



House of Commons  
CANADA

## Standing Committee on National Defence

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NDDN • NUMBER 032 • 3rd SESSION • 40th PARLIAMENT

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EVIDENCE

**Thursday, November 4, 2010**

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**Chair**

**The Honourable Maxime Bernier**



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• (1530)

[Translation]

**The Chair (Hon. Maxime Bernier (Beauce, CPC)):** Welcome to the 32nd meeting of the Standing Committee on National Defence. Pursuant to Standing Order 108(2) we are continuing our study of the next generation of fighter aircraft.

[English]

We have with us our first witness, from Boeing, Mr. Kory G. Mathews, vice-president, F/A-18 and EA-18 programs.

Mr. Mathews, you have five to nine minutes to do your presentation and after that the members will have about 50 to 55 minutes to ask you questions. So thank you for being with us. You have the floor.

**Mr. Kory G. Mathews (Vice-President, F/A-18 and EA-18 Programs, The Boeing Company):** Mr. Chairman and members of the committee, *bonjour*. My name is Kory Mathews and I am the F-18 programs vice-president for Boeing Defense, Space and Security.

On behalf of the Boeing Company, I want to thank you for inviting us to speak with you today regarding Canada's next-generation fighter and Boeing's F/A-18 Super Hornet.

Before I get started, let me introduce two colleagues here with me today. First is Mr. Pete Peterson and second is Mr. Ricardo Traven. Pete runs the Boeing office here in Ottawa, overseeing operations for Boeing Defense, Space and Security in Canada. Ricardo is a graduate of the Royal Military College of Canada, a former Canadian Air Force CF-18 pilot, and now the chief test pilot at Boeing for the Super Hornet program.

A new fighter acquisition is a huge undertaking for any nation, and Boeing recognizes the immense importance of this acquisition to Canada, both from the perspective of the defensive capability it will bring to the Canadian Forces as well as the significant government investment this acquisition will require. That is why we believe the Super Hornet, with its proven capabilities, low risk and known acquisition price, affordable life-cycle costs and guaranteed delivery schedule would be an outstanding addition to the Canadian Air Force inventory.

Debuting just four years ago, in 2006, the Block II Super Hornet incorporates the latest defence technology advancements, including an integrated display of fused data from a new wide array of sensors, making it the newest combat fighter attack aircraft in operational service today with the United States forces.

Of the multitude of the Super Hornet's advanced capabilities, one that does not get the attention it deserves is its stealth characteristics. Although some preliminary discussions between Canadian Air Force and United States Navy officials took place in 2008 and early 2009, to our knowledge Canadian officials have not yet received the full complement of Super Hornet performance data from the United States Navy, including those about the aircraft's stealth characteristics.

While security constraints preclude us from having even the most general discussion of this matter in this forum, I can assure you that the Canadian experts will find these briefings most informative and enlightening. I would respectfully suggest that you request this data from the United States Navy, if only to ensure that you make a fully informed decision as part of any next-generation fighter selection process.

In addition to the advanced capability the Super Hornet offers, it is recognized by industry and the United States government as a model defence acquisition program. To date, more than 440 Super Hornets have been delivered to the United States Navy and most recently the Royal Australian Air Force, with each and every aircraft delivered on or ahead of schedule and on or under budget.

As you may be aware, at the end of September Boeing signed a third multi-year procurement contract with the United States Navy to provide 124 new Super Hornet aircraft at a reduced cost, generating approximately \$600 million in savings to United States taxpayers. We have every expectation that future international customers, such as Canada, would also be able to leverage the reduced cost offered in this contract, just as the Australian government did during its Super Hornet acquisition.

For more than 80 years, Boeing has demonstrated our commitment to both Canadian industry as well as its highly skilled workforce, generating approximately \$1 billion in business in Canada annually. Today this great country is home to one of Boeing's largest international supplier bases, including more than 200 major partners spanning every region of Canada. A Super Hornet acquisition would enable even more opportunities for Canadian workers through Boeing's diverse portfolio of defence, commercial, and space products, something our competitors simply cannot offer. And Boeing would comply with the current industrial and regional benefits policy and commit to matching dollar for dollar the full contract value with guaranteed Canadian content work.

Based on our understanding of your defence needs, including our review of the document on high-level mandatory capabilities for Canada's next-generation fighter and the Canada First defence strategy, I have every reason to believe that the Super Hornet would be ideally suited to meet your mission requirements.

• (1535)

I'm not here today to take up your valuable time offering unproven claims or future projections of cost and/or capability. The Boeing Company can today offer you fact-based, proven information on the Super Hornet so that you are able to make a fully informed decision.

Should you need additional information or technical briefings, the Boeing Company and the F-18 program stand at the ready. As I previously stated, I would respectfully recommend that you engage the United States government to obtain the full complement of performance data on this weapons system. I also invite the Canadian Air Force, should there be a desire, to conduct a flight and maintenance evaluation of the Super Hornet to better understand the full capabilities of this outstanding multi-role fighter.

And lastly, to this committee, I want to extend an invitation to visit our program offices and production facilities in St. Louis.

Once again, *merci beaucoup* for the opportunity to speak with you today, and I look forward to your questions.

**The Chair:** Thank you very much.

I will give the floor to Monsieur LeBlanc.

**Hon. Dominic LeBlanc (Beauséjour, Lib.):** *Merci beaucoup, monsieur le président.*

Thank you very much, Mr. Mathews, for your precise and I thought rather detailed presentation.

I want to zero in on something you said and make sure we understood, because I thought it was of considerable significance. You referred to a document that the government made public in the month of October, on the "high-level mandatory capabilities for Canada's next-generation fighter". You've seen that document, and you and your colleagues have reviewed it carefully?

**Mr. Kory G. Mathews:** Yes, sir.

**Hon. Dominic LeBlanc:** And you're saying that you currently produce an aircraft that you believe meets all of those high-level mandatory requirements?

**Mr. Kory G. Mathews:** Yes, sir.

**Hon. Dominic LeBlanc:** You've also, I hope, seen or been briefed on some of the testimony that General Deschamps gave before this committee a week ago, where he outlined again the high-level mandatory capabilities the air force was looking for?

• (1540)

**Mr. Kory G. Mathews:** Yes, sir.

**Hon. Dominic LeBlanc:** And there's nothing in General Deschamps' testimony, or his colleagues', before this committee last week that makes you think that your aircraft can't meet the needs as outlined by the general?

**Mr. Kory G. Mathews:** Yes, sir, that is correct.

**Hon. Dominic LeBlanc:** Thank you. That, to me, is very significant.

I'll go on to my second question.

We've heard a lot of discussion around the issue of interoperability. One of the arguments advanced as to why the F-35 is the only aircraft that could possibly meet the needs of the air force is because of its data links and interoperability with our NATO allies. The airplane you're referring to, your Super Hornet, in your view does it meet those interoperability requirements with our NATO allies on the kinds of missions that were outlined, for example, in the Canada First defence strategy?

**Mr. Kory G. Mathews:** Yes, sir, and let me expand upon that, if I could.

The Super Hornet today operates in an interoperable manner. It's important to note that the navy's current plans have the F-18-E/F Super Hornet and the other variant, the EA-18G, operating side by side off of carrier decks out to 2035 or 2040, with the F-35 in a complementary role to the Super Hornet.

If you see where we are today, with the interoperability that we have and the data links that provides, we currently use Link 16, for example, along with other data links, providing full exchange of information—the ability to exchange targeting information, the ability to exchange imagery and up to and including full-motion video. As we would look forward in any future force construct, I'm absolutely confident that we would be able to operate in that continued interoperability manner. If that requires new data links, that's how the Super Hornet was designed. It was designed with growth in mind. The United States Navy has a flight plan that adds capabilities over the upcoming decades, and on that flight plan are those advanced data links to ensure future interoperability.

**Hon. Dominic LeBlanc:** Thank you, Mr. Mathews. I've only a couple of minutes left.

My colleagues will obviously have further questions, but there's one other issue that is of interest to me. The Department of National Defence has stated before this committee, and in other contexts that I've seen, that they've conducted a number of simulations, done internal studies, they've compared various airplanes as against their requirements—or their high-level capabilities, in the only document that we've seen—their internal requirements. And you said something interesting in your opening comments: you don't believe that in fact the Government of Canada has requested from the American government the detailed technical requirements, for example, around the stealth features of the airplane you're offering.

So am I to conclude that in your view they haven't been able to compare apples to apples and oranges to oranges, and in fact they may not have had enough information to make a valid comparison?

**Mr. Kory G. Mathews:** I cannot attest to what has actually been requested. What I can attest to, and we confirmed this with the navy prior to this appearance, is again, as I shared in my opening comments, that a full complement of capabilities for this weapons system has not been provided.

