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HUMAN SURVIVAL PROJECT



SUBMISSION TO JSCOT INQUIRY INTO AGREEMENT BETWEEN
THE GOVERNMENT OF AUSTRALIA,
THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT
BRITAIN AND NORTHERN IRELAND, AND THE GOVERNMENT
OF THE UNITED STATES OF AMERICA FOR THE EXCHANGE
OF NAVAL NUCLEAR PROPULSION INFORMATION

This submission seeks to canvass the broader questions of the merits of acquisition of nuclear submarines by Australia, as well as questions of the overall role of any kind of submarine, as against other elements of our armed forces, and as against better diplomacy, since the best way to be secure is, as Sun Tzu recognised, to have no enemies. In doing so I have attempted to draw the obvious conclusions for an Australian naval shipbuilding industry whilst being aware that the truly important questions are about foreign policy and geopolitics not merely naval acquisition.

While in many respects this submission thus goes beyond the specific terms of reference of this JSCOT, it canvasses matters that will be of interest to every committee member and that have implications for literally every term of reference.

While the specifics of the advisability or otherwise of acquisition of nuclear submarines is not within the inquiry terms of reference it is a question in which any JSCOT inquiry into AUKUS must have a deep interest, and will have profound consequences for all aspects of any such inquiry.

This submission is primarily about the merits or otherwise of the course of action - acquisition of nuclear submarines - to which the clauses of the AUKUS agreement reproduced below, relate. The entire agreement is about facilitating the acquisition by Australia of nuclear submarines. This submission deals with the merits of that course of action and concludes that such acquisition is not in Australia's interest and that Australia, should it consider a submarine capability to be important would be better served by the 'Deep Blue Tech' evolution of the Collins Class.

Relevant parts of AUKUS Agreement

ARTICLE II

Exchange of Information

Each Party may communicate to or exchange with the other Parties naval nuclear propulsion information as is determined to be necessary to research, develop, design, manufacture, operate, regulate, and dispose of military reactors, and may provide support to facilitate such communication or exchange, to the extent and by such means as may be mutually agreed.

ARTICLE III

Responsibility for Use of Information

The use of any information (including design drawings and specifications) communicated or exchanged under this Agreement shall be the responsibility of the Party receiving it, and the originating Party does not provide any indemnity, and does not warrant the accuracy or completeness of such information and does not warrant the suitability or completeness of such information for any particular use or application.

C. Cooperation under this Agreement shall require the application of International Atomic Energy Agency safeguards with respect to all nuclear material in all peaceful nuclear activities within the territory of Australia, under its jurisdiction, or carried out under its control anywhere. Implementation of the Agreement between Australia and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, signed at Vienna on July 10, 1974, and the Protocol Additional to the Agreement between Australia and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, signed at Vienna on September 23, 1997, shall be considered to fulfill this requirement.

ARTICLE V

Guaranties

A. The Parties shall accord full security protection to classified information communicated or exchanged pursuant to this Agreement in accordance with the Annexes to this Agreement, and in accordance with applicable national law and regulations of the Parties. In no case shall any Party

maintain security standards for safeguarding classified information made available pursuant to this Agreement less restrictive than those set forth in the Annexes to this Agreement in effect on the date this Agreement comes into force.

B. Unclassified naval nuclear propulsion information communicated or exchanged pursuant to this Agreement shall be accorded at least the same level of protection by the recipient Party as that accorded to such information by the originating Party. The Parties shall consult with each other regarding the appropriate protection for such information.

C. Naval nuclear propulsion information communicated or exchanged pursuant to this Agreement shall be made available through channels existing or hereafter established for the communication or exchange of such information between the Parties.

D. Naval nuclear propulsion information communicated or exchanged pursuant to this Agreement shall not be communicated or exchanged by the recipient Party or persons under its jurisdiction to any unauthorized persons or beyond the jurisdiction or control of the Parties. Any Party may stipulate the degree to which any of the information communicated or exchanged by it or persons

ARTICLE VII

Classification Policies

Mutually determined classification policies shall be maintained with respect to all classified information communicated or exchanged under this Agreement. The Parties shall consult with each other on the classification policies.

ARTICLE VIII

Intellectual Property

Without prejudice to any future agreement or arrangement between the Parties as to Intellectual Property in the context of the design, construction, operation, regulation, and disposal of a naval nuclear-powered vessel:

A. With respect to any invention or discovery employing

information which has been communicated or exchanged pursuant to Article II of this Agreement, and made or conceived by the recipient Party, or any agency or corporation owned or controlled thereby, or any of their agents or contractors, or any employee of any of the foregoing, after the date of such communication or exchange but during the period this Agreement is in force:

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1. in the case of such invention or discovery in which rights are owned by the recipient Party, or any agency or corporation owned or controlled thereby, the recipient Party shall, to the extent owned by any of them:

(a) transfer and assign to the originating Party all right, title, and interest in and to the invention or discovery, or patent application or patent thereon, in the country of that originating Party, subject to (i) the retention of a royalty-free, non-exclusive, irrevocable license to use for the governmental purposes of the recipient Party and for the purposes of mutual defense; and (ii) the grant to the other, non-originating Party a royalty-free, non-exclusive, irrevocable license to use for the governmental purposes of such Party and for the purposes of mutual defense; and

(b) grant to both the originating Party and the other Party a royalty-free, non-exclusive, irrevocable license for the governmental purposes of the originating Party and the other Party and for purposes of mutual defense in the country of the recipient Party or third countries, including use in the production of material in such countries for sale to the recipient Party by a contractor of that originating Party or for the other Party.

