

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate Q879 - Future Submarine Intellectual Property - Patrick

Question reference number: 879

Senator: Rex Patrick

Type of question: Written

Date set by the committee for the return of answer: 23 August 2018

Question:

With reference to the Future Submarine Intellectual Property:

1. It is understood that the following was a requirement of the Future Submarine Competitive Evaluation Process (CEP) :

“The Commonwealth requires sufficient intellectual property ownership, licensing and access rights to operate, sustain and enhance the future submarines consistent with Australia's sovereign requirements is an operational and commercial imperative for the Future Submarine Program. The Commonwealth requires intellectual property rights in the future submarine (including the design and the technology employed in the submarines) sufficient to ensure that the Australian Government (and its nominated contractors in Australia and overseas) can operate, sustain and upgrade the submarines (including major upgrade, enhancement and system integration projects) for Defence purposes, without dependence on the Contractor or any significant operational or commercial restrictions or unanticipated costs.”

Given this: will the intellectual property agreement reached with Naval Group in the Strategic Partnering Agreement meet this CEP requirement? If not, where does the agreement fall short?

2. It is understood that the following was a requirement of the Future Submarine CEP:

“The Commonwealth requires access to the technical data for the future submarines (including in relation to the design and the technology employed in the submarines) sufficient to enable it to fully exercise its intellectual property rights to operate, sustain and upgrade the submarines (including major upgrade and enhancement projects) for Defence purposes”.

Given this: Will the intellectual property agreement reached with Naval Group in the Strategic Partnering Agreement meet this requirement? If not, where does the agreement fall short?

Answer:

The Strategic Partnering Agreement (SPA) meets the intent of the Commonwealth's requirements in the Future Submarine Competitive Evaluation Process in relation to Intellectual Property and Technical Data.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate Q897 - ASC and Naval Group - Patrick

Question reference number: 897

Senator: Rex Patrick

Type of question: Written

Date set by the committee for the return of answer: 30 August 2018

Question:

With reference to the following statements made on 29 May 2018 at estimates hearings of the Foreign Affairs Defence and Trade Legislation Committee (Hansard page 46 and 47):

Rear Admiral Sammut: It's been a long time since we built submarines in Australia. That is not to underrate what ASC achieved in building the Collins class ... It does recognise, however, that since delivery of the last Collins class, which took place in 2003, even before that date the build capabilities in Australia have atrophied. They've atrophied because we haven't been building submarines, and as the build of the last submarine progressed we have had to scale down ASC and make a deliberate decision, as the last submarine was built, to transform ASC from a build company to a sustainment company.

And also noting that on 7 June 2018 the following discussion took place at a Senate Inquiry hearing into the Future of Australia's naval shipbuilding industry:

Senator PATRICK: That's my shipbuilding question. That's very helpful. Mr Whiley, again, following up from your response to Senator Carr on the statements made by Mr Sammut, can you tell me how many people you still have in the company—I know you're one of them—that were around during the build of the Collins? Just a guess.

Mr Whiley: I would guess around about 300.

Senator PATRICK: That's quite significant.

Mr Whiley: Some are next door in shipbuilding. We have 120 or so people in shipbuilding that were actually around from the submarine days.

1. Given that Defence has an understanding of ASC's submarine build capability (albeit atrophied) and its need to understand the capabilities of its future submarine international design partner, how many people in Naval Group Australia have been former employees of a shipyard when that shipyard was involved in the build of a submarine, how many of those are foreign citizens.

2. What due diligence is being carried out by Defence to ensure that Naval Group Australia will have the requisite personnel experience moving forward whilst ensuring ASC's Collins sustainment work is not affected by any transfer of personnel to Naval Group.

3. Since the decision to make Naval Group (then DCNS) Australia's future submarine project international partner in April 2016, has ASC provided to Defence a dossier/pack/document (in any variant form - preliminary, draft, final, revised etc.) that outlines ASC's submarine build experience/capabilities as they may relate to the building of the future submarines or assisting Naval Group in respect of building Australia's future submarines; if so can the following be provided:

- a. the title of the dossier/pack/document, and
- b. the date it was provided to Defence and its status - for example preliminary, draft, final, revised etc.

Answer:

1. Naval Group Australia is planning the growth and training of its workforce for the construction of the Future Submarine in Australia in line with the schedule for delivery of the fleet. This workforce will naturally include a number of experienced personnel and will also be balanced to ensure appropriate succession planning. This will enhance the ability of the workforce to improve productivity through retained experience as submarines are delivered to the Navy.
2. Defence continues to review workforce planning by Naval Group and also engages with industry through regular meetings to plan wider workforce needs for the Submarine Enterprise to ensure that the requirements of the Future Submarine Program and Collins sustainment continue to be addressed.
3. ASC has provided a number of commercially-sensitive documents to Defence.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate Q948 - Naval Shipbuilding - SME's - Patrick

Question reference number: 948

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 5 October 2018

Question:

With reference to Naval Shipbuilding:

1. Has the Government considered introducing a policy similar to the 'Small Business Set Aside' legislation that applies to military industry contracts in the USA.
2. The Naval Shipbuilding Plan states that by 2026 over 5200 workers (with more jobs throughout the supply chain) will be needed across the shipbuilding program. This must be based on modelling built around a specific quantum of work for the naval industry programs being conducted in Australia. What is the percentage work used in this modelling.
3. Has the Government undertaken an economics and industry/export development benefits study of maximising Australian industry involvement in distributed Australian companies, especially hundreds of small to medium sized enterprises (SMEs), all around Australia.
4. Has the Commonwealth mandated a unified standard for the 'Digital Shipyard' system across all projects so that Australian suppliers, especially SMEs and regional sub-assembly manufacturers, can interface efficiently with the various overseas primes for the major and minor naval industry programs; if so, which system, and if not, why not.