**Hon. Dominic LeBlanc:** To the Government of Canada.

**Mr. Kory G. Mathews:** To the Government of Canada, yes, sir.

**Hon. Dominic LeBlanc:** Thank you.

We're running out of time.

Again, I understood you in your opening comments to say that in any process where you could in fact submit a formal proposal for the Super Hornet you would be prepared to guarantee dollar for dollar the industrial and regional benefits, as has been the case in previous acquisitions, for in fact the price of the aircraft that was being procured.

**Mr. Kory G. Mathews:** Yes, sir.

With the CF-18 and other programs, Boeing has a long track record of meeting those commitments dollar for dollar, again, with Canadian content work as opposed to just pure contract value. Yes, sir.

**Hon. Dominic LeBlanc:** Thank you very much.

[Translation]

**The Chair:** Thank you. Just on time.

Mister Bachand, you now have the floor.

**Mr. Claude Bachand (Saint-Jean, BQ):** Thank you, Mister Chair.

Good afternoon Mister Mathews.

[English]

I'll start off in English by saying I was very sorry when I was in St. Louis to have crashed a B-2 from your company. It was worth \$2 billion up in smoke, I'm afraid. But it was in a CAE-Link simulator, so I saved my life.

• (1545)

[Translation]

Mister Mathews, the Government continues to contend that requirements disqualify your aircraft because it is not fifth generation and does not possess stealth characteristics.

What exactly is a fifth generation aircraft? Do you consider the Super Hornet to be a fifth generation aircraft? Does it have stealth capability?

[English]

**Mr. Kory G. Mathews:** The term "fifth generation", and really the entire generational context, has become more of a marketing term with a lack of a universal definition, and more importantly, with a lack of specificity and the attendant requirements associated with whatever capability would be needed. That being said, sir, to your question, if we were to define fifth generation as outlined in the high-level mandatory capabilities, then yes, sir, I would say we are fifth generation, as we believe we would meet those high-level mandatory capabilities.

The other part of your question, sir, was around stealth characteristics. There is often a misnomer that the F-18 Super Hornet lacks stealth. I can stand here today and share with you that this is not true. From the outset it has designed-in stealth in an overall approach that the navy outlined to ensure that this multi-role aircraft is highly survivable today and in the future with current threats and future threats. Certainly this forum would not preclude

any detailed discussion on this characteristic, but yes, sir, to your question, there is designed-in stealth.

[Translation]

**Mr. Claude Bachand:** There is another issue that the Bloc québécois and myself have been asking questions about for some time now. We asked Lockheed Martin about this.

Military reviews have reported that in simulations, four Typhoon aircraft are able to knock out eight JSFs 85 percent of the time. These reviews also report that simulated dogfights between the Sukhoi SU 35 and the J-10 "do not always end in a JSF victory". This is important for us. I have requested the simulations from the Government and was told that they were classified.

As head of the Super Hornet program, do you have this type of simulation data? Are you able to provide them to the Standing Committee on National Defence either today or within the next few days?

[English]

**Mr. Kory G. Mathews:** When it comes to simulation, what I would like to do first is make sure there is clarity on terminology, if I could. We typically view, as an industry member, two types of simulations. First, there is what we would refer to as our flight simulator. That's where we bring aircrew in so that they can understand the handling qualities of the airplane, put it into different scenarios, and establish a look-and-feel for that weapon system. Secondly, though, there is another category of what are often termed simulations. Our terminology would be more along the lines of operational analysis, constructive analysis, using a variety of tools, where you get probably a better feel for comparative analysis. Certainly we have the capability for both.

Back in 2008 several members from the Canadian Air Force had the opportunity to come down and spend two days in that first flight simulator—again, to get a look-and-feel for this weapon system.

I'm not able, today, to get into any specific discussions on specific simulations and/or comparative analysis. As a matter of fact, I would likely submit that it would be inappropriate for me to do so, not understanding the detailed level of requirements required of the next-generation fighter. We would have the ability to do that, should it be requested, but at this point in time, other than that initial flight simulation, we have not engaged in any discussion on those more detailed comparative analyses, sir.

• (1550)

[Translation]

**Mr. Claude Bachand:** Mister Mathews, would you contend that the Super Hornet has a fighting chance in a simulated one-on-one dogfight. What is the probability of it knocking out a Joint Strike Fighter?

[English]

**The Chair:** Briefly. You have the floor.

**Mr. Kory G. Mathews:** It would be inappropriate for me to talk about Super Hornet in a dogfight with an F-35. Sir, I would not be able to go there.

What I can say, however, and once again, as I shared in response to one of the initial questions, is the United States Navy has the F/A-18E/F Super Hornet side by side with the F-35 past 2035 or 2040. They have designed-in current capabilities as well as future capabilities to defeat current and future threats. So I'm confident in this weapon system's performance. But again, it would not be appropriate for me to comment on a Super Hornet in a dogfight with an F-35, sir.

**The Chair:** Thank you.

Thank you very much, Mr. Mathews.

I will now give the floor to Mr. Harris.

**Mr. Jack Harris (St. John's East, NDP):** Thank you, Mr. Chair.

Thank you, Mr. Mathews, for your presentation.

I was interested in this notion of fifth generation as well. It seems to be a label that's put on only a couple of airplanes. In fact the decision-making seems to be around the fact that the F-35 is the only fifth-generation aircraft available to Canada, and therefore we need it.

I'm looking at the capabilities as well, the high-level mandatory capabilities, and I think you have affirmed that your company can meet any of those in terms of range, speed, and the capability to deal with NORAD and NATO configurations. Is there any difference between the F-35 and Hornet in terms of the purpose for which this plane is built? Someone has suggested that the F-35 is a particular type of niche aircraft to go in and do ground damage after the sort of first day strike. On the other hand, our air force people have told us that this is a multi-use jet. What is the difference between a Hornet and an F-35? And I'm assuming you know the capabilities of the F-35 very well, being a competitor.

**Mr. Kory G. Mathews:** Let me start with the capabilities of the Super Hornet. If you look at what it is tasked to do today and in the future, it is the United States Navy's multi-role fighter. It does everything from precision ground attack to air-to-air superiority. With the EA-18G electronic attack, it does close air support, and as the navy operates today, the Super Hornet even operates as a tanker, refuelling other Super Hornets and other legacy Hornets.

As you look at the capabilities necessary to meet that variety of missions, I would highlight a couple. First is survivability. As I shared at the outset, the navy constructed the Super Hornet program and rolled this aircraft out in 2006 with designed-in stealth, enhanced situational awareness, full manoeuvrability, and reduced vulnerability as an approach to ensuring long-term survivability.

**Mr. Jack Harris:** Let me interrupt you. I realize you're proud of your aircraft and its abilities, but we're more interested in focusing on the decision-making and how your company was included in that, and if you could have pointed out some difference it might have been helpful.

There's a suggestion.... You said that the Canadian government did speak to you at the end of 2008 and early 2009. Did you have any expectation that there would be ongoing discussions and further information to be provided to the Government of Canada before any decision was made?

•(1555)

**Mr. Kory G. Mathews:** That would have been our expectation. Yes, sir.

**Mr. Jack Harris:** Were you told that?

**Mr. Kory G. Mathews:** Sir, I cannot attest to that first-hand. I do not know.

**Mr. Jack Harris:** You're telling us, first of all, that you're satisfied your company can do all those things outlined in the portions of the statement of requirements that have been made available to us. I assume that if you had discussions, you'd be aware of other requirements that the Canadian government may have that you may or may not be able to meet.

**Mr. Kory G. Mathews:** Not to our knowledge, sir. Certainly in any process, requirements would be derived from high-level mandatory capabilities. We don't have any insight into those requirements, so I am only addressing the high-level mandatory capabilities that we saw outlined in the document as well as in testimony.

**Mr. Jack Harris:** I can only assume, from what you've told us today, that you don't believe your company has had a fair crack at this project. Is that correct?

**Mr. Kory G. Mathews:** Sir, we're not going to be here today and be critical of any process that has gone on. That would not be our reason for being here.

What I can offer up is that if there has been an assessment, in my opinion the full complement of information needed to make an accurate assessment was not provided.

**Mr. Jack Harris:** So you don't feel you were given an opportunity to give the full level of information that's required for a proper assessment to be made.

**Mr. Kory G. Mathews:** Sir, as I shared, I know that the information has not been provided. Yes, sir.

**Mr. Jack Harris:** You said that the Super Hornet, so far, has been sold to the Australian Air Force and the U.S. Navy. Is that it so far?

**Mr. Kory G. Mathews:** Yes, sir, that is correct at this time.

**Mr. Jack Harris:** What can you say about production capabilities? There was a lot of talk about the F-35 production line being up and running and having the capability of keeping it in production for up to 35 years. How does that compare with your capabilities as a manufacturer?