B. With respect to any invention or discovery, or patent application or patent thereon, or license or sublicense therein, covered by paragraph A of this Article, each Party:

1. may, to the extent of its right, title, and interest therein, deal with the same in its own country as it may desire, but shall in no event discriminate against citizens of any Party in respect of granting any license or sublicense under the patents owned by it in its own or any other country;

2. hereby waives any and all claims against any Party for compensation, royalty, or award, and hereby releases the other Parties with respect to any and all such claims.
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C. 1. No patent application with respect to any classified invention or discovery employing classified information which has been communicated or exchanged pursuant to Article II may be filed:

(a) by any Party or any person in the country of any Party except in accordance with agreed conditions and procedures; or

(b) in any country not a party to this Agreement.
2. Appropriate secrecy or prohibition orders shall be issued for the purpose of giving effect to this paragraph.

Summary:

The above text, extracted from the AUKUS agreement, shows areas of potential difficulty in disposal of reactors, and protection of classified intellectual property. The agreement itself does not canvass whether or not Australia SHOULD enter into such an agreement, nor what might really be the most appropriate submarine technology to acquire. This has never been the subject of any inquiry parliamentary or otherwise, and it must be subject to such inquiry.

--The arrival of the nuclear submarines will not be before 2035 and more likely 2040. (The Government has said that 'at least one' vessel will arrive before 2040. We will see.) This means both that the subs will in fact arrive far too late to perform any useful function in terms of regional threats that are far more immediate, and also means that the submarine part of Australia's shipbuilding industry at least, will face the dreaded 'valley of death'. and making an ongoing shipbuilding industry especially one based on submarines, increasingly problematic. It also means that the submarines in question will only arrive some ten years AFTER the geopolitical threats they are meant to counter.

It also means that Australia will be dependent on the Collins Class for considerably beyond the lifetime that those ships were initially designed for. It may mean that the Collins Class undergoes not one but two LOTE procedures, in which the ship is all-but rebuilt. While the Collins Class is proving to be a first-class submarine and has repeatedly been able to evade nuclear submarines very similar to those we think of acquiring, by 2040 (and more by 2050) the hulls really will be getting old. In addition, repeated radical upgrades and updates of Collins will raise the question 'Why not 'evolved Collins'', since this is, the upgrades/refits of Collins are

successful, what we will have. There will rightly be pressure for a revisiting of Deep Blue Tech. It is the authors view that this, and not nuclear submarines, would be in Australia's interest.

--The actual performance of nuclear submarines is billed repeatedly as not only faster and longer range than that of conventional subs, but also as quieter. This is the opposite of what is actually the case. While conventional subs are noisy while 'snorting', in quiet patrol mode they are quieter than quiet. Even on You Tube there is video after video in which an advanced conventional sub evades a nuclear hunter-killer sub of exactly the sort we plan to acquire, and goes on to destroy a high-profile US target vessel. (Swedish subs 'sinks' USS Ronald Reagan, and Collins class sub 'sinks' US target – and advertises its presence with 'land down under'.) **The actual real world performance of unclear subs vs advanced conventional subs MUST be central to the deliberations of JSCOT.**

(<https://www.youtube.com/watch?v=saCdvAp5cow>)(<https://www.youtube.com/watch?v=d8Kv4rqR6RQ>.)

Nuclear subs even at their quietest are far from truly quiet because reactors require pumps, and turbines and steam require lots of pumps, while electric motors and batteries and/or AIP can be run literally as a 'black hole in the water'. While this does not directly come under the JSCOT Inquiry's terms of reference, JSCOT must surely have an interest in whether, in fact, the acquisition of nuclear subs is in fact the best that can be done militarily and technically.

--The Government in its announcement, and the public debate more broadly have paid far too little attention to asking fundamental questions about the actual role of submarines in Australia's defence and security. Indeed, submarines are referred to by one commentator (Shoebridge) as the 'magic animal' of Australia's defence.

But as the 'magic animal' of Australia's defence is by far the most costly item in our defence budget and the one most likely to become a monster long term project with blowing-out costs, and ever-extending timelines, (especially when the 'magic animal' is nuclear), our need for its specific capabilities does need examining from the beginning.

--Why do we even need subs at all? (I am not assuming we do not, just saying the question must be asked, and above all by JSCOT)

--When we allocate defence dollars, should they be allocated to a monster longterm submarine project that might deliver in 10 years or are there more pressing and immediate items maybe not naval at all, we could give some or all of those resources?

--Assuming we do need subs, why do we need them and what exact capabilities do we need? Would those capabilities be best filled by a nuclear sub that is in fact unable to be completely invisible in the depths of the ocean, or by an 'evolved Collins' with AIP that can make itself 'disappear'? (only to reappear in torpedo range

of a juicy target such as the USS Ronald Reagan) (again, real world comparisons of advanced conventional subs against nuclear MUST be central to JSCOTs deliberations)

--Are there even military solutions at all to Australia's security problems? Might we be better off working our diplomacy so we do not have enemies? Realistically do we have any alternative to that?

These last questions do of course go beyond the terms of reference of JSCOT, but JSCOT members ought nonetheless to give them profound consideration. Questions about 'what kind of submarine? How many? How much should we pay for them? Who will supply the technology behind them? Affect every one of the terms of reference.