Answer:

1. Since 1 July 2015, there has been mandated targets for purchasing from indigenous enterprises and set-aside for some Commonwealth contracts to indigenous businesses under the Indigenous Procurement Policy. This policy applies to all non-corporate Commonwealth entities subject to the Commonwealth Procurement Rules.
2. Workforce estimates provided in the Naval Shipbuilding Plan are based on earlier analysis and studies conducted on behalf of Defence, including the RAND Corporation's report titled *Australia's Naval Shipbuilding Enterprise: Preparing for the 21st Century*. Assumptions underpinning this earlier analysis are being further refined using data now available following source selection for each major shipbuilding program.

3. Defence aims to maximise Australian industry involvement in all procurement activities. The Government's record \$200 billion investment in defence capability is undoubtedly creating and sustaining local jobs, and contributing to the wider Australian economy. Aside from the jobs created directly and indirectly from each major project, a strong defence industry draws on and benefits the entire economy including sectors as diverse as education and construction.
4. Where practical, Defence is working with industry to drive towards common standards for software design tools and interfaces. In doing so, consideration must be given to the cost and schedule implications.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate Q951 - SEA5000 - BAE - Patrick

Question reference number: 951

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 5 October 2018

Question:

With reference to SEA 5000:

1. How does the project intend to enforce its policy statements so that BAE Systems should maximise Australian industry involvement in the supply of manufactured components and systems to the Future Frigate Program given that the hull fabrication, assembly, outfitting, and testing & commissioning of Future Frigates built in Australia is usually less than one-third of the vessel's acquisition price.
2. Given the importance of distributing the fabrication and outfit of much of the Future Frigates sub-assembly work to Australian small and medium enterprises (SMEs), has the Government ensured that BAE has plans in place for the preparation of accurate design and manufacturing data and subcontract packages for these SMEs, and technology transfer, and for the pre-qualification of these SMEs; if so, can details be provided.
3. BAE Systems already has a well-established supply chain in the UK and Europe that currently supplies a large percentage of their Type 26 Global Combat Ship value. How will the Government ensure that BAE Systems has allowed enough time and engineering/procurement resources to re-work their detailed engineering and production plans and to modify specifications and interfaces such that Australian companies, especially SMEs, are able to supply most of the materials, equipment, components and systems in the Type 26s.
4. Will BAE Systems be contracted on a cost-reimbursable basis; if so, how does the Government plan to achieve value-for-money and international competitiveness and what other types of contract pricing arrangement did the contenders for the Future Frigates program offer given that previous successful programs have utilised fixed priced contracts.

5. What contractual obligations will be in place to ensure Australian industry involvement in the manufacture of the components within the Future Frigates, in addition to just the assembly and outfit of the vessels in Australia.

Answer:

Defence does not agree with the premise that the Australian share of the Hunter Class Frigate program will be in the area of one third of the vessels' acquisition price. The Hunter class Frigate Program is expecting to improve upon the 60 per cent Australian industry content achieved with the Air Warfare Destroyer program.

Under the Australian Industry Capability Program all tenderers for material procurements of \$20 million and above must demonstrate and present clear evidence of how they have maximised opportunity for Australian industry; how they will develop Australian industry; and how they will contribute to Innovation, Research and Development. All work to be conducted by Australian industry is included in the Australian Industry Capability Plan as a Local Industry Activity. Defence works assiduously during the contract negotiation phase to optimise Australian industry involvement and for knowledge transfer opportunities whilst ensuring adherence to schedule, cost and capability requirements. Once a contract is signed the Australian Industry Capability Plan becomes a contracted deliverable.

BAE Systems and Defence are committed to maximising Australian industry capability. BAE Systems will invest human resources, intellectual property, know-how and information technology in ASC Shipbuilding, creating over the life of the Hunter Class build program a world class naval ship designer and builder. By bringing BAE Systems together with ASC Shipbuilding, the Government is leveraging the existing Australian shipbuilding capability in South Australia and ensuring the transition of the existing workforce occurs with the least disruption to both the workers and our programs. BAE Systems has developed an Australian Industry Capability Strategy to maximise opportunities for small to medium Australian suppliers in both the build and sustainment phases. This includes plans for the inclusion of Australian industry in existing supply chains and exploring opportunities to integrate Australian suppliers into global supply chains.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q990 - Patrick

Question reference number: 990

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. What is the total expenditure for the Offshore Patrol Vessel Program to date?
 - a. how much of this money has gone to Lüerssen, and
 - b. who are the other significant Commonwealth payees to date.
2. What is the breakdown of total expenditure between foreign and local entities.
3. What is the target percentage for local content.
4. Can a list of future project milestones and dates be provided.
5. Can a list be provided of Australian companies that have successfully made it into Lüerssen's global supply chain (i.e. have sold components into other Lüerssen programs).