**Mr. Kory G. Mathews:** As I shared, the recently signed third multi-year procurement contract carries production out past 2015. Given the opportunities for further domestic needs as well as the robust interest internationally, I would stand here today as the F-18 program manager feeling extremely confident that we will be in production well past 2020.

**Mr. Jack Harris:** Do I have more time?

**The Chair:** No, you have no more time. Thank you, Mr. Harris.

**Mr. Jack Harris:** My timing was good, then. Thank you.

**The Chair:** Thank you, Mr. Harris.

I give the floor to Mr. Hawn.

**Hon. Laurie Hawn (Edmonton Centre, CPC):** Thank you, Mr. Chair.

Thank you, Mr. Mathews, for coming.

I have a few questions. You talked about visits by Canadian officials or the opportunity to talk to Canadian officials. I believe there were visits in July 2005, January 2008, February 2008, and September 2008 by Canadian officials down to the United States, either to St. Louis or to PMA-265 in Washington. Were you aware of those visits?

**Mr. Kory G. Mathews:** Yes, sir.

**Hon. Laurie Hawn:** You participated in all of those visits?

**Mr. Kory G. Mathews:** The Boeing company did, yes, sir.

**Hon. Laurie Hawn:** Did you participate in the process of providing costing numbers from PMA-265 to the Canadian government on those visits?

**Mr. Kory G. Mathews:** I believe the pricing and availability were provided from the navy customer in November 2008, yes, sir.

**Hon. Laurie Hawn:** Are you aware that costing data showed a fully equipped Super Hornet to be considerably more expensive than an F-35?

**Mr. Kory G. Mathews:** Sir, I can't address the specifics of what other information was provided primarily for the F-35 program. All I can offer up to you, sir, is the known price of the Super Hornet delivered today and delivered in the future. It would be inappropriate for me to speculate on potential JSF pricing

**Hon. Laurie Hawn:** We don't know those numbers, of course.

When you talked about your reduced-cost airplane to the navy, was that a fully equipped aircraft, a mission-ready aircraft?

**Mr. Kory G. Mathews:** Yes, sir, the 10% savings certified to Congress were for a fully equipped aircraft.

**Hon. Laurie Hawn:** Are you aware that the costing provided to the Canadian government from PMA-265 at the meetings Boeing was part of did not include many components: external fuel tanks, pylons, targeting pods, missile launchers, radio warning receivers, jammers, chaff/flares, and the gun? Were you aware of that?

**Mr. Kory G. Mathews:** Yes, sir, I was aware of the pricing and availability and the content therein. Typically, those are broken out separately. That was before I was on the program, but I am assuming they ran that traditional process, yes, sir.

**Hon. Laurie Hawn:** So it would be fair to say—and we've costed it out—that it would be about another \$8 million to \$9 million per airplane to add those clearly missing pieces of essential gear?

• (1600)

**Mr. Kory G. Mathews:** Depending on what would be required by the Canadian Air Force, any pricing would need to be holistic in nature, yes, sir.

**Hon. Laurie Hawn:** Obviously jammers and guns and things are pretty basic to the airplane.

How many visits did Boeing make to Canada to discuss the program? Are you aware?

**Mr. Kory G. Mathews:** Sir, I'm not aware of the exact number. We can provide that data for the record. I know there have been

several trips up here, I believe most recently in April of this year, when then program manager Mr. Bob Gower had a brief briefing with Lieutenant-General Deschamps.

**Hon. Laurie Hawn:** Of course, you also have Boeing officials in Ottawa. Have they had opportunities to speak to Canadian officials about the Super Hornet?

**Mr. Kory G. Mathews:** As questions are asked or informal dialogues take place—all of which would be preliminary in nature—yes, sir, I'm sure those would occur.

**Hon. Laurie Hawn:** Have they offered to bring forward any new information that becomes available?

**Mr. Kory G. Mathews:** Sir, I am not aware of that, no, sir.

**Hon. Laurie Hawn:** They have.

Did Canadian pilots fly the Super Hornet simulator?

**Mr. Kory G. Mathews:** Yes, sir, they did.

**Hon. Laurie Hawn:** Okay.

You talked about stealth characteristics being designed into the Super Hornet. If you're looking at the two airplanes head-on, the F-35 and F-18, everything in the F-35 is internal; and to get the same mission performance, you have fuel tanks and weapons hanging on the F-18. You have square intakes you can look down on and see the engine, and you have different materials and panel designs.

So I'm not sure how you can make the statement—or maybe you're not making the statement—that the F-18 is as stealthy as the F-35. Are you suggesting that?

**Mr. Kory G. Mathews:** Sir, as I shared before, this forum would not allow me to get into the specific level of detail required. What I would offer up, sir, going back to your original line of questioning, is that there has certainly been an ongoing dialogue. Most of that subsided in the 2009 timeframe.

What I am sharing with you here today, sir, is that a full complement of the Super Hornet's capabilities from the United States Navy has not been provided to Canada.

**Hon. Laurie Hawn:** If all of the countries in the memorandum of understanding, ten so far, plus Israel outside the memorandum of understanding, have had military and civilian experts examine the Super Hornet, other aircraft, and the F-35 extensively over several years at a very highly classified level, and have all come to the same conclusion, that the F-35 is the only aircraft that meets their requirements at the lowest cost and with the best industrial opportunities for their industries, are they all wrong?

**Mr. Kory G. Mathews:** Sir, I would not say that. It would be inappropriate for me to do so.

What I can offer up to you today again, sir, is that any specific assessments that have gone on for this fighter, the next-generation fighter, have been void of the full complement of information.

Should there be a competition—and again, that is not our decision, nor are we here to advocate for it—we would look forward to and be honoured to submit this weapon system in that competition, as it is our understanding that, with its top-level listing of high-level mandatory capabilities, it would be ideally suited for that, sir.

**Hon. Laurie Hawn:** As I think you know, the high-level mandatory capabilities are word statements of general capabilities. They're not specific operational requirements.

**Mr. Kory G. Mathews:** Absolutely, sir. But I would respectfully say that the point I would be trying to bring up is that void of having any insight into those specific levels of requirements, this discussion is around those high-level mandatory capabilities.

**Hon. Laurie Hawn:** So is the United States Navy negligent in not continuing with the Super Hornet, instead of going with the F-35? Because surely they would have all the information on both sides.

**Mr. Kory G. Mathews:** If I may answer that, sir, I don't think deficient at all. Again, sir, F-35 does not replace the Super Hornet. Those two platforms are side by side on the carrier deck, and if you look at numbers on the carrier deck, it's a two-to-one ratio, with two Super Hornets per F-35, well out past 2035 or 2040. So again, I would prefer the discussion be around the complementary nature of those two, as opposed to navy being deficient and selecting one or the other, again, because they will be side by side for a long time, sir.

**The Chair:** Thank you very much, Mr. Mathews.

I will give the floor to Mr. McKay.

• (1605)

**Hon. John McKay (Scarborough—Guildwood, Lib.):** Thank you, Chair.

It seems to me your key point here is that Canadian officials have not yet received a full briefing from the U.S. Navy including the aircraft's stealth characteristics. When at a similar stage of procurement did the Australian government receive a briefing such as you're suggesting here in your presentation?

**Mr. Kory G. Mathews:** Sir, I would refer that question. It would probably be better answered by the U.S. Navy and the United States government. But the information they were provided with was sufficient for them to make a determination to procure the Super Hornet.

**Hon. John McKay:** I suppose we could get the United States Navy in here to tell us what that would be, but would it be a reasonable assumption that no nation would purchase an aircraft at such a considerable expense without having at least that basic information?

**Mr. Kory G. Mathews:** Yes, sir.

**Hon. John McKay:** In your presentation you say you know what the affordable life cycle cost might be. You know how many airplanes Canada is proposing to order. What would be the affordable life cycle costs on a comparing apples-to-apples basis between the F-35—which you know, the number is out in the public—and your airplane?

**Mr. Kory G. Mathews:** Sir, I would prefer to answer that by saying the life cycle cost is so dependent on specific detailed requirements, specific detailed assumptions. So I would respectfully request that to provide a true apples-to-apples comparison on that, there would need to be a specific dialogue: “Here is exactly what we would ask for you to price from an overall in-service support contract and the incumbent life cycle cost of that”. So it would be premature for me to provide you an anecdotal number void of that detailed discussion.

**Hon. John McKay:** Would you be prepared to do that, to the Government of Canada, so you can give a comparison, apples-to-apples, full life cycle cost?

**Mr. Kory G. Mathews:** Again, it would probably be better answered by the United States Navy, but I would answer here in front of this committee today that yes, sir, we would look forward to those opportunities in a competitive process.