The decision to establish a new diplomatic/military grouping, AUKUS, deepens confrontational tendencies in the Indo-Pacific region and is hence destabilising, and worsens rather than improves Australia's national security. It helps to 'paint nuclear targets on Australia's backside'.

While questions of geopolitics technically go beyond JSCOT terms of reference they underlie just about everything else we talk about and merit the JSCOT members profound consideration. That the acquisition of nuclear subs may make us a potential nuclear target (or expand the Russian DPRK and Chinese target list beyond Pine Gap and NW Cape), suggest we need to ask that question 'does our security even HAVE military answers? With redoubled urgency. It may be that attempts to provide military answers – deterrents – merely worsen the problem. Better not to have enemies in the first place, and not to make them.(even with interlocutors who may at times be difficult)

The decision to equip Australia with nuclear submarines fuelled with highly enriched uranium is both destabilising and proliferative even if technically within the letters of the NPT. The decision to go with HEU fuelled subs in particular opens a proliferation 'pandoras box', which article 'C' of the agreement tries to cover.

C. Cooperation under this Agreement shall require the application of International Atomic Energy Agency safeguards with respect to all nuclear material in all peaceful nuclear activities within the territory of Australia, under its jurisdiction, or carried out under its control anywhere. Implementation of the Agreement between Australia and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, signed at Vienna on July 10, 1974, and the Protocol Additional to the Agreement between Australia and the International Atomic Energy Agency for the Application of Safeguards in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, signed at Vienna on September 23, 1997,

shall be considered to fulfill this requirement.

<https://thebulletin.org/2021/09/the-new-australia-uk-and-us-nuclear-submarine-announcement-a-terrible-decision-for-the-nonproliferation-regime/>

<https://thebulletin.org/2021/09/the-australian-submarine-agreement-turning-nuclear-cooperation-upside-down/>

As the references above demonstrate, mere application of IAEA safeguards will not compensate for the erosion in global nonproliferation norms that will result from the implementation of the AUKUS agreement.

But IS Nuclear Really Better? Maybe not

The decision to 'go nuclear' with submarines has been justified on the supposed technical superiority of nuclear over conventional subs. However a look in detail at the real - world technical and operational characteristics of advanced conventional and nuclear subs shows clear technical superiorities on the part of advanced conventional submarines exactly where we are being told nuclear subs are superior - in the area of quietness and non-detectability. The technical case for nuclear over conventional submarines is not established.

Arguably, insufficient analysis, and little or no thought, has been given as to what are Australia's real security needs, and into whether submarines of any description fit into it.

Once more, this must be grist for JSCOT's mill!

I have been taken to task by one former naval captain (who supports nuclear submarines) for this statement. However, I think it is broadly true. The initial AUKUS announcement contains no specific rationale for making submarines the centrepiece of Australia's forward defence capability, stating merely that:

"..As the first initiative under AUKUS, recognising our common tradition as maritime democracies, we commit to a shared ambition to support Australia in acquiring nuclear-powered submarines for the Royal Australian Navy. Today, we embark on a trilateral effort of 18 months to seek an optimal pathway to deliver this capability. We will leverage expertise from the United States and the United Kingdom, building on the two countries' submarine programs to bring an Australian capability into service at the earliest achievable date.

The development of Australia's nuclear-powered submarines would be a joint endeavour between the three nations, with a focus on interoperability, commonality, and mutual benefit. Australia is committed to adhering to the highest standards for safeguards, transparency, verification, and accountancy measures to ensure the non-proliferation, safety, and security of nuclear material and technology. Australia remains committed to fulfilling all of its obligations as a

non-nuclear weapons state, including with the International Atomic Energy Agency. Our three nations are deeply committed to upholding our leadership on global non-proliferation.”

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/15/joint-leaders-statement-on-aukus/>

Note that nuclear submarines are merely **assumed** to be the most potent thing that can be given to an ally to bolster its defence capability. There is no reasoned argument as to why this might be so, no evaluation of the role of submarines or maritime capabilities more broadly, and no asking of which submarine really might fit our requirements, should we decide that subs are indeed important. Note also that all that is really committed to is a 'trilateral effort' to seek an 'optimal pathway' to deliver a nuclear submarine capability. Not an actual contract or statement of intent or halfway detailed roadmap to deliver such a capability. **It is central to JSCOTS mandate to have this debate.**

The 2020 Defence Strategic Update is even less informative:

“ 3.13 Australia’s naval and maritime forces are a vital element of our defence strategy. They must be able to project force at long range from Australia, operate across vast distances and work closely with civil maritime security agencies to protect our borders. The 2016 Defence White Paper laid the foundation for the largest recapitalisation of the Royal Australian Navy in modern history, underpinned by a continuous National Naval Shipbuilding Enterprise. This includes the acquisition of 12 Attack Class Submarines, nine Hunter Class Frigates and 12 Arafura Class Offshore Patrol Vessels.”

(2020 Defence Strategic Update p37)

The 12 Attack Class subs are of course now gone.

The 2020 Force Structure Plan (also p37) is if anything still less informative as to WHY submarines:

“ Undersea warfare

- 7. Under the 2016 Defence White Paper, Government set out extensive plans for investments in Australia’s undersea warfare capability to safeguard Australia’s maritime approaches and sea lines of communication. The Government remains committed to the delivery of a regionally superior submarine capability.*

This submarine will be fully interoperable with the United States to enhance Australia’s own deterrent, and contribute to regional anti-submarine warfare. Further priorities for investment in the undersea domain include persistent undersea surveillance; undersea combat; command, control, communications; support; sustainment; and training sub-systems.