Answer:

1. \$154.4 million from First Pass to 31 October 2018.
 - 1a. \$112.6 million to 31 October 2018 has been paid to Luerssen Australia.
 - 1b. The other significant Commonwealth payees to 31 October 2018 are:
Fassmer, FR.GMBH & Co Schiffs-Und
Nova Defence Pty Ltd.
Damen Shipyards Gorinchem
2. Expenditure at 31 October 2018 against source currencies:
Local: \$76.8 million.
Foreign: \$77.6 million.
3. 60 percent across the life of the project.

4. Future project milestones and dates are as follows:

Commence construction Ship 1: November 2018 – Achieved
(South Australia)

Commence construction Ship 2: Q3 2019
(South Australia)

Commence construction Ship 3: Q2 2020
(Western Australia)

Delivery of Ship 1: early 2022

Delivery of Ship 2: late 2022

Delivery of Ship 3: early 2023

5. Lürssen Australia have advised that to date, 14 Australian companies are involved in Lürssen's global supply chain.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q991 - Future Frigate Program - Patrick

Question reference number: 991

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. What is the total expenditure for the Future Frigate Program to date?
 - a. how much of this money has gone to BAE Systems? and
 - b. who are the other significant Commonwealth payees to date?
2. What is the breakdown of total expenditure between foreign and local entities?
3. What is the target percentage for local content?
4. Can a list of future project milestones and dates be provided?
5. Can a list be provided of Australian companies that have successfully made it into BAE Systems' global supply chain? (i.e. have sold components into other BAE Systems shipbuilding programs).
6. Has the Government been in discussions with BAE Systems to try and secure Australian content in the Canadian Surface Combatant Program? If so, can details be provided of the discussion dates and outcomes.

Answer:

1. \$282.8 million from First Pass to 31 October 2018.
 - 1a. \$29.7 million as at 31 October 2018.
 - 1b. The other significant Commonwealth payees to 31 October 2018 are:
CEA Technologies
Deloitte Touche Tohmatsu Australia
Fincantieri
Jacobs Australia
Navantia
Odense Maritime Technology
Saab Australia
2. Expenditure to 31 October 2018 against source currencies:
Local: \$156.2 million
Foreign: \$126.6 million
3. BAE estimates that the target percent for local content is 65 to 70 per cent across the life of the project.

4. The Head Contract was signed on 14 December 2018.

Prototype commencement: late 2020
Construction commencement Ship 1: .. late 2022
Construction commencement Ship 2: .. late 2025
Construction commencement Ship 3: .. mid 2028
Delivery Ship 1: late 2020s
Delivery Ship 2: early 2030s
Delivery Ship 3: mid 2030s

5. BAE Systems advise they have pre-qualified over 700 Australian companies for potential involvement in BAE Systems' global supply chain.

6. The Minister for Defence has discussed a number of times with BAE Systems, including Australian content of its Canadian program.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Components - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. Are there any component/equipment areas where Defence or Naval Group are of the view that create too high a risk profile for use of Australian suppliers.

Answer:

1. As part of the procurement process under the design and Mobilisation Contract, Naval Group is required to identify and report to the Commonwealth on gaps in industry capabilities required to be established in Australia to provide the sovereign operation and sustainment of each system and equipment being provided within the Attack class capability. To date, Naval Group has not reported any such gaps to the Commonwealth.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Expenditure - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

With reference to the Future Submarine Program:

1. What is the total expenditure for the Future Submarine Program to date and:

- a. how much of this money has gone to Naval Group (France);
- b. how much of this money has gone to Naval Group (Australia);
- c. how much of this money has gone to Lockheed Martin (US);
- d. how much of this money has gone to Lockheed Martin (Australia); and
- e. who are the other significant Commonwealth payees to date.

2. What is the breakdown of total expenditure between foreign and local entities:

- a. for the platform;
- b. for the Combat System; and
- c. for the Weapon Systems.

Answer:

1. The total expenditure for the Future Submarine Program from November 2016 to 31 October 2018 is \$554.9 million:

- a. Naval Group France - \$203.4 million
- b. Naval Group Australia - \$60.3 million
- c. Lockheed Martin US - \$25.5 million
- d. Lockheed Martin Australia - \$43.6 million
- e. ASC Pty Ltd - \$27.7 million
Omni Executive Pty Ltd - \$13.1 million
Clayton Utz - \$9.2 million
US Government via Foreign Military Sales - \$9 million
Program support contracts - \$94.7 million
Science and technology support - \$52.7 million
ICT support contracts - \$15.7 million

2. As an indication, the breakdown of expenditure by source currency from November 2016 to 31 October 2018 (in Australia dollar equivalent terms) is:
Foreign: \$228.9 million and Local: \$103.9 million.
- a. for the Platform;
 - Foreign (EURO) – \$203.4 million (AUD Equivalent)
 - Local (AUD) – \$60.3 million
 - b. for the Combat System;
 - Foreign (USD) – \$25.5 million (AUD Equivalent)
 - Local (AUD) – \$43.6 million
 - c. for the Weapon Systems;
 - Foreign – No Spend to date
 - Local – No Spend to date

At this early stage of the Program, the majority of costs relate to human effort expended in concept design engineering, contract development and early engagement with industry. As the design know how and know why is transferred to Australia there will be a significant change in numbers of contracts and total value awarded in Australia.