**Hon. John McKay:** The information in the public realm says it's \$7 billion for the F-35. Presumably it's based on some information. I would have thought your company could at least try to compare to that life cycle cost.

**Mr. Kory G. Mathews:** Again, it would not be appropriate for me to comment on a specific number provided by F-35 void of all the detailed assumptions that go into that, because life cycle cost analysis is a complex activity. What I can talk about, however, sir, is the tremendous reliability, maintainability, and supportability of the F-18E/F Super Hornet. If you look at any characteristic there, be it maintenance man-hour per flight-hour, etc., I would stand the Super Hornet up against any weapons system out there.

**The Chair:** Thank you.

I will give the floor to Mr. Braid.

**Mr. Peter Braid (Kitchener—Waterloo, CPC):** Thank you very much, Mr. Chair.

Thank you, Mr. Mathews, for being here.

We talked a little bit earlier about costing data for the Super Hornet and the fact that costing data has been provided by the U.S. Navy. Would you and your company be prepared to publicly provide that costing data?

**Mr. Kory G. Mathews:** It would be better to go through the United States Navy for a request like that, sir. They can provide either what was provided back in 2008, which again was based on multi-year two pricing, not capturing the benefit of multi-year three and the approximately 10% savings on the third multi-year pricing. But I am sure, sir, that if a request were made for updated pricing and availability, again over to the United States Navy and the United States government but from a Boeing company, we would certainly look forward to supporting that request.

**Mr. Peter Braid:** If we received the consent to release that information, and specifically the information from 2008 and 2010, you wouldn't have any issue or concern with that?



•(1610)

**Mr. Kory G. Mathews:** What the navy has provided you from an overall pricing and availability.... Sir, what I would ask there is I can go back and look in detail at everything that was provided there, to see if in fact there was any proprietary information. As you can assume, pricing data is typically highly proprietary. I would go back and I can provide a response for the record on what we would be able to provide in conjunction with the United States Navy, sir.

**Mr. Peter Braid:** Okay, thank you.

The example of Australia came up. Could you clarify? Was the purchase from Australia an interim or a bridging solution for them until they acquired the F-35, or is that a longer-term solution?

**Mr. Kory G. Mathews:** Sir, I would request that you speak to the Royal Australian Air Force on the specifics of that question. In our discussions with them, they loved the Super Hornet. It's important to note that every one of the Super Hornets we have delivered to date has been ahead of schedule, a hallmark of this program. They are excited about those capabilities and plan to utilize those capabilities well into the future.

**Mr. Peter Braid:** Is the price the Australians paid per plane public information, and could you tell us what that was?

**Mr. Kory G. Mathews:** Sir, I do not know offhand if that is public information. Again, I will make the response and make sure that what has been provided openly in the press is certainly available for the record. If there is any specific additional request for additional pricing and availability, or to make what was released in 2008 available, we would come back and respond to you on that.

**Mr. Peter Braid:** Thank you.

Thank you, Mr. Chair.

[Translation]

**The Chair:** Thank you, Mister Mathews.

You have the floor Mr. Bachand.

**Mr. Claude Bachand:** Thank you, Mister Chair.

Mister Mathews, you seem rather reluctant to compare your aircraft with that of your competitors.

You must understand that we are requesting simulation data on the Boeing aircraft because members feel that 16 billion dollars for the Super Hornet or the F-35 is pretty exorbitant. We want to make sure that we got the best possible deal.

You say that it is not appropriate for you to comment on simulations or other issues. Do you mean that you consider this to be classified information? Is that the problem or is there some other reason?

[English]

**Mr. Kory G. Mathews:** Certainly any detailed discussion on performance would have security restrictions on a discussion like this today, to your question, sir. But what is important, I think, as opposed to drawing in this forum a very specific comparison, is I am highly confident in this weapon system. I am highly confident in its abilities to perform the roles it is asked to perform. I am highly confident in its abilities to perform roles as outlined in the first strategy, as well as the high-level mandatory capabilities. I am highly

confident in our price. That price is known; it's known today with no ambiguity. All of those things I want to make sure of, simply because in this forum I am not drawing a specific comparison at a detailed performance perspective.

Do I in any way, shape, or form believe that the Super Hornet would not be ideally suited for a next-generation fighter? I do believe it would be, sir.

**Mr. Claude Bachand:** Would you go as far as to tell us if the Boeing Super Hornet with the requirements that are being asked for by the Canadian government is a better airplane than the F-35?

**Mr. Kory G. Mathews:** I would say I think we're ideally suited to meet the requirements of the next-generation fighter.

[Translation]

**Mr. Claude Bachand:** I shall go on.

[English]

**Mr. Kory G. Mathews:** I'm confident in that, and it would not be appropriate for—

[Translation]

**Mr. Claude Bachand:** That cannot be five minutes already.

**The Chair:** Your time is nearly up. Each of you has four minutes so that everyone has a turn.

**Mr. Claude Bachand:** No point in digging my heels in then.

Could you tell us why the U.S. government chose the Lockheed Martin F-35 over the Super Hornet in 2001. Did the Canadians have a role in that decision as the Minister of National Defence claims?

•(1615)

[English]

**Mr. Kory G. Mathews:** Sir, if I understand your question, there's a little bit of a misnomer there. The Super Hornet has never been in competition with the F-35 program. It was not evaluated as part of the initial joint strike fighter down-select program. That was a competition between the Boeing Company and Lockheed Martin for that specific airplane. The Super Hornet was in no way, shape, or form involved in that competition.

I would also simply reiterate that, again, the F-35 does not replace the Super Hornet. Those two aircraft are operating in a complementary role past 2035 or 2040. That's the navy's design. If the question was why did they select F-35 over the Super Hornet, I do not believe, sir, it is the appropriate question to be asked, because those two have never been in competition with one another.

[Translation]

**The Chair:** Thank you.

Mr. Hawn now has the floor.

[English]

**Hon. Laurie Hawn:** Thank you, Mr. Chair.

On the question of the Australians, the Australians have made it very clear that the Super Hornet is a ten-year bridge from the F-111 to the F-35. It's the F-111 they were concerned about, but they've made a commitment to the F-35 and this is simply a bridge to that.

Will they fly the F-18's beyond that? They will. But they are clearly buying the F-35 instead of an extra 100 Super Hornets. Can you explain why?

**Mr. Kory G. Mathews:** Sir, in that discussion, I would go to the Royal Australian Air Force on what their specific requirements may or may not be.

**Hon. Laurie Hawn:** I agree.

**Mr. Kory G. Mathews:** However, I would also submit to you, sir, that to my knowledge there has never been a competition in Australia between a Super Hornet and an F-35. You would have to speak with them on the specifics of their analysis that led them to their projected force structure.

What I can offer up is that they are excited to have this aircraft operating today and well into the future.

**Hon. Laurie Hawn:** I would love to have a Super Hornet over an F-111 too.

In terms of numbers of aircraft, are there going to be about 560 Super Hornets, barring more sales and stuff? Is that a roughly accurate number?

**Mr. Kory G. Mathews:** If you look at the program of record there, yes, sir.

**Hon. Laurie Hawn:** Who are you currently marketing the airplane to?

**Mr. Kory G. Mathews:** Sir, we are active in numerous countries.

**Hon. Laurie Hawn:** Can you name some?

**Mr. Kory G. Mathews:** I would name a couple here, then there are many others we are also in competition for, but they would prefer to remain anonymous at this point in time. Some of the public competitions are certainly the Indian competition for the MMCA. That Super Hornet is the Boeing offering in that competition. When we look at Japan and the possibility for an RFP coming up first quarter of next year, potentially later, F-18 Super Hornet will be in competition there. If you look at and perhaps to be decided or announced in the near term is Brazil. Obviously we have been in competition there. We have had—

**Hon. Laurie Hawn:** Sorry, my time is short.

You may not be able to answer this, but I think you know the answer. Are any of those countries liable to be countries that Canada is going to be involved with side-by-side in military operations?

**Mr. Kory G. Mathews:** I would respectfully go to you on that, but if you're looking at traditional coalition forces, the answer to that would probably be no, sir.

**Hon. Laurie Hawn:** I'm going to come back again to what I think is the pivotal question. So far ten countries, nine within the MOU, have been doing this for many years, individually and together, and have looked—I know Canada has looked, the U.S. Navy obviously has looked—at a number of aircraft, Super Hornet and so on, and F-35, for many years. And all ten countries, very highly respected, technically qualified first world countries, have come to the same conclusion: that the F-35 is the long-term solution to their next-generation fighter requirements.

Can they all be wrong? Are we all wrong? Where did we get it wrong? What do you know that we don't know, that you haven't been able to share with us?