8. *In addition to the acquisition and sustainment of 12 Australian-built Attack class submarines, the Government intends to continue with: Sustainment, capability enhancements, and life of type extensions to the Collins class submarines, which are halfway through their life, to maintain a capability advantage until the transition to the Attack class; • Continued upgrades to the submarine combat system and heavyweight torpedo; and • Facility and infrastructure upgrades to support the expanding submarine fleet.*
9. *To further safeguard Australia's undersea capability, the Government will also invest in an integrated undersea surveillance system (including exploration of optionally crewed and/or un-crewed surface systems and un-crewed undersea systems), an undersea signature management range, and expanded undersea warfare facilities and infrastructure."*

The force structure plan says WHAT Australia's intentions are with respect to subs and the maritime area generally. It doesn't say WHY subs might be important.

Subs might indeed be important. But there is no sense that their importance if it exists, has been thought through in any methodical way. Had such thought taken place, we would have a clearer rationale both for subs as the most expensive and complex single defence item, and more specifically for nuclear ones – or for NOT going for nuclear ones and going for an evolved Collins via Deep Blue Tech.

Shoebridge commented on the obsession with subs that:

"...we risk continuing a national obsession—seeing submarines as the one 'magical animal' defining the Australian Defence Force and our national security. That obsession has arguably done more harm than good over the 12 years since the 2009 defence white paper called for Australia to have not six Collins submarines, but 12 new ones. We've turned pursuing the perfect at the expense of the good into an art form."

and:

"The national conversation we should be having, though, is bigger and different to this, and it starts by putting the submarine obsession into perspective.

There are many ways to make Australia a harder military problem for potential adversaries and many of these also help Australia contribute to deterring a conflict in the Indo-Pacific, notably one begun by an aggressive China. Submarines are one contribution to that effort."

Shoebridge continued:

*"The priority for political debate and pressure on the government and Defence to deliver fast needs to move from the submarine program to everything else that the ADF can be equipped with over the next 1, 3, 5 and 10 years. This was raised by Liberal Senator and former general Jim Molan at the Senate estimates hearing in a brief but insightful exchange with Defence leaders. **Molan asked what effects submarines delivered that other capabilities couldn't.** The answer from Chief of Navy Michael Noonan was that the only one was*

'persistence'. The secretary, Greg Moriarty, and Chief of the ADF Angus Campbell also suggested that other capabilities could deliver those effects.'

The questions raised by Senator Jim Molan seemingly remain unanswered as everyone rubs the talisman of the 'magical animal', submarine, and the doubly magical, NUCLEAR submarine.

The decision leaves Australia with currently NO replacement program for the Collins Class subs.

As submission 34 p18 notes:

"...Finally, the Minister's statement that the "future is now" is at clear odds with the present program that will not equip the Submarine Force with the 12 submarines announced in the 2009 DWP for another 35 years. Indeed, with a capability gap looming, there is the distinct possibility that in the 2030s Australia will be left with a lesser submarine capability than now, at a time when the size of the Submarine Force will need to double in size."

Senator Wong noted in estimates that:

"...We've gone through what happens with LOTE and how much longer that gives you. I will come to capability shortly. It's inconceivable that we will get sufficient capability from this new capability early enough to deal with the current withdrawal of the Collins class. I'm happy to come to that, but let's leave that discussion because senators will want to talk about that. I'm asking whether or not the implications for the delay on new capability and the implications for jobs were made clear to the Prime Minister, Mr Morrison—that he was aware of that—before he went down this path?"

And in a further exchange, on the life-of-type extension of the Collins Class:

Senator WONG: Vice Admiral, you made a statement to the shipbuilding inquiry in answer to Senator Kitching:

'I don't write off the opportunity for us to further upgrade these submarines beyond that period of LOTE.'

That's the post-LOTE subs. And you confirmed that the Collins class fleet could 'potentially' be in the water in the 2050s. Can you explain what you meant by that?

Vice Adm. Noonan : The context of our discussion was: at the Senate Economics References Committee hearing, held Friday a week ago, we were talking about the life of the Collins class submarines post-LOTE.

We spoke about the schedule for the LOTE and what that meant in terms of the overall life of the submarine. We spoke about the first submarine, HMAS Collins—that it will enter the LOTE period in 2026 and will come out in 2028. That will give that particular submarine, the first of the submarines to be upgraded, an additional 10 years.

Senator WONG: Two years, then a further 10-year extension. That takes you to 2048 for the last one, right?

Vice Adm. Noonan : That's correct.

Senator WONG: So what do you mean by '2050s'? What are you envisaging there?

Vice Adm. Noonan : The context of my comments at the Senate Economics References Committee was: I was not ruling out or ruling in the potential for us to continue a capability upgrade program with those submarines, if required, to give them an additional life beyond the LOTE life.

Senator WONG: How would you do that?

Vice Adm. Noonan : We could potentially, if needed, continue to do another upgrade to the submarine that would be dependent on the work and the rate of effort that the submarines undertake over the next 20 years.

Senator WONG: So we nurse them through to the 2050s? Is that really our interim capability plan? Why has the secretary gone?

And:

Senator WONG: I got very clearly from ASC yesterday that you have not even asked them to consider this. You're talking about a potential extension, but the entity which is responsible for sustainment has not even been asked to consider it.

Vice Adm. Noonan : At the moment they are focused on the LOTE program as it will commence in 2026.