SENATE

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Local Content - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. What is the target percentage for local content:
 - a. for the platform;
 - b. for the Combat Systemc. for the Weapon Systems.

Answer:

A key objective of the Future Submarine Program is to maximise Australian Industry involvement without unduly compromising capability, cost or schedule. Early design work remains underway, guided by this objective.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Naval Group's Supply Chain - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. Can a list be provided of Australian companies that have successfully made it into Naval Group's global supply chain (i.e. have sold components into other Naval Group's programs).

Answer:

Under oversight of the Future Submarine Program Office, Naval Group is responsible for establishing the Attack class supply chain. The selection of Australian companies for the procurement of equipment or systems that will form part of the Attack class will commence from 2019.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Program Costs - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

The Future Submarine Program is a \$50B (constant dollar) program. What is the rough order breakdown of costs across each of the following:

- a. the design and construction of the Future Submarine fleet;
- b. a technology upgrade;
- c. design and integration of the combat system in all submarines;
- d. investment in science and technology;
- e. the delivery of logistic support (including documentation and initial sparring);
- f. design and development of submarine construction yard and other;
- g. land-based facilities; and
- h. program contingency (total only, not broken down against the above line items).

Answer:

The acquisition cost of the Attack class capability is estimated at \$50 billion (constant dollars) which includes:

- cost of designing and constructing the fleet of 12 submarines,
- cost of designing and integrating the combat system in each of the 12 submarines,
- the investment in science and technology that will be required,
- the delivery of logistic support (including documentation and initial sparring), and
- the design and construction of the submarine yard and other land-based facilities (for example, wharves, training centre, crew facilities).

The acquisition estimate for the Attack class also reflects consideration of building the fleet in batches, including technology upgrades.

In order to preserve the commercial position of the Commonwealth, the Department of Defence would be pleased to offer a private briefing to the Committee on the breakdown of the global budget for the Attack class Program.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Schedule - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. What is the schedule delivery date for the:
 - a. Industry Sovereign Sustainment Assurance Plan;
 - b. Research and Development Management Plan; and
 - c. Australian Subsidiary Capability Realisation Plan.

Answer:

1. a and c.

The due date for the final Industry Sovereign Sustainment Assurance Plan and the Australian Subsidiary Capability Realisation Plan is 31 May 2019.

b.

A Research and Development Management Plan will only be developed should there be a requirement for Naval Group to undertake Research and Development on behalf of the Commonwealth. There is no such requirement at this time.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Service - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

The Naval Shipbuilding Plan states that the date the first future submarine will be “entering service” is 2032 (see figure 2.2 and 7.1) and the presentation provided to the 2018 Submarine Institute of Australia Conference by RADM Sammut notes that the first future submarine will be “entering service” in 2035 (see slide 8):

- a. when did the change of date of the first submarine “entering service” occur;
- b. when was the minister advised of this delay;
- c. what is the impact of this delay on the project cost; and
- d. what is the impact of this delay on the cost of retaining Collins.

Answer:

There has been no change in the schedule for the delivery of the Attack class.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Staffing - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. How many people does Naval Group (or Naval Group Australia) employ in Australia on the Future Submarine Program?
2. How many people will Naval Group (or Naval Group Australia) employ in Australia on the Future Submarine Program at its peak?
3. How many full-time-equivalent (FTE) personnel work for the Future Submarine Program:
 - a. in Australia, detailing employees v contractors and consultants;
 - b. in France detailing employees v contractors and consultants; and
 - c. in the US detailing employees v contractors and consultants.

Answer:

1. As at the end of September 2018 Naval Group Australia employed 100 people in Australia on the Future Submarine Program.
2. Based on current planning Naval Group Australia expects to employ approximately 2000 people in the early 2030s when the program is at its peak.
3. As at 14 November 2018 the following personnel work for the Future Submarine Program:

	APS FTE	Contractor / Consultant
a. Australia	69.67	142
b. France	17.95	14
c. US	0	0

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q992 - Suppliers - Patrick

Question reference number: 992

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. Who are the proposed suppliers of the DC Switchboards?
 - a. will the Switchboards be built/assembled in Australia; if not, why not;
 - b. when is it anticipated contracts will be issued for the Future Submarine DC Switchboards;
 - c. what are the milestone and milestone dates in the DC Switchboards development/procurement.

2. Who are the proposed suppliers of the Diesel Generators?
 - a. will the diesels be built/assembled in Australia; if not, why not;
 - b. when is it anticipated contracts will be issued for the Future Submarine diesels; and
 - c. what are the milestone and milestone dates in the diesel development/procurement.

