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Write in Questions for the Canada's Great Fighter Jet Debate

We tried to have our speakers answers as many write-in questions from the chat room as possible. Here are some of the responses.

Answers from Ricardo Traven and the team at Boeing:

Q: The fleet of KC-46's and most A330 MRTT's have which? Drogues or booms?

A: The KC-46, designed to refuel fixed-wing receiver aircraft anytime, on every mission, including simultaneous multi-point refueling, is enabled by an advanced design fly-by-wire boom based on the proven KC-10 boom, and 21st century centerline and wing-mounted hose and drogue systems.

We look forward to the potential for working with the Government of Canada and engaging in the Strategic Tanker Transport Capability project. Boeing's KC-46A is a wide-body, multi-role tanker, already certified to refuel Canadian, allied and coalition military aircraft. In addition to serving as an aerial refueling tanker, the KC-46 can be configured to accommodate cargo, passengers, or to serve as an aero-medical evacuation aircraft or any combination of all three. The KC-46 offers superior interoperability, supportability and affordability benefits and will be coupled with a robust industry plan that will bring opportunities to Canadian companies across the country. With 183 aircraft on order and growing international interest, we expect the fleet to surpass 200 aircraft by 2029.

Q: The F-35 is currently at \$78 million. Super Hornet was found to be more expensive when Canada tried to purchase them as an interim aircraft. Saab has proposed the Gripen E to cost \$85 million. If the other aircraft already costs more than the F-35 to produce, how can they be cheaper? Can we use latest RTQ on FAC then work in cost to operate points?

A: The cost of an aircraft depends on a lot of different factors, including wants and needs of the customer. And when you look at a Congressional Notification, which is a standard part of the Foreign Military Sale process, the value submitted is one that includes the aircraft, initial spares and support, weapons and all of the various options a customer may be interested in exploring. For any international procurement, you will usually see a higher value in the Congressional Notification than what is represented in a final offering or purchase. What's perhaps most important is what happens after a fighter is procured.

For example, the operation of a fighter is approximately 75% of the total lifecycle cost so finding opportunities to reuse existing intellectual and physical infrastructure – like you would with the F/A-18 Block III – will make a big difference. When you consider the additional benefits of a guaranteed Industrial and Regional Benefits plan, Canadian taxpayers will see that cost of procurement offset with investment from Boeing going back into Canada. In fact, Boeing has already partnered with trusted Canadian industry entities, such as CAE, L3 Harris MAS, GE Canada, Peraton, and Raytheon Canada Limited, to provide direct, in-country sustainment and training products and services to support a Block III Super Hornet throughout its lifecycle.

Q: To Ricardo, how about Boeings commitment to the SH. Looking at the HX challenge, they don't promise any commitment longer than 20+ years, Canada require support beyond 2060?

A: The Super Hornet is the U.S. Navy's premiere fighter aircraft, and with no set retirement it will remain so for decades to come. Boeing will deliver Block III Super Hornets to the U.S. Navy through the mid-2030s via three production lines and there remains significant international interest in the capabilities of the Block III Super Hornet, with a market of more than 400 advanced fighter aircraft in campaigns around the globe, including in Canada.



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Q: Could we please have comments re the ground attack close support capabilities of the 3 aircraft. Could we use the multi mission statement?

A: The F/A-18 Super Hornet is effective today against all missions in the warfighting spectrum including close air support, all-weather attack, tactical tanker as well as electronic, precision and direct attack.

Q: Question for Ricardo How do you comment on “Technical, Structural and Sustainment issues” with respect to CFTs which became apparent after operational testing as reported and should latest marketing renders from Boeing highlight that CFTs will not be available?

A: The Boeing Block III Super Hornet’s advanced capabilities provide the U.S. Navy with multiple options for increasing an air wing’s combat effectiveness. Together with the Navy, Boeing will ensure that the Block III remains the most versatile tactical aircraft in the fleet. As for Canada, we stand by our offering to provide the right capabilities to meet the Royal Canadian Air Force’s performance needs. We are continuing to partner with the U.S. Navy on the current and future work scope of the conformal fuel tanks to meet the evolving needs of the Air Wing of the Future. The Block III aircraft were designed and are being produced with provisions for conformal fuel tanks.