Senator WONG: What I don't understand is: we are going down the nuclear propulsion path for sound capability imperatives, right? But we are now saying that we will have an even older submarine, which, presumably, in terms of the vulnerabilities associated with their capability, will be—I will rephrase. Australia has chosen to explore the nuclear propulsion path because of a capability imperative—that is, diesel submarines, given the circumstances, don't have the capability required and potentially are more vulnerable. But you're suggesting that we would use even older submarines than the ones we were going to buy, because they weren't sufficiently capable, out to mid-century. How vulnerable will they be?

Vice Adm. Noonan : That's a hypothetical situation.

Senator WONG: No, it's not a hypothetical situation. Unless you can tell me there's another interim capability plan, that is exactly what is envisaged. You are flagging the possibility of further extension to the life of the Collins class—a good boat, but one that started being constructed when I started university or before—to almost the 2050s, in circumstances where your advice to government is: you don't want the new diesel submarines, because they're too vulnerable.

Vice Adm. Noonan : The life-of-type extension for the Collins class submarines was always going to happen with at least five boats. The decision to LOTE all six boats will ensure that, had we proceeded with the Attack class, we would have had a very capable Collins class submarine into the 2040s. That has not changed.

Senator WONG: The whole point, the gravamen of the government's proposition around nuclear propulsion, is that the diesel submarine is not sufficiently capable. But you're now saying to us the capability is going to be extended out to the 2050s. I noticed you said at the economic committee, 'The Prime Minister said that the boats would be in the water by the end of the next decade.' That's interesting language. Is that consistent with your advice to the Prime Minister?"

Deep Blue Tech or no Deep Blue Tech, Collins will be with us for a long time. Extended Collins may in fact be what we get if not by design then by default.

Once more, these arguments are core to JSCOTS duty to consider what is in Australia's national defense interest. I argue that acquisition of nuclear submarines is NOT in our defense interest.

The Submarine Decision and AUKUS

The following is largely geopolitics and thus it affects everything else, and JSCOT members should ponder it. Geopolitics is I believe well within JSCOTS mandate.

The decision to cancel the existing, well – established, contract with the French Naval Group for a diesel version of the Suffren class attack submarine has not met with universal acclaim, particularly from the French.

At the same time, the closely related decision to establish a new military/diplomatic grouping to be known as 'AUKUS' (Australia-UK-US) has also raised questions as to its geo-strategic impact, and contributed further to the deterioration of our relations with China, and possibly with Russia, with potentially catastrophic implications for Australia's national security and the safety of all Australians.

It has quite reasonably been suggested that the establishment of 'AUKUS' cements Australia into an 'Anglo-sphere' that is intrinsically limited in scope (how for example, does it relate to the 'quad' of India, Australia, Japan, US?), that excludes other nations that have strong Indo-Pacific interests and are allies (including France itself, now snubbed and smarting), and above all, that deepens confrontational attitudes in the region, especially with China.

It is by no means clear that the decision to substitute nuclear powered submarines is even the best decision on technical grounds, or that nuclear powered submarines

are necessarily superior in the respects that might be important to Australia and particularly in extreme stealth - to conventionally powered submarines, either the existing Collins class, the erstwhile projected French submarine, or to an evolutionary successor to Collins.(Deep Blue Tech)

Diplomatic Repercussions

The deterioration in parallel, of Australia's relations with not just France but the whole of the EU have been underlined by the delay by one month in EU-Australia trade talks.

<https://thehill.com/policy/international/574834-eu-australia-trade-talks-halted-after-submarine-deal-controversy-with>

And:

<https://www.theguardian.com/world/2021/oct/01/fears-australias-france-submarine-snub-could-scupper-closer-eu-economic-ties>

Also:

<https://www.sbs.com.au/news/eu-delays-free-trade-talks-with-australia-after-french-submarine-deal-scrapped/89985671-db0e-496b-a64f-51911ff773fe>

These above items suggest that the damage to Australia's diplomatic standing may be significant, and last some time, contributing to longer-term difficulties with establishing intimate trading relationships outside the 'anglo-sphere' and outside China, making Australia's friends a yet more circumscribed group of countries. **JSCOT should be concerned over these matters.**

Geopolitical Tensions and Australian National Security

(Why the decision makes Australia's national security worse not better)

(Surely a concern of JSCOT)

BOTH Australia's national security and our prosperity are highly dependent on our having a good relationship, or at least a tolerable one, with China. A bad relationship both threatens our trade and makes us a nuclear target - as the Chinese themselves in statement after statement are making very clear. Our 'extended deterrence' relationship with the US, and our hosting of US joint facilities worsens rather than improves the dynamic and 'paints a target on Australia's backside'. **These are matters of deep concern to JSCOT or should be.**

While one may legitimately disagree with Chinese policies on Tibet, Sinkiang, and Taiwan and with its claim, rejected in 2016, to a large section of the South China Sea, and over the origins of COVID, these geopolitical tensions could have been managed much better than they have been managed. 'Wolf-Warrior' diplomacy may be very bad diplomacy – indeed maybe not diplomacy at all – but the behavior for which we are responsible is not China's, but our own. Bad behavior is not necessarily answered by more bad behavior, confrontational attitudes are not best responded to by confrontation in return. If we think that Chinese wolf-warrior 'diplomacy' is bad diplomacy or just plain bad behavior we should rise to be

superior to it, not imitate it. And if Chinese diplomacy has 'shot itself in the foot', (as it probably has) Australia's diplomacy should not do likewise.