3. Who are the proposed suppliers of the Weapon Discharge System?
 - a. what broad technology has been selected for the discharge system (e.g. Air turbine Pump, ram arrangement etc);
 - b. will the Weapon Discharge System be built/assembled in Australia; if not, why not;
 - c. when is it anticipated contracts will be issued for the Future Submarine Weapon Discharge System; and
 - d. what are the milestone and milestone dates in the discharge system development/procurement.

Answer:

Defence is working with Naval Group to select suppliers for key items of equipment for the Attack class Submarine including the main motor, DC switchboards, diesel generators and weapon discharge systems, however contracts between Naval Group and key suppliers are not yet in place. While it is acknowledged that Naval Group has existing partners within their global supply chain, under arrangements with Naval Group, decisions regarding the selection of companies to work on the Attack class Submarine Program will be presented to the Commonwealth for final approval.

The Commonwealth requires key subcontractors of Naval Group to make direct commitments to the Commonwealth on Australian industry involvement through the submission of their own Australian Industry Capability Plans. It would be premature to discuss details of key equipment selections before commercial arrangements are finalised.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q993 - Future Sub Command and Control System - Patrick

Question reference number: 993

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. With reference to the Future Submarine Command and Control System–AN/BYG: Since Australia became a partner in the AN/BYG-1 Command and Control System, how many Australian entities have:

- a. nominated for the Advanced Processor Build (APB) program;
- b. successfully made it to stage one of the APB Program;
- c. successfully made it to stage two of the APB Program;
- d. successfully made it to stage three of the APB Program;
- e. successfully made it to stage four of the APB Program; and
- f. have a capability deployed on US Navy submarines.

2. Will Defence continue to assist Australian companies to participate in the APB program.

3. What has been the total cost of the AN/BYG combat system program to date for Collins, including acquisition, updates and sustainment.

4. What is the most recent hardware and software baseline deployed on Collins.

5. What is the most recent hardware and software baseline deployed on US submarines.

Answer:

1. a. 8

b. 5

c. 3

d. 3

e. 3

f. Defence can not comment on the operational capability of US Navy submarines.

2. Yes.

3. The cost to procure and install AN/BYG-1 for all six Collins Submarines is \$199 million. The costs of TI/APB updates and sustainment are not separately accounted for, these are included in the AN/BYG-1 sustainment costs. The total AN/BYG-1 sustainment cost to 30 June 2018 is \$162 million.

4 - 5.

In general terms, the most recent AN/BYG-1 hardware and software baselines installed in US and Australian submarines are similar due to the cooperative core system development, design and production. Defence does not comment publicly on the detailed configuration status of Collins submarines. Defence can not comment on the operational capability of US Navy submarines.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q994 - Future Submarine Combat System Procurement - Patrick

Question reference number: 994

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. When have/will Requests for Information for the following systems been/be released:
 - a. Sonar Systems;
 - b. ESM Systems;
 - c. Optical and Optronic Systems;
 - d. Navigation Systems;
 - e. Environmental Measurement Systems; and
 - f. Command and Control Systems.
2. What tender mechanism (as per the Commonwealth Procurement Rules) will be used for procurement of these sub-systems.
3. Can details be provided of Australian companies that have been contracted by the Commonwealth in respect of the Future Submarine Combat System, including amounts.
4. Can details be provided of Australian companies that have been contracted by Lockheed Martin in respect of the Future Submarine Combat System.
5. Can a list be provided of Australian companies that have been successfully made it into Lockheed Martin global supply chain (i.e. have sold components into other Lockheed Martin combat system programs) .
6. How many people does Lockheed Martin or Lockheed Martin Australia employ in Australia on the Future Submarine Program.
7. How many people will Lockheed Martin or Lockheed Martin Australia employ in Australia on the Future Submarine Program at its peak.

Answer:

1. Lockheed Martin Australia (LMA) has released Requests for Quote (RFQ) to industry for the Combat System subsystems as follows:
 - a. Sonar Systems –
 - Bow Array 2 March 2018;
 - Flank Array 2 March 2018;
 - Towed Array 2 March 2018; and
 - Active Intercept Subsystem 3 July 2018;
 - b. ESM Systems –
 - ESM/EW 19 April 18;
 - c. Optical and Optronics Systems –
 - Optronics 3 April 2018;
 - d. Navigation Systems –
 - Navigation Subsystem Radar Component 3 April 2018;
 - Navigation Subsystem Data Distribution Component 3 July 2018
 - e. Environmental Measurement Systems –
 - There is no such subsystem and therefore no RFQ released (captured in RFQs for other subsystems)
 - f. Command and Control Systems –
 - Integrated Submarine Communication Subsystem Inboard 17 August 2018
2. Under the Design, Build and Integration Contract, LMA is responsible for managing the procurement of the subsystems of the Combat System for the Future Submarine under procurement strategies approved by the Commonwealth.
3. The Design Build and Integration Contract (DBIC) between the Commonwealth and LMA was signed on 12 January 2018. The Design Work Scope within the DBIC covers over \$700 million of work to 2022, including the design of the Combat System and procurement activities to select subsystem and component suppliers. This contract superseded the Initial Services Contract with LMA signed on 17 November 2016.
4. LMA has not yet awarded a subcontract for a subsystem for the Future Submarine Combat System.
5. LMA has not yet awarded a subcontract for a subsystem for the Future Submarine Combat System. Under oversight of the Future Submarine Program Office, LMA is responsible for establishing the Future Submarine supply chain.

