

# ONLY F-35A /JSF Pages



COMMONWEALTH OF AUSTRALIA

## Proof Committee Hansard

## SENATE

FOREIGN AFFAIRS, DEFENCE AND TRADE LEGISLATION  
COMMITTEE

Estimates

(Public)

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CANBERRA

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**Senator LUDLAM:** I thought we might give Navy a bit of a break. I have some questions for Air Force. Going to Australia's proposed acquisition of the F35 Joint Strike Fighter, the time lines are in the public domain. I am just checking to see if there has been any slippage from your point of view—so the first expected date of arrival in Australia for domestic training of any of these aircraft and where you would expect them to be positioned?

**Air Vice Marshal Davies :** We should have our first JSFs in country at the back-end of 2018.

**Senator LUDLAM:** In 2018?

**Air Vice Marshal Davies :** In November-December.

**Senator LUDLAM:** We have pilots training in the United States in these aircraft already, don't we?

**Air Vice Marshal Davies :** We have one in the United States at present and a second pilot to go very shortly.

**Senator LUDLAM:** It sounds like a while away, but do we know already at this stage where in 2018 they would be expected to be based.

**Air Vice Marshal Davies :** The aircraft?

**Senator LUDLAM:** Yes.

**Air Vice Marshal Davies :** In 2018, the first JSFs are going to RAAF Base Williamstown.

**Senator LUDLAM:** How many are you expecting in that first batch?

**Air Vice Marshal Davies :** I will get the exact number for you, but they flow out between 2018 and 2019 to form the first squadron, which is No. 3 Squadron.

**Senator LUDLAM:** When would you hope, or estimate, if you like, would be the first opportunity to fly the aircraft in physical exercises like Pitch Black or Talisman Saber?

**Air Vice Marshal Davies :** Probably in the middle to the end of 2019 we will begin exercising the aircraft in Australia, but we are not proposing to have IOC—that is, a full ability to deploy and operate at the government's behest—until 2020.

**Senator LUDLAM:** I think you just answered my next question. When during 2020, or is it too soon to say?

**Air Vice Marshal Davies :** It will be between June and December 2020.

**Senator LUDLAM:** And that would be for call-up and for deployment overseas or whatever your tasking was?

**Air Vice Marshal Davies :** That is correct.

**Senator LUDLAM:** So the third and fourth quarters of 2020. I have a couple of issues to run through—as you probably anticipate—around issues which we only have access to from the Defence press and from articles that come across our desk. These are different performance issues. I have a couple of questions on notice, which have only just lapsed so they are not unreasonably late, but I will put a few issues to you. Firstly, reporting: I understand that the aircraft uses fuel as an element of its internal heat sink and they have noticed in the US that if they are refuelling from very warm tankers that have been sitting in the sun for a period of time it makes the aircraft unsafe to fly because the fuel is at a very high temperature. Has that issue come across your desk?

**Air Vice Marshal Davies :** That is not across my desk. I have been aware, though, of issues around fuel temperature, but at the moment I am not aware of any issue that would prevent us acquiring the aircraft in the time frame we plan. Yesterday, at the Avalon air show, I spoke with Lieutenant General Bogdan and that was certainly not an issue that was discussed or raised as being a problem.

**Air Vice Marshal Deeble :** I am the program manager for JSF. There are no issues associated with the fuel that would not otherwise be inherent in any aircraft. So JSF does not suffer from a fuel problem.

**Senator LUDLAM:** A fuel temperature problem relating—

**Air Vice Marshal Deeble :** A fuel temperature problem.

**Senator LUDLAM:** The issue in the article that I came across was actually that the colour of the fuel trucks made a difference. If they were dark green, you would get a different fuel temperature than if they were white.

**Air Vice Marshal Deeble :** We are agnostic to the colour of the fuel tank that refuels the JSF.

**Senator LUDLAM:** And, therefore, so is the aircraft. If there is any further information that you would like to put to me on that, you will get the opportunity when the questions on notice come across the minister's desk.

Secondly, the Electro-Optical Targeting System—again from the US press—regarding the sensor pods that collect the high-resolution video and infra-red feeds. As these articles put it, 'The specification that was laid down in the 1990s now means that when these aircraft come into service they will actually have less sophisticated sensor systems than some of the legacy fighters they will be replacing.' Is that something that you have picked up on?