Responding to confrontational attitudes with more confrontational attitudes has clear negative consequences for Australia's national security. That the so-called 'joint facilities' (Pine Gap and NW Cape), as critical parts of US nuclear command and control and satellite surveillance, are high-priority nuclear targets (for Russia, China and the DPRK) has been the case since at least the 1980's, and most probably for as long as those facilities have existed.

However, a gratuitous worsening in relationships with a China that is significantly expanding its nuclear capabilities **potentially places Australian cities at risk**. The fielding of nuclear powered subs by Australia will always leave the suspicion that those vessels are not merely nuclear powered – that they *could* be nuclear armed, at least in the eyes of an opponent. It does Australia not the slightest good to protest that such arguments are irrational: The authority for what the Chinese security establishment thinks might be the case is themselves (and what they tell us), and not what we may think they 'ought' to think. The way to know what they think is to listen to what they tell us they think. We must take with the utmost seriousness what Victor Gao and Wang Yi say about what China does in fact think about AUKUS and Australia having nuclear submarines.(see below)

In fact, if the proposed vessels are able to launch cruise missiles as they presumably will be,(whether in the Virginia version or the Astute version) then there is simply no way to know exactly (from outside) what kind of warhead those cruise missiles may have. (Of course the same caution would apply to a conventional sub equipped with cruise missile armament – It would certainly also apply to the Astute class sub, should we choose to acquire that.) Naval facilities devoted to the new subs (Garden Island? Cockburn Sound? Osborne?) would thus seem likely to become targets. I note that Osborne becoming a nuclear target is not part of the terms of reference. It should have been.

That Australia is insistent that it does not have nuclear weapons and that the submarines are not equipped with them is frankly neither here nor there: What is here or there is what our potential opponents say, not what we say. If the Chinese think our subs MIGHT have nuclear weapons, or MIGHT have a nuclear capability, **that** is what will drive their nuclear targeting, not our expressions of injured innocence.

Thus, According to Victor Gao of the Centre for China and Globalization:

"Armed with nuclear submarines, Australia itself will be a target for possible nuclear attacks."

He asked 'Do you really want to be a target for a possible Nuclear war?'. Victor Gao is said to be influential with, and to represent the views of, the Chinese Government. That the subs themselves are supposedly not nuclear armed makes no difference. They will be treated as if they are.

<https://www.theaustralian.com.au/inquirer/subs-pact-makes-us-a-target-for-nuke-attack-gao-figure/news-story/b2bab6a6a154cfd7571d45b1e18442fa>

If we believe Victor Gao, AUKUS would appear to cement an Australian place in an 'anti-China' 'anglo-sphere' lineup, transforming our most important trading partner

into our greatest immediate – term security threat, not merely to remote 'joint facilities' but to cities where most of us live. In his words, do we 'really want to be a target for a possible nuclear war?' Again what matters to Australian national security is what people like Gao think, not what we think they 'OUGHT' to think.

Chinese Foreign Minister Wang Yi has said that AUKUS brings a hidden danger to regional peace, stability and international order. Foreign Ministry spokesman Hua Chun Ying has asked if Australia 'really cares' about improving relations with China.

<https://www.abc.net.au/news/2021-10-02/russia-concerned-about-aukus-and-nuclear-submarines/100509258>

We ignore statements like this at our peril. Yet we ARE ignoring them, and it IS at our peril. By doing so we are literally 'painting a nuclear target on Australia's backside', not to mention potentially on millions of Australian citizens in our cities.

Once more these are matters not strictly within the terms of reference. They should have been and senators should ponder them.

Russia also seems to be less than impressed by the possibility of Australia obtaining nuclear powered submarines. According to Russian deputy foreign minister Sergei Rybakov, speaking to Tass:

"We are also concerned about the ... partnership that will allow Australia, after 18 months of consultations and several years of attempts, to obtain nuclear-powered submarines in sufficient numbers to become one of the top five countries for this type of armaments," "This is a great challenge to the international nuclear non-proliferation regime."

<https://www.abc.net.au/news/2021-10-02/russia-concerned-about-aukus-and-nuclear-submarines/100509258>

and:

<https://www.presstv.ir/Detail/2021/10/01/667654/Russia-Aukus-Sergei-Ryabkov-Australian-Nuclear-submarines-Non-proliferation-system>

Rybakov's comments both underline the increased likelihood of Australian naval bases become nuclear targets, and once more, the proliferative implications of subs whose reactors run on HEU.

We now have No Submarine Program at All

The international fallout, both regionally and in terms of our relations with Europe is thus uniformly negative. At the same time it has been pointed out by many commentators that the decision to scrap an existing program takes us 'back to square 1', in terms of submarine acquisition. We are at a point that we were before deciding to replace the Collins Class with the French submarines. We have nothing specific in the pipeline. **The immediate term lack of a submarine program at all while it straddles a number of parliamentary committees, must concern JSCOT.**

Whatever progress had been made for good or ill in providing Australia with its own version of the French attack class will have been scrapped, and we no longer know whether, for example, we will acquire a version of the UK's 'Astute' class attack submarine, or the US Virginia class. And if as we repeatedly hear, the first of the new submarines won't arrive until 2040, they will, presumably, be obsolete before we get them. In Senate Hansard, under questioning from Penny Wong, it was noted that Attack-class related infrastructure work had been frozen, putting much of Osborne into limbo.