The extent to which companies enter LMA's global supply chain is determined by LMA.
6. LMA employs 176 staff as of 31 October 2018.
7. LMA is expected to have 220 FTE employees at its peak.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q994 - Future Submarine Combat System - Patrick

Question reference number: 994

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. Is the plan for the Collins AN/BYG-1 hardware and software baselines to be rolled over to the Future Submarine; if not, can details of the plan be provided.
2. Can details of all future Combat System milestones be provided.
3. Can details of activities that will take place in the next 24 months be provided.

Answer:

1.

AN/BYG-1 will continue with progressive spiral development through the Armament Cooperative Project with the United States. This collaborative project will produce AN/BYG-1 variants for both Collins and Future submarines.

2-3.

The Combat System successfully completed Systems Requirement Review September 2018. Additional milestones are listed below:

- System Definition Review (Combat System) March 2019
- Preliminary Design Review (Combat System) December 2019
- Operation of the Combat System Physical Integration Facility – scheduled to commence in 2022/23.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 12 Nov 2018 - Q995 - Future Submarine Weapon System - Patrick

Question reference number: 995

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. Is the plan for the Collins weapon inventory (current torpedoes, missiles and mines) to be transferred across the Future Submarine Program.
2. Can details of all future Weapon System milestones be provided.
3. Can details of activities that will take place in the next 24 months be provided.
4. What tender mechanism (as per the Commonwealth Procurement Rules) will be used for procurement of these systems.
5. Can details be provided of Australian companies that have been contracted by the Commonwealth in respect of the Future Submarine Weapon System (including amounts).
6. Can details be provided of overseas companies that have been contracted by the Commonwealth in respect of the Future Submarine Combat System.

The 2009 Defence White Paper stated the following:

‘The Government places a priority on broadening our strategic strike options, which will occur through the acquisition of maritime-based land-attack cruise missiles. These missiles will be fitted to the AWD, Future Frigate and Future Submarine. Defence will fit the necessary control and firing systems to the AWD as an early enhancement. The incorporation of a land-attack cruise missile capability will be integral to the design and construction of the Future Frigate and Future Submarine. We will not seek to retrofit this capability to the Collins submarine fleet’.

7. Noting this, are the land-attack cruise missiles still under consideration for the future submarine program; if so, what missiles are under consideration (e.g. Harpoon, Tomahawk, MDCN SCALP Naval Missiles etc).

Answer:

1-5 & 7.

As stated in the 2016 Defence White Paper, the Mark 48 heavyweight torpedo, employed by Collins class submarines, has been selected as the main armament for the Future Submarine.

The procurement and sustainment of the full suite of weapons and deployable systems for the Future Submarine Program will be developed by project SEA1000 Phase 3. The SEA1000 Phase 3 project is unapproved, as such, the full project scope, execution, procurement and industry solicitation plans regarding the wider weapons and deployable systems remain under development at this time.

6.

The procurement of suppliers for the Future Submarine Combat System by the Combat System Integrator, Lockheed Martin Australia, remains underway. No contracts are currently in place.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate—12 Nov 2018—Q1000—Mine Warfare—Patrick

Question reference number: 1000

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 12 December 2018

Question:

1. What is the Royal Australian Navy's (RAN) current mine warfare order of battle (ie details of ships, unmanned systems, dive teams, capabilities deployed on warships etc). Where a capability is owned or operated by Defence Science and Technology Group, please indicate this.

2. What is the RAN's planned mine warfare order of battle for:

- a. 2020;
- b. 2025; and
- c. 2030.

3. Can confirmation be provided that it is Navy's intention to decommission and dispose of two Huon Class Minehunters; if so, what has changed in our strategic circumstances since we decided to acquire six.

4. Can confirmation be provided that the Navy is able to conduct MCM operations in at least two of our priority ports simultaneously.

5. What is the maritime commander's expectation of availability for the Huon Class Minehunters (e.g. W available for deployment, X in work up, Y in maintenance and Z in refit).

6. What is the status of SEA 1179 and specifically:

- a. what is the proposed budget; and
- b. what is the proposed schedule moving forward.

7. What is the status of SEA 1778. (What has been acquired: what has commissioned into service, what is outstanding etc.) and specifically:

- a. how much has been spent on SEA 1778 to date;
- b. what was the original SEA 1778 budget (eg original Defence Capability Plan) ;
- c. what was the original SEA 1778 IOC schedule (eg original Defence Capability Plan) ;
- d. what ships are designated and fitted to carry the SEA 1778 capability; and
- e. how will the SEA 1778 capability be deployed and inserted into a mine threat environment.

8. What is the status of SEA 1770. (What has been acquired; what has commissioned into service, and what is outstanding etc.) and specifically:

- a. how much has been spent on SEA 1770 to date;
- b. what was the original SEA 1770 budget (eg original Defence Capability Plan); and
- c. what was the original SEA 1770 IOC schedule (eg original Defence Capability Plan) .