[*Translation*]

**The Chair:** Mister Mathews, you have the floor.

[*English*]

**Mr. Kory G. Mathews:** Sir, each country has their own unique requirements and/or capability needs. Each country would make those decisions on their own.

We've had numerous discussions with several of those countries, and those continue on an informal basis. What I think is important for this committee would be that in any analysis, I believe it is critically important that the analysis take into account a full complement of capabilities.

When I stand here today and share that I know that full complement of capabilities has not been provided, I cannot attest to the specifics of the detailed analysis that has gone on. What I can say is that any analysis like that is absolutely dependent upon the input, and that input needs to be a full complement of capabilities.

• (1620)

**The Chair:** Thank you, Mr. Mathews.

[*Translation*]

Mister LeBlanc, the floor is yours.

**Hon. Dominic LeBlanc:** Thank you, Mister Chair.

Mister Mathews, We are particularly concerned by the fighter's price tag. I mean the actual purchase price and the cost of maintaining the aircraft operational over a period of 20 years.

You talked to Mr. Hawn about specific aircraft requirements, such as rockets, missiles, etc. If the Government of Canada were to supply your company with a comprehensive list of requirements, which apparently you have not yet received ... Well, let us imagine for a moment that the Government of Canada were to provide your company with detailed technical specifications, including, as you have said, information on the various systems and missions.

Would you be in a position to provide the Government a fixed price? Were you to have all the necessary data, could you offer a fixed price? Would you be able to specify the price of the aircraft? Would you be able to provide a fixed price for the aircraft operational maintenance program? Could you provide this information to the Canadian taxpayer if you had all the necessary specifications in hand?

[*English*]

**Mr. Kory G. Mathews:** Absolutely, sir. Yes.

**Hon. Dominic LeBlanc:** A fixed-price, fixed-dollar figure. If the Government of Canada doesn't then change its options, like adding heated seats or a DVD or a sunroof, or something—

**Voices:** Oh, oh.

**Hon. Dominic LeBlanc:** We had that problem with the Chinook helicopters.

But if the requirements remain the same, the price is fixed. There's a guaranteed delivery date on a fixed price.

**Mr. Kory G. Mathews:** Yes, sir. On the fixed price, one thing that would be worth noting there is if you are also talking about fixed prices for 20 years of support, not just the procurement.

**Hon. Dominic LeBlanc:** And you'd be able to offer that fixed price as well.

**Mr. Kory G. Mathews:** I would share with you, sir, that would certainly be an option. We would likely submit to you that a more affordable option, because of some of the incumbent risks that occur over 20 years, might be to go ahead and price commensurate with aircraft delivery and then options beyond that. If the desire and the mandatory approach would be firm fixed price, that would certainly be something we could entertain, and we would provide supporting data for that.

**Hon. Dominic LeBlanc:** Thank you.

**The Chair:** Thank you very much.

Now I'll give the floor to Mr. Hawn.

**Hon. Laurie Hawn:** I want to stick with the Aussies for a second. We're talking about fourth-generation and fifth-generation airplanes. The Aussies sole-sourced the F-18E/F to replace the F-111, as a bridge to their fifth-generation airplane, which they sole-sourced as the F-35, after whatever evaluation they did, which, as part of the MOU, obviously we were involved with, as were the other eight countries that were involved with the similar evaluation.

The fact that the Aussies sole-sourced the Hornet, for whatever purpose, and they sole-sourced a fifth-generation airplane, which is not the Super Hornet, doesn't that suggest to you that the Super Hornet is not a fifth-generation airplane?

• (1625)

**Mr. Kory G. Mathews:** No, sir, it does not. Again, I would say this discussion around fourth and fifth generation has now almost become pure marketing, so I think a better discussion would be around very specific requirements and what weapon system best meets those requirements at the best price.

**Hon. Laurie Hawn:** Exactly. That's what ten countries have done, I would suggest to you.

I want to go back to costing for a minute, and my colleague can ask a question. Would you be prepared...? I know it's not your call, but would you have a concern if the U.S. Navy released the costing data that we received from them on Super Hornet publicly, and we could do a side-by-side comparison publicly tomorrow with the costs of Super Hornet as received from the U.S. Navy and the costs of F-35?

**Mr. Kory G. Mathews:** Sir, again, as I answered previously, I believe, depending upon the level of that pricing information, I would need to go back and ensure that there was not Boeing proprietary information that was released in that publicly. Again, that would be more up to the United States Navy.

One other point, though, sir, that I believe is important to make here is that, as with anything and as we are specifically now talking about cost, I would believe there is a difference between known

guaranteed pricing and projected pricing. So I believe that in any dialogue that would need to be considered, sir.

**Hon. Laurie Hawn:** Okay, I agree.

I'm sorry, you probably can't, but can you tell me the cost of an EF-18 in 2016 dollars, fully equipped?

**Mr. Kory G. Mathews:** Sir, at this point in time, the multi-year two price was approximately \$52.3 million. The current multi-year three price without engines is \$42.3 million in then-year dollars, so I would have to go back and make sure and do the math to equate it to.... And that is a domestic price to the United States Navy. Again, multi-year three, excluding engines, because those are procured separately, for this discussion here is \$42.3 million.

**Hon. Laurie Hawn:** But that's not the cost of the airplane. Those multi-year prices are minus a whole bunch of things that the airplane needs to have to operate.

**The Chair:** Shortly.

**Hon. Laurie Hawn:** Guns, jammers, engines. So that price means nothing. What's the full-up, go-to-war price of the airplane?

**Mr. Kory G. Mathews:** The full-up, go-to-war for a multi-year two pricing, come down again 10% on that, was approximately \$53 million, sir.

**Hon. Laurie Hawn:** Okay. That's not with all the equipment.

**The Chair:** Okay, thank you.

Thank you very much, Mr. Mathews.

We'll have to give the floor to another Conservative member.

Mr. Hawn, you still have two minutes, if you want to take it, or Mr. Braid. That's the last member.

Mr. Braid, three minutes.

**Mr. Peter Braid:** Thank you, Mr. Chair.

I'm using up some final time.

With respect to quantities of aircraft, the number that's being sold to the U.S. Navy is 500 and change, is that correct?

**Mr. Kory G. Mathews:** That's the total program of record, sir, with the multi-year three, 124 aircraft.

**Mr. Peter Braid:** Okay. Would you generally agree that there would be a better economy of scale if 3,000 to 5,000 planes were being purchased, as opposed to 500?

**Mr. Kory G. Mathews:** Certainly rate can impact cost. Projected rate and how fast one comes down a learning curve certainly would need to be factored into that.

**Mr. Peter Braid:** Would the same be true for ongoing maintenance costs and the purchase of spare parts for a higher volume?

**Mr. Kory G. Mathews:** That is a consideration. Probably a larger lever is overall reliability and maintainability positions for the incumbent weapon system you're talking about, sir.

**Mr. Peter Braid:** Okay, great.

We talked earlier about the production timelines for the Super Hornet. At this point, when are production lines scheduled to shut down?

**Mr. Kory G. Mathews:** At this point in time, on firm orders it is 2015.

**Mr. Peter Braid:** It's 2015.

**Mr. Kory G. Mathews:** Again, I would submit to you that as the program manager here I am confident that we will be producing these aircraft well past 2020. I think you need to look at even, for example, history on another line in St. Louis, and the ability to extend production there, sir. I'm confident in this weapon system. I'm confident it meets the requirements domestically and internationally, and I'm confident we'll be in production for a long, long time.

•(1630)

**Mr. Peter Braid:** Is that decision to shut down the production line, whatever year it may be, a U.S. government decision or a Boeing decision?

**Mr. Kory G. Mathews:** Ultimately, sir, that would be a Boeing decision, depending on what we see as production requirements going forward. We have requirements to meet the program of record.

**Mr. Peter Braid:** Who owns the equipment on the production line, Boeing or the U.S. government?

**Mr. Kory G. Mathews:** I believe you're probably talking specifically about tooling?

**Mr. Peter Braid:** Right.

**Mr. Kory G. Mathews:** Sir, I'm going to have to get back to you on that. I believe parts of the tooling is Boeing-owned, but I will get you a whole answer on that, sir.

**The Chair:** That's it. Thank you very much.

*Merci beaucoup, monsieur Mathews.*

We will suspend our work for two minutes. After that we'll have witnesses from Dassault Aviation.

Merci.

•(1630)

\_\_\_\_\_ (Pause) \_\_\_\_\_

•(1635)

[*Translation*]

**The Chair:** Welcome back. We will now resume the 32nd meeting of the Standing Committee on National Defence. Pursuant to Standing Order 108(2), we are continuing our study of the next generation of fighter aircraft.

Our next witness is Mr. Yves Robins, Dassault Aviation official representative.