<https://www.theaustralian.com.au/commentary/yes-weve-cancelled-the-french-but-now-what/news-story/99b43465c2124c01a579672d8ef19349>

Former Prime Minister Turnbull notes that:

“Australia now has no new submarine program at all. We have cancelled the one we had with France and have a statement of intent with the UK and the US to examine the prospect of acquiring nuclear powered submarines.”

<https://www.malcolmturnbull.com.au/media/address-to-the-national-press-club-september-2021>

Is Nuclear the Best Stealth?

This is a core consideration relevant to whether we should be acquiring nuclear submarine technology at all, rather than as this author suggests, preceding as we should have all along with an evolved Collins. JSCOT must have this debate.

It has been suggested by some analysts that progress in ASW technology may make ALL submarines 'obsolete' by 2040, as the seas become increasingly transparent to new developments in sonar and AI. There is no evidence the Government has paid the slightest attention to this possibility.

<https://www.news.com.au/technology/innovation/military/australias-new-100b-submarine-could-be-a-waste-of-money/news-story/db8c482fe12bc6797df26d36478b1ec6>

and:

<https://www.smh.com.au/national/quantum-sensors-sea-drones-and-hypersonic-missiles-what-are-the-new-frontiers-of-war-20210923-p58ubz.html>

also

<https://www.defenceconnect.com.au/blog/8792-the-sub-story-no-one-wants-to-hear>

These advances in ASW technology may or may not make life unviable for subs. It will certainly make life harder. A major factor in submarine survival will be the capability to be ultra-stealthy. Nuclear submarines do not excel in this department, but in underwater speed and range.

These potential ASW developments tell far more against *nuclear* submarines than against the far more invisible and inaudible advanced conventional submarines with air-independent propulsion, that are small, more maneuverable, and much better

able to 'disappear' in the depths of the ocean than much larger and noisier nuclear subs.

A case in point is the ability of the Collins Class sub to evade a US naval task force including a US nuclear sub and carry out a 'kill' on a US destroyer in exercises in 2011.

<https://www.youtube.com/watch?v=d8Kv4rqR6RQ>

Also, the ability of the Swedish Gotland Class sub to 'sink' the USS Ronald Reagan:

<https://www.youtube.com/watch?v=L26RZdmQ2nE>

The common factor in these two videos is the ability of advanced conventional subs to go ultra-quiet in a way that nuclear submarines cannot. While nuclear subs have range and underwater speed, the prize for ultra-quietness seemingly goes to advanced non-nuclear subs. (Such as the Swedish Gotland class and our own Collins class) This is in part because nuclear subs are larger (hence more detectable), and in part because nuclear reactors must always be cooled even when not operating and this requires pumps to circulate water, which make noise. (and must run continually even dockside)

Nuclear subs also dump significant quantities of heat (and some radiation) into the water, which is detectable. As ASW technology improves, subs will find it harder and harder to hide – and nuclear subs will find it hardest. Australia may perhaps have picked a technology that by the time it is delivered will not deliver the stealth we thought it would, when less exotic technologies would have done so, and at a fraction of the cost. And it may be that nuclear submarine technology will simply take so long to deliver that by the time it does arrive, beyond schedule and over budget no doubt, it is obsolete.

Can we Build them at Osborne?

A major question is of course Australia's ability to actually build the subs at the Osborne facility in SA. (Term of ref (a) (b) (h) (i))

The surgery required to build a Virginia class sub at Osborne would indeed be radical. According to Marcus Hellyer of ASPI, who also noted that many of the purported advantages of nuclear might be 'speculative and possibly questionable',

"The change from Collins to the Virginias would be so great that virtually every other part of the support system would need to be replaced. The \$1.5 billion facilities bill for the joint strike fighter would likely pale in comparison,"

<https://indaily.com.au/opinion/2021/09/29/can-adelaides-shipyard-build-a-nuclear-sub-the-questions-pile-up/>

We have already noted the hansard according to which work on much of Osborne's new infrastructure was put into limbo on the announcement of the French subs cancellation.

Questions are being asked in Adelaide itself, by the AMWU, who would cover those who worked on the submarine shipyard, about the safety of a shipboard nuclear reactor. The question will be not merely its 'objective' safety, but the willingness of

those who would build the sub in Adelaide to do so – that is if the subs ARE to be built there at all.

<https://www.bloomberg.com/news/articles/2021-09-28/nuclear-submarines-put-workers-in-australia-s-shipbuilding-hub-adelaide-on-edge>

And it may well be concluded that the facility at Osborne does not in fact, have the ability to undertake the task of construction or partial construction of either a Virginia or an Astute class vessel at all. Osborne would have been more likely able to construct an evolutionary successor to Collins, without the radical reconstructions spoken of by Hellyer. (though Osborne might be able to construct the bow segment of an 'extended' Astute according to Chris Skinner - see below)

It has been suggested by former RAN commander Chris Skinner that rather than proceeding with the Virginia class, that work already done on the French option be re-directed to purchasing an Astute variant from the UK, built in an 'extension' of the current UK Astute program. Skinner suggests that 'forward sections' could be built at Osborne. Even this however is a significant down-grading of the role of Osborne.

<https://www.defenceconnect.com.au/maritime-antisub/8818-timely-realisation-of-the-australian-nuclear-submarine-force>

Skinner correctly points out that by 2045, with no other changes, the current Collins Class will have all been retired. (This seems to conflict with other analysts who suggest a Collins Class life extension to 2048).