9. In respect of the Navy's Unmanned Systems team at HMAS Waterhen:

- a. how many personnel are posted to the team; and
- b. what unmanned systems are allocated to the team

10. Can an update be provided to Senate QON Q96 (Force Posture Review) asked at Additional Estimates in February 2012 by Senator David Johnston

Answer:

1.

Navy's mine countermeasures (MCM) capability comprises:

- Minewarfare and Clearance Diving Squadron command element (based in Sydney).
- Four Huon class Mine Hunter Coastal (MHC) vessels (based in Sydney).
- Two Clearance Diving Teams (CDT1 based in Sydney and CDT4 based in WA).
- Mine Warfare Team 16 (based in Sydney).
- Influence minesweeping equipment.

As required, the Defence Science and Technology Group lends equipment including autonomous systems to Navy for training purposes. Such equipment is not yet part of RAN inventory.

2a.

The planned order of battle for 2020 remains per answer to Question 1 with the addition of elements of SEA 1778 Phase 1 Deployable Mine Counter Measures autonomous and remote systems being transitioned into service.

2b.

The planned order of battle for 2025 will depend on Government's decision on the upgrade of the in-service Huon Class Mine Hunter Coastal vessels under SEA 1179 Phase 1 - MHC Service Life Extension and Capability Assurance Program. The advancement in technology of autonomous systems used in the mine countermeasure role has advanced quicker than the 2016 Defence White Paper predicted. These systems are being used by the United States Navy and the Royal Navy. As a consequence the option to extend the Huon Class vessels or further invest in deployable systems is being investigated by Defence with the assistance of our allied partners, industry, academia and Defence Science and Technology Group.

2c.

The 2016 Defence White Paper envisaged in the 2030s a combination of manned and unmanned / autonomous mine warfare systems:

- Mine warfare and Clearance Diving Squadron including clearance diving teams
- A number of multi-mission vessels, delivered by Project SEA 1180 Phase 2 (Future MCM and Rapid Environmental Assessment Vessel), fitted with deployable autonomous and remote systems.

3.

Navy decommissioned Huon class minehunters HMA Ships *Hawkesbury* and *Norman* on 31 October 2018 in preparation for disposal. In 2009, Government placed two vessels into extended readiness as reserve in case of a high threat mine contingency. The 2016 Force Structure Review and Defence White Paper 2016 outlined Defence's strategic circumstances and detailed plans for the Navy's mine warfare capability.

In February 2017, Government agreed at First Pass that the two extended readiness vessels would be disposed of as part of the SEA 1179 Phase 1 - Minehunter Coastal Service Life Extension and Capability Assurance Program.

The advancement in technology of autonomous systems used in the mine countermeasure role has advanced quicker than the 2016 Defence White Paper predicted. As a consequence the option to extend the Huon Class vessels or further invest in deployable systems is being investigated by Defence with the assistance of our allied partners, industry, academia and Defence Science and Technology Group. A decision on the MCM solution will be considered by Government at Second Pass.

4.

Navy's current MCM capability meets all directed levels of operational capability requirements of the Chief of Defence Force (CDF). Navy is appropriately resourced to meet the CDF requirements, including conduct of MCM operations through a combination of platforms, systems and divers.

5.

Navy's upkeep cycle involves two Mine Hunter Coastal vessels available for deployment, one vessel undergoing maintenance, and the fourth vessel will either be in short-duration maintenance, working up in preparation to undertake operations or be ready to proceed on operations. Of note, Navy currently has two MHCs deployed to North East Asia, with a third available for national tasking.

6.

SEA 1179 Phase 1 (SEA 1179-1) achieved First Pass approval in February 2017 and issued a single-supplier limited tenure Request For Tender (RFT) to Thales Australia (Thales) in July 2017. Thales responded to the RFT in February 2018.

Defence continues to work with Thales during the initial risk reduction phase of the project to refine the scope, design, cost and risks of the project. In addition Navy is investigating alternative option to deliver the MCM effect noting the advancement in technology of autonomous systems used in the mine counter measure role has advanced quicker than the 2016 Defence White Paper predicted. A decision on the MCM solution will be considered by Government at Second Pass.

6a.

The 2016 Integrated Investment Program budget for SEA1179 Phase 1 is between \$1bn-\$2bn.

6b.

Defence is expected to complete the risk reduction activity with Thales Australia and other stakeholders by mid 2019. Government will consider project Second Pass in FY 2019-20 including alternate options to deliver the MCM capability.

7.

Delivery of the first equipment as part of a phased delivery and introduction into service is scheduled for Q1 2019.

The systems to be phased into service are over the following two years are:

- Command Initiated Detonation Systems (CIDS)
- Clandestine Swimmer Delivery Systems
- 38ft Mine Countermeasures Support Boats
- Steber 38 Unmanned Surface Vessels
- Seafox expendable mine neutralisation systems
- Bluefin 9 Autonomous Underwater Vehicles Man-Portable
- Bluefin 12 Autonomous Underwater Vehicles

7a.

As of 31 October 2018, a total of approximately \$34 million has been spent on SEA 1778-1.

7b.

In the 2009 Defence Capability Plan, SEA 1778-1 was allocated between \$100 – \$500 million (towards the lower end of the band).

7c.

The 2009 Defence Capability Plan IOC schedule was 2015-2017.