Thank you for being here today Mister Robins. You have eight to ten minutes for your statement. Then members will have the opportunity to ask questions.

You have the floor.

**Mr. Yves Robins (Assistant Director, International General Directorate, Dassault Aviation):** Thank you Mister Chair, distinguished Committee members.

I would first like to thank you for your invitation to appear before you here today and for the opportunity to introduce our company and the Rafale fighter aircraft. It is both a privilege and an honour.

[*English*]

I'd like to first say a couple of words about our company. We are a rather peculiar company in the European aerospace scene, as we are probably the only aerospace manufacturer in the world still belonging to the founding family of the company. Our company was founded by the late Marcel Dassault. It's still owned in majority by Mr. Serge Dassault and his family.

Last year we had a turnover of about 3.5 billion euros. And 70% of our turnover comes from our civilian activities, as we share the privilege of being a world leader in the field of business jets with a Canadian company, Bombardier, and an American company, Gulfstream Aerospace.

We also have the peculiarity of having extensive experience in the field of combat aircraft development. In the last 60 years, about 7,500 aircraft have been delivered to 70 countries by Dassault—not only combat aircraft but also business jets, as well. And they have logged a total of 20 million flight hours.

Our experience is rather unique in Europe, where we are positioning ourselves as the main contractor in the field of combat aircraft and complex systems integrations. Our products, first of all the business jets.... We have delivered more than 2,000 business jets of the Falcon family. Even if we are competitors to the Canadian aerospace industry, as Bombardier is also producing a lot of business jets, we are also a partner of the Canadian aerospace industry, since Pratt & Whitney Canada is providing the engines for several of our business jets, among others, our latest, the Falcon 7X, which is a bestseller in its category.

Another program we are currently working on is the nEUROn program. The nEUROn program is a European cooperation program aimed at developing a technology demonstrator in the field of unmanned combat aircraft. And here we are touching on a topic you have already addressed during this meeting, which is stealthiness. Obviously, one of the UCAV's characteristics will be a very high degree of stealthiness. And its aim is to develop several technologies that the European aerospace industry will need in the next 35 or 40 years in order to develop a further generation of combat aircraft in the future.

And last but not least, our main program in the military field is the Rafale omni-role fighter. I shall spare you all the figures and technicalities of the aircraft. I'm at your disposal to answer your questions. Let me just quickly talk about the founding principles of the Rafale combat aircraft.

•(1640)

[*Translation*]

The first of the basic principles is the omnirole concept. It stems from the challenges faced by the French defence forces, which in 1995, operated a fleet of approximately 697 aircraft. The White paper on French Defence and National Security has set a goal of a single pool of 300 fighters in 2025. As a result, the Navy and the Air Force will be replacing seven different aircraft with one fighter.

The new aircraft had to be capable of performing aerial defence missions, deep strikes, close support, anti-shipping strikes and tactical and strategic reconnaissance. In addition, France specifically required nuclear strike capability as part of the French nuclear deterrent force.

The initiative currently provides for 284 Rafales to be built. The French Government has placed firm orders for 180. Approximately 90 have already been delivered. They entered service with the French Navy in 2004 and the Air Force in 2006.

The aircraft's second basic principle, which you have already discussed, is interoperability. The aircraft was designed to plug seamlessly into multi-national operations and to provide total interoperability with the hardware of North American and European NATO allies.

The interoperability capability is no longer just a principle but a tangible reality. It has shown its worth several times. The Rafale has been engaged in three combat missions in Afghanistan, where it demonstrated its interoperability in providing support for coalition troops. This same capability has also been tested in three operations aboard various U.S. Navy aircraft carriers. Rafales were deployed on the Enterprise and the Harry S. Truman, and then in June this year, on the Theodore Roosevelt. Four Rafales were embedded in a carrier-based F-18E Super Hornet unit for a week.

The aircraft's interoperability capacity was again documented just a few days ago by the signature of a co-operation agreement between France and the United Kingdom. Under this deal, British F-35s will in the future operate along side Rafales on the British and French aircraft carriers Prince of Wales and Charles de Gaulle.

The final basic design principle of the Rafale is the strong growth potential offered by the open architecture of its systems. The Rafale is required to be in operation with the French armed forces for between 30 and 40 years. As a result, it is essential that it have the capacity to adapt to evolving threats but also to advances in technology and weapons systems. The aircraft's open architecture allows for upgrading to successive standards.

I think I shall stop there for now. It would be a pleasure to answer any questions you may have.

• (1645)

**The Chair:** Thank you, Mister Robins.

Mister LeBlanc, you have the floor.

**Hon. Dominic LeBlanc:** Thank you, Mister Chair.

Thank you, Mister Robins for your presentation and for being here today. I would like to start with a couple of questions that I have already asked your Boeing counterparts. My colleagues will perhaps pick up on my line of questioning later if we have time.

I am sure that you are aware of the paper put out by the Government in October entitled: High Level Mandatory Requirements for Canada's Next-generation Fighter. I take it that you have seen this paper?

**Mr. Yves Robins:** Yes, we have seen the paper and I can tell you that the Rafale meets all the specified requirements.

**Hon. Dominic LeBlanc:** Great. Are you also aware of the testimony of the Lieutenant-General and Air Force Chief-of-staff before this Committee last week? He provided comments on this very paper. Having read his testimony, do you still believe that the Rafale meets the requirements described by Lieutenant-General Deschamps?

**Mr. Yves Robins:** Absolutely.

**L'hon. Dominic LeBlanc:** I have a further question on the price tag. It goes without saying that budgets are a bit tight these days for all governments, including those in Europe.

Imagine the Canadian government was interested in a fixed price... You heard the exchange with your counterparts from Boeing. You require very specific technical information based on very detailed requirements. Were the Canadian Government to provide this, would you be in a position to agree a fixed price for the aircraft?

**Mr. Yves Robins:** Do you mean right now or in a call for tenders? That would depend. It goes without saying that we are ready and willing to provide the Government of Canada with any information it may require.

**Hon. Dominic LeBlanc:** Imagine there were a call for tender, a very comprehensive open competition. Would your bid include a fixed price?

**Mr. Yves Robins:** I am not, at this point, in a position and do not have the authority to answer that question. However, I can tell you that we would give it very carefully and detailed consideration. However, I am not authorized to provide an immediate commitment on the issue you raise.

**Hon. Dominic LeBlanc:** I realize that my question is rather hypothetical since there are no plans for a "competition".

**Mr. Yves Robins:** Indeed.

**Hon. Dominic LeBlanc:** Obviously, for those countries purchasing European aircraft, spinoffs for their own industries are very important. They are important to Canada also. I would imagine that in the event of a competitive bidding process, your company would, as it has for previous hardware purchases, consider guaranteeing a specific amount of economic spinoffs for Canada based on the actual value of the purchase by the Canadian Government.

**Mr. Yves Robins:** Our company has a very long tradition of industrial cooperation with its customers. It is part of our corporate DNA. There are numerous examples of industrial cooperation with countries such as Greece, Belgium, Spain, the United Arab Emirates and Taiwan, which have purchased Mirage 2000, Mirage F1 and Mirage 5 fighters from Dassault.

On each occasion, we have shown our ability to adapt to the industrial cooperation needs of the client. Clients express their needs and it is our responsibility to provide a satisfactory response where possible.

Very often our response and proposals on industrial cooperation are governed by an extremely important principle in the area of technology transfer. In cases where the French Government decides to sell a fighter to a friendly nation, we do not restrict the transfer of technology. This is especially important today given the huge number of electronic components in fighter navigation and attack systems. It is also vital given the need for countries with the necessary capacity to be able to tailor weapons systems to their own requirements and to support the operational life and upgrading of the aircraft over a 30 to 40-year period. As a rule of thumb, it is essential, in cases like these, to provide client nations with software engineering workshops. These are designed to deliver the tools customers will need to maintain and customize the aircraft to their Air Forces' current and future requirements.

• (1650)

**Hon. Dominic LeBlanc:** Your reply to my question is very informative.

Thank you. I have no further questions.

**The Chair:** Thank you, Mister LeBlanc.

Mister Bachand, you have the floor.

**Mr. Claude Bachand:** Thank you, Mister Chair.

Mister Robins, does the term ITAR-free that I frequently hear Europeans using refer to the unrestricted technology transfers you mentioned?

**Mr. Yves Robins:** ITAR is a term specific to U.S. legislation. It is not part of European law. The Rafale fighter is a 100-percent French product. As a result, the French Government is free to choose to which countries it will transfer technology.

**Mr. Claude Bachand:** You said that the sole criterion was that the country be an ally. You would not therefore be in a position to transfer technology to China or Iran.