<https://www.navalnews.com/naval-news/2021/09/collins-class-submarine-upgrade-will-extend-australias-non-nuclear-boats-to-2048/>

NOT Time to re-evaluate our Submarine Program?

Perhaps now was **not at all** an optimum time to re-evaluate Australia's entire submarine acquisition program, especially if doing so meant discarding what we had – even if not totally perfect – and ending up with nothing, but with considerable damage to our relationship both with China (Making a (bigger) geo-strategic threat out of our best customer) and with France (Making an enemy of a friend and ally).

Once more, these are arguments JSCOT needs to have, in considering the AUKUS agreement, since they underlie that agreement.

<https://www.pressenza.com/2021/09/how-aukus-may-damage-nato/>

This is especially so if the advantages of nuclear in stealth in particular, turn out to be illusory or nonexistent.

However if such a re-evaluation of our submarine programs were to take place, there is a clear hierarchy of questions that needed to be asked. None of them have seemingly been asked.

--Do we even need submarines at all? How exactly might they contribute to Australia's defence? Or is our money better spent elsewhere (e.g. on medium size surface vessels)? Clear and honest answers need to be obtained on this before any further decisions on subs are made. Even conventional subs are not cheap.

--If we DO decide we need submarines, why do we need them? How does the answer to that question feed into the actual capabilities we require, and how we station them and posture them? Do we need exotic hi-tech capabilities at all, or is what is required something more pedestrian – something we can build ourselves in SA without too much dependence on 'modular', 'black-box' overseas technologies that we can't even repair ourselves, let alone manufacture?

An evolutionary follow-on from the Collins Class, possibly with some input from the Swedes (as in the Collins class itself), might have been the best and most dependable bet. We are in any case going to have to extend Collins-Class life to and beyond 2048:

<https://www.navalnews.com/naval-news/2021/09/collins-class-submarine-upgrade-will-extend-australias-non-nuclear-boats-to-2048/>

Had we decided to extend the life of Collins, we might have gone the way of Deep Blue Tech. However, Deep Blue Tech discontinued the moment the news came that the French had been given the contract for the successor to Collins. The successor to Collins was not to be Collins in any form – notwithstanding that this sub has turned into arguably one of the worlds best conventional subs.

Deep Blue Tech

The ASC, which built the Collins submarine, was working on a plan to evolve the Collins class into a new class of submarine under the project header 'Deep Blue Tech'. Industry and the SA government were surprised at the decision by the Abbott and Turnbull governments to exclude SAAB and an ASC evolution of the Collins class into a new vessel from the competitive evaluation process. The decision to complete a Life of Type Extension (LOTE) to the Collins vessels raises questions about whether it was wise to walk away from the Deep Blue Tech initiative. ASCA understands the local industry content in Collins may be as high as 80%. Although the Naval Group Attack Class offering has floundered, the new AUKUS nuclear submarines class having taken its place, the government and the parliament would be well advised to revisit the prospect of an evolved Collins subject to operational considerations, timeframe, and budget. There are risks with the new nuclear submarine. Dealings with Naval Group were disadvantaged by the absence of an alternative design as a fallback. We should not repeat the mistake.

(Submission 37 to Economic Committee Australian Sovereign Capability Alliance p7)

The next-best and most dependable bet might have been to stick with the French project we actually already had. That too, had we stuck with it might have matured the way Collins actually did.

The third best option might have been, if we insisted on going nuclear, to swap to the French nuclear variant, giving us effectively a Suffren-class attack submarine. This would however, scotch the very real and important stealth advantages that conventional subs have in quiet mode. That raises the question of why, and whether we really do, need nuclear given the undoubted stealth advantages of advanced conventional subs with AIPS. It is worthy of note however, that the French nuclear variant of its attack class did not require high-enriched uranium,

running on LEU. The proliferative implications of subs running on HEU would thus have been absent, or less severe.

Needless to say this author emphatically does not support this option. It raises the entire panoply of arguments against nuclear technology that have not been covered in this submission but which remain potent.

And by this time, the options are getting less and less attractive.

The worst option is to do as we have now done, taking a nuclear option that unlike the French sub, uses HEU.

Conclusion

The submarine decision, especially within the context of the new 'AUKUS' grouping, but even taken on its own:

—Worsens rather than improves Australia's own national security, making us (more of) a nuclear target than we have ever been, and extending the targeting potentially from joint facilities to Australian cities and naval bases.

—Worsens rather than improves regional security, adding impetus to regional arms racing, and increasing the likelihood that other Governments may decide they would like to have submarines fuelled by HEU

—Leaves Australia currently with no replacement program for the Collins Class submarines, which will have to be operated up to 2050.

—Makes no sense even within its own restricted terms of reference because it does not offer a submarine with the best stealth, which comes from advanced conventional not nuclear.

—Requires a submarine that may not be possible to construct even in part at Osborne.

--Makes the continuance of the Osborne facility problematic

--Makes transfer of technology problematic

This decision should be re-visited.(and that is JSCOTS business)

We should start by asking whether Australia needs submarines at all and if so, exactly for what purpose, and subs with exactly what operational characteristics.

If the answer is that we do need a submarine, should probably choose an evolutionary follow-on to the Collins Class sub, designed in part on the basis of feedback from Collins Class personnel (Officers and crew), and in close cooperation with the Swedish. Critical to that design process must be actual operational experience with the Collins Class.

These conclusions have clear implications for all of the JSCOT terms of reference.

John Hallam

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