**Air Vice Marshal Davies :** That is news to me. The electro-optical system and the onboard systems that come with JSF, when we acquire them, will be superior to our legacy systems.

**Senator LUDLAM:** Maybe they will be superior to Australia's, but will they be superior to some of the other aircraft they will be up against? Are you aware of that particular issue? These are not particularly sophisticated searches that I have been undertaking.

**Air Chief Marshal Binskin:** I would dispute that claim. Having used the sensor and had a look at it in the last year, and then having had flown the latest sensors available with the helmet mounted cuing system, the JSF system will be far superior, day and night.

**Senator LUDLAM:** The aircraft allegedly will not be able to fire its cannon until 2019, and that is apparently a software issue. Have you come across that?

**Air Vice Marshal Davies:** My understanding of the gun issue is that it will be resolved by 2017.

**Senator LUDLAM:** So, before they arrive in Australia?

**Air Vice Marshal Davies:** Before.

**Air Vice Marshal Deeble:** I might be able to add something to that. The final gun solution was planned for block 3F of the software. That was always planned for delivery at the end of 2017. There has been no change over a number of years of planning for that capability.

**Senator LUDLAM:** One issue that I came across—maybe this is not something that you or your pilots would worry about—is that the ammunition that the aircraft would carry would allow it to fire for about four seconds before it was out of ammunition.

**Air Chief Marshal Binskin:** That is not unusual. The Hornet is six seconds.

**Senator LUDLAM:** Six seconds.

**Air Chief Marshal Binskin:** Yes, depending on the rate of fire that you choose. So that is not unusual. That is a lot of lead that goes down range in four seconds, though.

**Senator LUDLAM:** But it is gone very quickly, and would the JSF be anticipated to fly in the same kind of role as a Hornet—for close escort?

**Air Chief Marshal Binskin:** The gun is not a close escort weapon. A gun is a weapon that keeps people honest when you get close. To be honest with you, if the JSF ends up in a gun fight, you have got a lot more issues that you need to have addressed.

**Senator LUDLAM:** You would have if you were out of ammunition, I guess.

**Air Chief Marshal Binskin:** In fact, you may as well pull out the knife and the pistol that the pilot is carrying and go to that because it is not designed to get into that sort of fight.

**Senator LUDLAM:** Okay. How long will these aircraft be required to be in service? What is the estimated retirement date?

**Air Vice Marshal Davies:** I believe that is beyond 2040.

**Senator LUDLAM:** I understand why you cannot be any more specific than that.

**Air Chief Marshal Binskin:** It is a 30-year life of type.

**Senator LUDLAM:** It is a long way away. We discussed UAVs this morning. At what point in the future do your researchers tell you the human pilot will actually be a liability against unpiloted weapons systems? By when can we say these things will actually be obsolete?

**Air Vice Marshal Davies:** That is a rather speculative question. I think, from an Air Force perspective, we will see a greater preponderance of unmanned aerial vehicles in specific roles. But, at the moment, the research that we are doing and what we are seeing around the world is that there is still a place for manned aircraft, particularly in the air combat role. So, for the foreseeable future, we will still have manned aircraft and plan to operate them.

**Senator LUDLAM:** Right into the mid-2030s you think that these would still be in operation. They will not be state of the art, obviously, but—

**Air Vice Marshal Davies:** Personally, I have no problem stating that through to the mid-thirties we will need manned aircraft, yes.

**Air Chief Marshal Binskin:** JSF will be a 30-year life of type, from memory. So, if you do the maths from 2020 onwards, that is 2040 or 2050. So you are going to have manned systems.

**Senator LUDLAM:** Yes, but it is whether they will be thoroughly obsolete and too dangerous for the pilots to put to air in. It is not whether they will exist but whether we will be flying things that will be obsolete, effectively.

**Air Chief Marshal Binskin:** It could be. I think there is a long way to go before you see systems where there is not a human in the loop somehow or a manned system that is a part of your repertoire in the Defence Force.

**CHAIR:** The F111 from 1971 till—

**Senator LUDLAM:** The point I am making is UAV technology is evolving very rapidly and there are things that those vehicles can do that an aircraft with a human being in it physically cannot do.

**Air Chief Marshal Binskin:** That is it, and vice versa.

**Senator LUDLAM:** At this stage.

**Air Chief Marshal Binskin:** You have still got the best sensor available, having a human in the cockpit.

**Senator LUDLAM:** Sure, for the time being. My question to you, and you guys know a lot more about this stuff than me, is: for how long?