7d.

SEA 1778–1 systems will be deployed from the Canberra Class Landing Helicopter Dock (LHD) HMA ships *Adelaide* and *Canberra*, and the Bay Class Landing Ship (LSA) HMAS *Choules*. Elements of the SEA 1778 capability can be embarked in other host ships within the Task Group, including the Arafura Class OPV.

7e.

SEA 1778–1 systems will be deployed into a mine threat environment from outside the mine field by the host ship.

8.

SEA 1770–1 Rapid Environmental Assessment has acquired and achieved initial operational release of initial Fly Away Survey Kits (FASK) and Mobile Meteorological and Oceanographic Team (MMT) kits.

SEA 1770–1 systems yet to be delivered are the Autonomous Underwater Vehicle—Man Portable and the manned Survey Crafts.

8a.

As at 31 October 2018 approximately \$19 million has been spent on SEA 1770–1.

8b.

In the 2009 Defence Capability Plan, SEA 1778-1 was allocated less than \$100 million (towards the middle of the band).

8c.

The 2009 Defence Capability Plan IOC schedule was 2015-2017.

9a.

Mine Warfare Team 16 comprises 27 personnel.

9b.

SEA 1778–1 mission systems will be operated by Mine Warfare Team 16 and elements of the Clearance Diving Teams. Specifically Clearance Diving Teams will operate the Command Initiated Detonation System and the Clandestine Swimmer Delivery Systems.

Mine Warfare Team 16 will operate:

- 38ft Mine Countermeasures Support Boats
- Steber 38 Unmanned Surface Vessels
- Seafox expendable mine neutralisation systems
- Bluefin 9 Autonomous Underwater Vehicles Man-Portable
- Bluefin 12 Autonomous Underwater Vehicles

10.

Navy continues to meet all Mine Warfare directed levels of operational capability. Defence is executing the direction outline in the 2016 Defence White Paper as described above.

In addition Defence has recently hosted the 5-Eyes nations along with national and international industry partners at the Autonomous Warrior 2018 scientific (via The Technical Cooperation Panel) and military exercise at HMAS Creswell, Jervis Bay. Autonomous Warrior 2018 aims to enhance, demonstrate and evaluate the military utility of autonomous systems for future littoral operations, including MCM and REA roles.

Senate

ANSWER TO QUESTION ON NOTICE

Department of Defence

Topic: Senate - 15 Nov 18 - Q1107 - Submarine Escape Training Facility - Patrick

Question reference number: 1107

Senator: Rex Patrick

Type of question: Written

Date due for tabling: 15 December 2018

Question:

With reference to the Submarine Escape Training Facility (SETF) at HMAS Stirling:

1. Since commissioning of the SETF at HMAS Stirling, how many people have been provided submarine escape training?
2. In each of the most recent five financial years:
 - a. how many Royal Australian Navy (RAN) personnel have participated in submarine escape qualification training?
 - b. how many RAN submariners have participated in submarine escape requalification training?
 - c. how many foreign submariners have participated in submarine escape training?
 - d. what has been the total operating cost of the SETF?
 - e. what has been the total sustainment cost of the SETF?
3. In each of the most recent five financial years what has been the total upgrade project cost of the SETF?
4. Does Defence intend to continue with the provision of submarine escape training at the SETF; if not, why not, and what will replace SETF training?
5. Are there any plans to upgrade the SETF for ongoing Collins training or for the future submarine? If so, can details be outlined.

Answer:

1. 5,533 Trainees & 100 Instructional Staff have been provided submarine escape training since the commissioning of the Submarine Escape Training Facility (SETF) at HMAS Stirling.

2a. In each of the most recent five financial years the number of Royal Australian Navy (RAN) submariners that have participated in submarine escape qualification training at SETF are:

2013: 173

2014: 154

2015: 192

2016: 145

2017: 171

2018: Zero (0) (*Due to formal Operational Pause of Pressurised Submarine Escape Training*)

2b. In each of the most recent five financial years the number of RAN submariners that have participated in submarine escape requalification training at SETF are:

2013: 121

2014: 91

2015: 76

2016: 77

2017: 96

2018: 157 (*Unpressurised Submarine Escape Training only*)

2c. In each of the most recent five financial years the number of foreign submariners that have participated in submarine escape training at SETF are:

2013: nil (0)

2014: 43

2015: 65

2016: 90

2017: 78

2018: nil (0)

Note: Royal Singapore Navy Submariners only

2d. The total operating cost of the SETF has been approximately \$3.5 Mil FY13/14 to 18/19

2e. The total sustainment cost of the SETF has been approximately \$9 Mil FY13/14 to 18/19.

3. There have been no upgrades within the SETF, only continued upkeep of current fitted systems.

4. Yes. An interim Submarine Escape Training course (unpressurised) will continue to be provided at SETF while a comprehensive Training Needs Analysis (TNA) is finalised to construct a contemporary Submarine Abandonment, Escape and Rescue (SAER) Course; this will include enablers from the legacy Unpressurised Submarine Escape Training (USET). Additional or new Training Resources, if any, will be identified during the TNA.

5. The existing facility will remain in use for the foreseeable future conducting USET until the contemporary SAER course is finalised.