**Mr. Yves Robins:** The French Government has international obligations. I would point out that the European Union has imposed an embargo on the sale of defence systems to China. The French Government does not usually sell defence systems to rogue nations such as North Korea and the like.

**Mr. Claude Bachand:** Fine, I am not sure whether you know a former RAF Red Arrows aerobatic team pilot called Peter Collins.

**Mr. Yves Robins:** I know Mr. Collins very well.

**Mr. Claude Bachand:** After flying the Rafale, he said the following: "[...] simply the best and most complete aircraft that I have ever flown. If I had to go into combat, on any mission, against anyone, I would, without question, choose the Rafale." Mr. Peter Collins also compares the Rafale to the F-22 and F-35 later in the article. Unfortunately, I was only able to read up to this point in the article. The rest is only available on line.

Could you tell me what the rest of the article says? What comparisons does Mr Collins draw with the F-22 and the F-35? Could you provide me a copy?

**Mr. Yves Robins:** Well, look, it would be no trouble at all for me to send you a copy of the whole Collins article, which was published in the British review *Flight International*. I do not know what Mr. Collins said about the F-35 and F-22. However, I can tell you that the

Rafale went up against the F-22, which is the most powerful fighter in the World, during an exercise in the United Arab Emirates last year. It more than held its own. The Netherlands also tested the Rafale when they were shopping for their next generation fighter. The Dutch evaluated three aircraft: the F-35, the Rafale and the Eurofighter. Of a total possible score of 8.5, the F-35 finished with 6.97 points just 2 hundredths of a point ahead of the Rafale on 6.95. I would also point out that at that time the F-35 was not yet in production. As a result, the Dutch were only able to assess the F-35 on paper. However, a Dutch Air Force contingent came to Dassault to undertake a comprehensive in-flight evaluation of the Rafale. They flew several missions to assess for themselves how the Rafale handled.

We would have no hesitation in saying that the Rafale stacks up to other aircraft like the F-35.

• (1655)

**Mr. Claude Bachand:** Do you know the score of the F-22.

**Mr. Yves Robins:** The Dutch did not test the F-22.

**Mr. Claude Bachand:** The only other plane they assessed was the F-35.

**Mr. Yves Robins:** Yes, the F-35 and the Eurofighter.

**Mr. Claude Bachand:** They also tested the Eurofighter, did they?

**Mr. Yves Robins:** Yes.

The Eurofighter scored 5.88 points. This was reported in the Dutch press and in *The Telegraph* daily newspaper.

**Mr. Claude Bachand:** The Government has put a great deal of emphasis on stealth capability. Is the Rafale equipped with stealth characteristics?

**Mr. Yves Robins:** The Rafale is a stealth fighter. The Rafale was built for the French Air Force. They are our customer. Their approach is different from the one use in the F-35. The French Air Force has focused on a concept it calls "low observability". They define low observability as being a mix of stealth, passive weapon-system management and optimization of mission paths.

Let me explain. The Rafale's stealth features lie in its design, engineering, radar-absorbing coating and so-called hot-spot treatment. In addition, the Rafale is equipped with an optimized sensor system, which can be operated in passive mode during a mission to avoid detection. The Rafale's sophisticated, optimized low-level terrain following feature ensures a high mission success rate.

**The Chair:** Great. Thank you, Mister Robins.

Mr. Harris now has the floor.

[*English*]

**Mr. Jack Harris:** Thank you, Chair.

Thank you, Mr. Robins.

The Rafale aircraft... You've heard the discussions about generations—fourth generation, fifth generation. I even saw an article here suggesting that Boeing was developing a sixth-generation aircraft, even though they tell us that's only a marketing tool.

Is that meaningful for your company, sir, this talk of fourth generation or fifth generation? If it is meaningful, where does the Rafale fit into that?

**Mr. Yves Robins:** Frankly, sir, no. We consider this discussion about the generations as a pure marketing tool. Ever since the end of World War II, the philosophy of our company has been to develop successive prototypes and improve them with the improvements in technology. Our experience comes from the development and the building of more than 100 prototypes since 1946. Each time, we have built step by step on progressive improvements from one aircraft to the other.

Regarding the Rafale, I explained to you that one of the founding principles of the Rafale design is a very open, very high-growth potential thanks to an open architecture. That means what? That means that Rafale entered service in 2004 with the French navy. Today, we are in 2010. We have already seen three different improved standards within the Rafale system: F-1, which was purely air-to-air; F-2, which was air-to-air and air-to-ground; F-3, which is an improvement on F-2 with the added capabilities in anti-shipping missiles, reconnaissance, nuclear strike, and so on.

Rafale is not a frozen aircraft. Rafale has an evolutionary concept in its systems that allows it to keep pace with the development of the technologies, and there will be successive standards and improvements throughout the 30 years of the operational life of Rafale.

Now, how does a generation fit into this concept? Is F-3 going to be 4.87 generation; and F-4, tomorrow I shall wake up and say that today I'm going to be 5.3 generation? No, not really. The philosophy for the development of Rafale is completely different and is out of this generation debate.

• (1700)

**Mr. Jack Harris:** Thank you, sir.

The information I have suggests that the fly-away cost for a Rafale C, which I think is the air force model, was around \$82 million U.S. in 2008. I realize we're talking about what's in the plane, what kind of configuration, etc. Is that range of cost meaningful to even discuss?

**Mr. Yves Robins:** It is obviously extremely difficult to discuss prices, because of what those prices include on a series of how many aircraft, with which options, and so on. Roughly speaking today, the fly-away price of a Rafale is around 70 million euros, which is more or less consistent with that.

Obviously, a lot of things depend on it. What is important to know is that the price of the Rafale has always been in the French budget, and a recent report of the general accounting office of the French government states that ever since the beginning of the program in the 1990s and something until today, the price of the aircraft has only slipped by 4%, which is extremely low when you compare it with all the other programs of combat aircraft you can see in the western world.

**Mr. Jack Harris:** Sir, has your company had any discussions with the Canadian Forces or the Canadian Department of National Defence with respect to the possibility of your aircraft being considered as a replacement for the F-18?

**Mr. Yves Robins:** No, sir. The last contact we had with the Canadian government and air force was on February 22, 2006, when we received the delegation from the Canadian Armed Forces, a couple of officers, for a couple of hours in Saint Cloud. They had been briefed on the Rafale program, and I think as well on the nEUROn program, and that was it.

**Mr. Jack Harris:** I take from the fact that you're here that your company would be interested if there were an open competition.

**Mr. Yves Robins:** We must see what happens. Obviously, I'm... First of all, I am here to answer your invitation to provide you with information about the Rafale, and we are very grateful for this opportunity.

**Mr. Jack Harris:** You dealt with interoperability, but it's been suggested that the capabilities of the fifth-generation aircraft include sensors, data fusion, and survivability. Perhaps you could deal with survivability of your aircraft.

**Mr. Yves Robins:** Survivability comes mainly from the blending of the very low observability, the capability to operate with very strong electronic counter-measure equipment, capability to operate in a very passive way, in a very discreet way, and a very high level of sophistication within the systems, the redundancy of the systems, and so on.

[Translation]

**The Chair:** Thank you, Mister Robins.

Ms. Gallant, you now have the floor.

[English]

**Mrs. Cheryl Gallant (Renfrew—Nipissing—Pembroke, CPC):** Thank you, Mr. Chairman.

What would be the worldwide fleet size for the Rafale? You mentioned 180 for France, and then you mentioned 600. Worldwide at this point in time, what number of Rafale are on order?

• (1705)

**Mr. Yves Robins:** Today, the Rafale has been ordered by the French armed forces. There is a firm contract, a multi-year procurement contract for 180 aircraft out of a total requirement for the French armed forces of 284.

We are obviously in discussions with several countries for the possibility of exporting the aircraft. Some of the countries you may have heard of—for instance, Brazil, the Emirates, India with the MMRCAs competition. We foresee in the future a potential market for at least 300 of the aircraft. The aircraft will remain in production until at least 2025, something like that.

**Mrs. Cheryl Gallant:** Would there be greater economies of scale in costing if the worldwide fleet were 3,000 to 5,000 aircraft?

**Mr. Yves Robins:** It may be possible, yes. It depends, but I'm not a big authority.

**Mrs. Cheryl Gallant:** You mentioned that the cost of your aircraft, fully equipped to do the job, is 70 million euros. That's twice the price we've been quoted on the F-35s. Are those in today's dollars?

**Mr. Yves Robins:** They are not dollars, they are euros.

**Mrs. Cheryl Gallant:** Are they today's euros, or euros from 2015?

**Mr. Yves Robins:** I told the honourable parliamentarians that this was a rough idea, that's about it.

**Mrs. Cheryl Gallant:** That wouldn't include any royalties for the buyers, or anything like that.

Would you agree that there are more economies of scale in buying spares for a worldwide fleet of 3,000 to 5,000 aircraft, most of which will be under a common MOU, than for a fleet of a few hundred aircraft?