**Air Chief Marshal Binskin:** Because I wear wings, I am not defending the fact that you are going to have unmanned systems. But I believe all the modelling at the moment, and the assessment would be you will have a mix.

**Air Vice Marshal Davies:** If I could provide you with an answer to an earlier question you asked regarding the ranks of the folk that we have in the United States training. Currently, there are six people. We have one squadron leader, three flight lieutenants, a warrant officer and a flight sergeant. They are three pilots, two payload operators and one flight engineer who is the comms system engineer.

**Senator LUDLAM:** The second batch I have is to ASD, if they are in the room with us.

**Senator FAWCETT:** I have a question, if I could, before JSF leave. Air Vice Marshal Deeble, you are probably the best person to answer this. The announcement recently about Australia winning the work to do engine and airframe maintenance as a regional hub, could you tell the committee bit more about what that involves?

**Air Vice Marshal Deeble:** Effectively, the JSF will be supported globally. That global sustainment has been split through three regions: the Asia-Pacific region, the US region and the European region. What Australia won was the regional support, for engines, for the whole of the region.

In about two to three years time, depending on the scale of the number of engines that will be in the region, some work may go to Japan, but that is not determined at this point. We have also been signed, for the South Asia-Pacific area, responsibility for airframe maintenance.

The two companies the won that work are BAE Australia and TAE who also do maintenance for our regions. That is a pretty good outcome, really, when you consider what was happening globally, for the assignment of that activity. That work will kick in, albeit on a very low scale, from about 2018. So we are working with the JFA to understand exactly what work will need to be conducted in those early days and that will then be scaled up. Around the 2025-26 time frame we expect that deeper level maintenance in earnest will be commencing. That is about eight years into the life of the platform, and that will give us a great opportunity for Australian industry to continue to provide that support.

**Senator FAWCETT:** With Japan as a customer, from what I am hearing, we would be looking after their engines as part of that initial program. But would it also apply to aircraft, for example, from the US that might be based in Australia if some of them started rotating through the Northern Territory?

**Air Vice Marshal Deeble:** The expectation for engines is exactly what you said. We will be doing engines for the whole region. It will include US deployed forces to North Asia and also to Korea, potentially Singapore, if they sign up as an FMS customer to the program, and the Japanese engines.

There is a difference in Australia's participation in the program. We are a partner in the Production, Sustainment and Follow-on Development MOU with the States. Japan, Korea and Singapore are FMS customers. Under that deal, we are entitled to a bigger bite of the industry outcomes. The support that Japan will be providing for airframes is associated with them establishing a FACO for the manufacture of 38 of their 42 aircraft in Japan. We will also be associated with the support of the US deployed forces there.

For us, we envisage there will be some work coming from Korea and Singapore for aircraft maintenance and also for deployed US forces that will be here in Australia, noting that the rotation may not necessarily lend itself to a maintenance cycle per se.

**Senator FAWCETT:** Currently, we have a range of industry and Defence players who are involved in design engineering, particularly around fatigue and other issues, so this is a great outcome for industry in conducting regular maintenance. Is there an opportunity for further development of our IP and our contribution to the project at that design-engineering level, into the future?

**Air Vice Marshal Deeble:** At the end of last calendar year, we had contracts with Australian industry amounting to some US\$433 million. That is associated with the low scale of work we are currently doing. Clearly, that will pick up as the production rates—

**Senator FAWCETT:** Sorry to cut across; most of that is build to print. I am asking about opportunities we have to develop new understandings and contributions to things like fatigue issues, repair schemes et cetera rather than just turning the handle and doing someone else's design?

**Air Vice Marshal Deeble:** In production today we are helping them evolve their design. As we are producing these items, if we see opportunities to improve the design or reduce costs, we are doing that in production. We are hoping to leverage the companies that are currently in production into sustainment for that region. There will be new opportunities for companies that provide maintenance repair, overhaul and upgrade of existing systems for our current aircraft that we will clearly try and transfer across. We are looking very closely at the nature of the work that we will do in sustainment with the aim that we will try and get those systems supported here in Australia that will have greater opportunity for follow-on development, where we will then be able to innovate—be part of that innovation cycle—and to drive additional change from both a design engineering, production engineering and sustainment engineering perspective.



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