Answers from Laurie Hawn:

Q. Will RCAF have access to source code of the aircraft and ability to integrate sensors, weapons and other mission systems onto the F-35 by itself to at least the same extend as Israel does or will everything have to be done by US for us?

A. Not sure what specific arrangements are in place for Israel. There is a US Research Lab at Eglin AFB. Right beside it, Canada, Australia and the UK built the ACURL to use intelligence data to inform the design, programming and operation of F-35 sensors. Much of that data comes under the Five Eyes intelligence agreement (Canada, US, UK, Australia and New Zealand) and is extremely highly classified largely due to sensitivity of sources. The US doesn’t share everything that it knows, even with all the Five Eyes. It will certainly not be shared with non-Five Eyes and non-NATO countries like Sweden. Saab, Sweden and Alex McColl simply don’t know what they don’t know. The data that he referred to on the Canadian warships is USN data and it is not all Five Eyes data. If we stay in the F-35 program, we will have the maximum possible access to that data. If we go with Super Hornet, we will have access to all the USN data but there are systems on F-35 that are more advanced and rely on Five Eyes data, as well. We will not have access to that data and it will make the production of Mission Data Files that allow programming of and operation against advanced threats much more difficult. This will impact not just out-of-country operations, but NORAD as well. If we go with Gripen, we are truly on our own.

Q. And when it comes to Canada and RCAF do you think that price of over 310M per aircraft would be different than one offered for airframes during previous interim solution potential order?

There is no aircraft priced at \$310M. There are different prices quoted at different times for different program submissions, due to competitive aspects and changing of aircraft production programmes as they mature.



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Q. And question from Canadian SFTE chapter, what do all you gents think of program Fly Off at the end of competition?

Not practical due to cost, availability of aircraft and classification. There are only a small handful of Gripen E built and they are all development aircraft. Any fly-off would have to involve some highly classified scenarios, for which suitable range availability would be a challenge. BTW, the one F-35 that was serviceable in Finland participated in a 1 v Many and completely dominated against vastly superior numbers of 4th Gen.

Q. How will any of the Foreign OEM participants defeat ICBM's?

A. ABM capability is not part of the scenario, although F-35 has demonstrated the ability to automatically share and transfer data with naval ships and ground-based anti-missile systems to successfully shoot down other types of offensive missiles. Can't do that with Super Hornet or Gripen.

Q. What EXACTLY is an "active stealth capability"?

A. The ability to electronically mask your presence by suppressing or confusing the "looker".

Q. The fleet of KC-46's and most A330 MRTT's have which? Drogues or booms?

Both.

Q. Since our NATO allies are buying boom equipped F-35A's, and NATO is buying a MRTT fleet, like the AWAS fleet, how would a Gripen work?

<https://www.airbus.com/newsroom/press-releases/en/2020/06/airbus-delivers-first-a330-mrttp-to-nato-multinational-multi-role-tanker-transport-fleet.html>

Q. CC-150 replacement. How about the Airbus MRTT purchased around the world?

A. Any new tankers have both boom and probe and drogue. ITQ for RCAF tankers is out and bidders must be able to have booms and drogues.

Q. Australia and Switzerland found many faults with the F-35 one of which is the gun that can't shoot straight. How is that going?

A. Switzerland has never operated F-35. The cracking in stealth coating reported near the 25 mm gun is in the process of being addressed and is not a major issue. Every new aircraft has growing pains and the more advanced the aircraft the more that will crop up. Most of the problems being quoted are historical and none are safety of flight. CF-18 was no different and Ricardo joined the program about six years after we got our first aircraft. I was there from day 1 and we wrestled with a lot of serious problems that were all resolved or worked around.



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Q. How long before manned fighter aircraft are obsolete and replaced by remotely operated vehicles?

A. That will come eventually, and F-35 is the only contender that will actually provide a complementary transition to the next Generation of Air Defence NGAD. It is compatible with a number of NGAD programs already in development.

Q. How many Gripens are guaranteed to be built, versus F-35's? Saying "40 years of work" is disingenuous, when it can be done by one small company for maybe 200 fighters.