**Mr. Yves Robins:** I'm not a big authority. It all depends on the competitiveness of the manufacturer of those spares.

**Mrs. Cheryl Gallant:** And you're certain that the Rafale production line would remain in place for 35 years.

**Mr. Yves Robins:** The production line will remain in place at least until 2025.

**Mrs. Cheryl Gallant:** Until 2035.

**Mr. Yves Robins:** Until 2025.

**Mrs. Cheryl Gallant:** Until 2025, okay. So it won't go past 2050 and beyond; you have no plans for that.

**Mr. Yves Robins:** To go past 2050, did you say?

**Mrs. Cheryl Gallant:** Yes, the year 2050 and beyond. Will you have the ability to support parts and so on?

**Mr. Yves Robins:** Oh, well, there is a difference between the production of the aircraft and the capability to support the aircraft. We have always supported all our customers throughout the operational life of their aircraft. Today there are Mirage III and Mirage V operational since the end of the 1960s that we still support without too many problems.

**Mrs. Cheryl Gallant:** Have any of the other JSF MOU partners selected the Rafale as their long-term fighter solution?

**Mr. Yves Robins:** No. Today, the Rafale is only ordered by the French armed forces.

**Mrs. Cheryl Gallant:** Could you tell me why none of the other JSF MOU partners have selected it as their long-term fighter solution?

**Mr. Yves Robins:** I have no idea. They probably consider it as their best solution.

What I can tell you is that in one of those cases, namely in the Netherlands, we came out of the competition almost on par with the F-35. Frankly, I consider two one-hundredths of a point as more or less on par with the F-35.

**Mrs. Cheryl Gallant:** Why didn't they buy it, do you think?

**Mr. Yves Robins:** That's their sovereign decision.

**Mrs. Cheryl Gallant:** Okay.

If Canada had to manage its own sustainability, would we have full access to all the intellectual property immediately?

**Mr. Yves Robins:** It is the policy of our company and of the French government to give full access with no restriction to all the technological content of the aircraft a customer is buying.

**Mrs. Cheryl Gallant:** You've stated that you have a form of stealth, a low-altitude observability, and passive weaponry system for the Rafale, and given the open architecture.... Canada will need certain specifics for our 65 aircraft. Who would pay for all the research and development and retrofit that is specific to the Canadians if we were to order the Rafale?

● (1710)

**Mr. Yves Robins:** It is usually the customer who pays for specific developments.

**Mrs. Cheryl Gallant:** Do you think that the Rafale could be interoperable with the F-35 of our MOU partners over the long term, until 2015?

**Mr. Yves Robins:** Of course. If this would not be the case, it would mean that France would get out of any possibility of multinational operations with its NATO allies, which is not the case. The Rafale is fully interoperable with its allies. It will stay that way, and it will have the capability—and it has the capability now—to be fully integrated in a C4I environment with the allied systems like Link 16, with Crypto Radio. It has the capability to be included in a network-centric warfare. And like many aircraft of the future, it includes multi-sensor data fusion that will process the data.

[Translation]

**The Chair:** Thank you, Mister Robins.

Mr McKay, you have the floor.

[English]

**Hon. John McKay:** Thank you, Chair.

It seems awfully difficult to get a real handle on the costs. The F-35 went from \$50 million to \$70 million, and a previous witness from Boeing said their off-the-shelf price was \$52 million, \$42 million without engines—it wasn't clear that it actually came with wings—and your price seems to be 70 million euros, which on the face of it makes it slightly more expensive than the F-35. Yet you just said that in a competition you came within cooey of the F-35. Ultimately, you didn't succeed.

Tell me about that competition. Is that competition a breach of the memorandum of understanding among the various partners in the F-35?

**Mr. Yves Robins:** I'm sorry, I didn't understand very well. Is that competition a breach...?

**Hon. John McKay:** We've been told that we can't enter into this competition because of the memorandum of understanding, yet the Netherlands has the same issue. Why is it that the Netherlands can have a competition but Canada can't?

As far as you're concerned, it wasn't an issue.

**Mr. Yves Robins:** No, no... Well, the Dutch Parliament ordered the Dutch government to conduct an evaluation of the various types they had selected, and they did it.



**Hon. John McKay:** What were the airplanes that were in the competition?

**Mr. Yves Robins:** The F-35, Rafale, Eurofighter, and I think Saab Griffen was in it as well.

**Hon. John McKay:** What was the ranking of the airplanes?

**Mr. Yves Robins:** The ranking?

**Hon. John McKay:** Yes. How did they finish in the competition?

**Mr. Yves Robins:** As I told you, the F-35 and Rafale finished—

**Hon. John McKay:** You were virtually tied.

**Mr. Yves Robins:** Yes. The Eurofighter came next, and I think Griffen was.... They made a short list of three at a certain stage during the competition.

**Hon. John McKay:** The Hornet wasn't in the competition.

**Mr. Yves Robins:** No, the Hornet was not.

**Hon. John McKay:** Okay.

Recently, France and Great Britain entered into an understanding, at least, an historic understanding, really, to share defence information and capability. Does that affect your company in any way?

**Mr. Yves Robins:** It affects it in a very positive way, because it might very likely open the possibility for joint cooperation with the British aerospace, with BAE Systems in the field of UAVs.

**Hon. John McKay:** You said that you had—correct me if I'm wrong—something in the order of about 200 airplanes actually committed.

**Hon. Dominic LeBlanc:** There's a big hook that comes out here.

**The Chair:** Thank you, Mr. McKay. We really appreciate your presence in our committee.

**Hon. John McKay:** I'm charmed.

**The Chair:** I'll give the floor to Mr. Payne.

**Mr. LaVar Payne (Medicine Hat, CPC):** Thank you, Mr. Chair.

Thank you for coming, Mr. Robins.

I would like to follow up a little bit. You talked about the competition that took place between the F-35 and others. I wonder if you could give us some specific details on that competition. Was it a paper competition? Was it on price? Was it on capabilities, interoperability, stealth? Maybe you could give us some of that information.

• (1715)

**Mr. Yves Robins:** From what I remember, it was a comprehensive evaluation of the different models, with all the available means that the Dutch air force could have.

Obviously, at that time it was not possible to make an in-flight evaluation of the F-35, so the evaluation was made from the paper information provided by the manufacturer to the Dutch air force, whereas the Dutch air force went on the spot to where the other aircraft were manufactured and performed an in-flight evaluation of

those aircraft. That in-flight evaluation was a pretty comprehensive one. It involved several flights addressing several types of operational concerns. They made their evaluation and they came back with their conclusions, and the result of that evaluation was published in the Dutch press.

**Mr. LaVar Payne:** I haven't seen that, so I—

**Mr. Yves Robins:** It was in 2002.

**Mr. LaVar Payne:** Certainly it leaves some questions open on that whole process.

One of the other things I wanted to touch on, and one of my colleagues from across the way I think touched on it, is the industrial benefits. You said that certainly you have done that in the past. I'm wondering if you could tell us, with other countries that you have sold the Rafale to, what were the industrial benefits that were given to those countries? Is it dollar for dollar? You did talk about transferring technologies, so....

**Mr. Yves Robins:** I didn't talk about countries that bought the Rafale. So far the Rafale has been sold only in France, but I'm referring to programs such as the Mirage 2000, the Mirage F1, the Mirage III and Mirage V. Every time it depends, really, what the customer country wishes to have as an industrial return. For instance, when we sold the Mirage 2000 to the Greek air force, there was one part that was devoted to production of other aircraft. It was the production of Mirage 2000, even the production of Rafale.

**The Chair:** Thank you very much.

Do you have another question, Mr. Payne?

**Mr. LaVar Payne:** May I have one more question?

**The Chair:** You have 15 seconds.

**Mr. LaVar Payne:** Fifteen seconds.

In terms of the competition, they flew the other aircraft, but not the F-35?

**Mr. Yves Robins:** That's correct.

**Mr. LaVar Payne:** So the Dutch chose the F-35 on that basis, without even flying the F-35 to get the actual capabilities of that aircraft?

**The Chair:** Briefly.

**Mr. Yves Robins:** Yes, it was on the basis of the information they were provided with, regarding the F-35. I imagine Lockheed Martin opened their books and they went to Fort Worth and they got all the necessary information.

[Translation]

**The Chair:** Thank you very much Mister Robins.

That concludes the 32nd meeting of the Standing Committee on National Defence. I would like to thank the witnesses for their contribution to our proceedings. Thank you also to the members of the Committee. Enjoy the rest of the day.

The meeting stands adjourned.





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