another important option. Although requiring further development, many believe that UUVs will soon catch up with Unmanned Aerial Vehicles (UAVs). In the long run UUVs could address many of the Australia's requirements. Used in conjunction with the manned fleet, they could potentially fill the capability gap.

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