A. There are no guarantees and everything will depend on winning competitions. So far, Gripen has failed at many and F-35 has succeeded at many. Gripen will eventually number in the hundreds and F-35 will number in the thousands.

Q. These new jets lock us into massive, deadly carbon emissions for the next 30 years, making any of Canada's climate targets impossible to achieve. Could you comment on carbon emissions and Canadian climate targets - keeping into consideration a protected world not just for Canada's sons and daughters - also grandchildren!

The carbon emissions from a small number of fighters are infinitesimal compared to the many millions of other emitters. Defending our sovereignty and security and helping others do the same is not part of Canada's climate change program.

Q. Would the presenters please share a cost analysis comparing the overall environmental impact of manufacturing, life expectancy maintenance and housing as well as emissions (per flight hours) of the three fighter jet options?

Not possible without a program beyond any of our means and does it matter? See previous answer. Do we need security and sovereignty or not?

Q. What about what Boeing did to Bombardier?

A.
On 28 April 2016, Bombardier Aerospace recorded a firm order from Delta Air Lines for 75 CSeries CS100s plus 50 options.

On 27 April 2017, Boeing filed a petition for dumping them at \$19.6m each, below their \$33.2m production cost.

On 9 June 2017, the US International Trade Commission (USITC) found that the US industry could be threatened.

On 26 September, the US Department of Commerce (DoC) observed subsidies of 220% and intended to collect deposits accordingly, plus a preliminary 80% anti-dumping duty, resulting in a duty of 300%. The DoC announced its final ruling, a total duty of 292%, on 20 December.

On 10 January 2018, the Canadian government filed a complaint at the World Trade Organization against the US.



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On 26 January 2018, the four USITC commissioners unanimously determined that US industry is not threatened and no duty orders will be issued, overturning the imposed duties. The Commission public report was made available by February 2018.

On March 22, Boeing declined to appeal the ruling.

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Darned good question – they are not cheaper and are less capable now and in the future.

Q. Regarding intelligence and Sweden. That is that an issue? Canada will have full upgrade Control within NORAD. Will US not share intelligence with Canada?"

See my answer to the first question.

Q. "With the vast airspace we have to patrol in the Arctic shouldn't super cruise be an absolute necessity?"

Absolutely not. Whether you are cruising at Mach 0.90 or Mach 1.1. there is not a lot of actual difference and your systems travel at the speed of light. With F-35, those systems are sharing knowledge with all other players and that is not the case with Super Hornet or Gripen.

Q. Could we please have comments re the ground attack close support capabilities of the 3 aircraft.

F-35 will excel at virtually all air-ground missions. That said, no one does Close Air Support like an A-10, but that is all that the A-10 will do. With the multiplicity of mobile and highly advanced threat systems, survivability becomes a more critical element and A-10 will die. The stand-off weapons capability of F-35 and to a lesser extent the other two will largely change the face of CAS.

Q. Hawn, thank you for bringing in the human factor - as you said " Canada's sons and daughters are waiting for us to get this right." Where are Canada's daughters at this table making decisions for Defence Policy, inclusion which is at the heart of Canada's Feminist Foreign Policy?

A. Everyone who is qualified is welcome and Canada's daughters are accordingly at any table. Canada needs a rational defence policy that is rooted in a rational foreign policy and no one philosophy owns that agenda.

Q. Please have Ricardo explain why the USN selected the single engine F-35 after their blue water ops analysis?

A. Good question – Ricardo??



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CFTs will not likely be approved due to the many technical challenges with flight envelope testing and maintenance limitations. Without CFTs, the Super Hornet proposal is even weaker.

Q. What PM procured the C-17, C-130, Leopard 2's, MRAP's, CHAPS program, etc.?

Stephen Harper.

Q. How many CF-18s have sucked in a bird or other object and had at least one engine failure?

Would have to check flight safety records, but the number would be small. F404 engine is fairly resilient but F135 is generations beyond that in terms of basic structural strength, advanced systems and redundancy. There have been over 100 ingestions of birds and other objects with zero failures. The F414 engine on Super Hornet and Gripen is a derivative of F404. If I had that older tech and less redundant engine, I would want two as well.

Q. Didn't an F-35C suck in a basket while refueling and still manage to land?

A. Not aware of that incident, but see previous answer.