Submission No 23

Review of the Defence Annual Report 2010 - 2011

Name: Mr Jack Warner

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To
Parliamentary Joint Committee on Foreign Affairs, Defence and Trade
Review of the Defence Annual Report 2010 - 2011

From
Jack Warner, Defence Hobbyist

"Senator JOHNSTON: We can go on like this for a while, Chair, I think the committee would really appreciate, Mr Price, if you could list the assumptions that were made with respect to this engagement. I think it would be very helpful for the members to understand exactly, because they can read the RAND report—that is a public document—and they can see what you have done and that will give—

Mr Price: No, sorry; you will not read a RAND report of that activity. That activity was done separately to the Pacific Vision war game, and the analyst who did that was subsequently released from RAND because it never existed.

Senator JOHNSTON: Do you have a problem providing those assumptions to us?

Mr Price: No."

I was surprised by the testimony, including Mr. Price's answer, because their work 'Pacific Vision 2008 / Air Combat Past, Present and Future' is available, there seems a blurring of the two even within Repsim submissions.

I was further surprised by the follow-up submission 5 and 7 'Pacific Vision 2008 –Revisited' answer, where the F-22 game seems to have been changed from 6 vs 72, to 24 vs 24 with the f-35 and fa-18 added.

I note that the full data sets of assumptions weren't included, which like the committee, I was also looking forward to seeing them.

This is the Air Combat Past, Present and Future, that Air Power Australia and RepSim did.

http://www.docstoc.com/docs/42891479/Air-Combat-Past-Present-and-Future

Slides 2 to 41 and slides 50 to 90 mostly consists of APA and Repsim's usual stuff

I draw your attention to slides 40 and 42 to 49 = said exercise.

In summary

No SAMs or ships

Three Flanker regiments, 72 x SU-35 begin attack on 6 x F-22 defending Taiwan

The max number of continuous on station F-22 from Anderson air base = 6 x F-22 with total 48 missiles.

American missiles have Pk of 1.0 = 100% kill rate.

Chinese missiles have Pk of 0.0 against the F-22 = infinite zero kills of the f-22

F-22 kill 48 x SU-35 and have no missiles left.

Remaining SU-35 go on to kill air-refueling tankers and AEW&CS with missiles allowed to kill these planes

With the refueling tankers killed, there is insufficient fuel for the F-22 to return to Anderson base 1565 nm away and divert to another air field.

This infamous exercise and the distortions around it has caused much discussion, RAND even issued a rebuttal. It was said that RAND went on further to claim that material within the power point that APA and Repsim did was an unauthorised analysis, which does not represent the views of Rand. For more clarification, I'd suggest the committee seek a detailed response from RAND.

As to the 24 vs 24 claims. "Big claims need Big evidence" I would also suggest that the committee seek independent assessment of where the game Harpoon 3 / H3MilSim fits into the world of Sims. Compared for instance with the examples given by LM, the Brawler, Thunder, Suppressor, SeaFan and the PacWar constructive simulation tools.

Here are some of the links to RAND's statements and discussions.

http://www.rand.org/news/press/2008/09/25.html
"Recently, articles have appeared in the Australian press with assertions regarding a war game in which analysts from the RAND Corporation were involved. Those reports are not accurate. RAND did not present any analysis at the war game relating to the performance of the F-35 Joint Strike Fighter, nor did the game attempt detailed adjudication of air-to-air combat. Neither the game nor the assessments by RAND in support of the game undertook any comparison of the fighting qualities of particular fighter aircraft."

http://www.brisbanetimes.com.au/articles/2008/09/11/1220857689496.html
"WA Liberal backbencher Dennis Jensen said he had spoken to a third party with knowledge of the final classified test results who had claimed the JSF had been clubbed like baby seals by the simulated Sukhois, The West Australian reported"

http://www.abc.net.au/news/2008-09-24/new-us-bought-air-force-fighters-inferior/520278
"Editor's note**:** Following a complaint, this report has been found to lack proper context on the nature of the Rand report, which the company has claimed is an unauthorised analysis which does not represent the views of Rand."

http://www.abc.net.au/news/stories/2008/09/29/2377266.htm
"But Liberal MP Dennis Jensen has dismissed that. He says a secret RAND briefing document for a war-game last month condemned the Joint Strike Fighter as being "double inferior", but he says now RAND is trying to distance itself from that assessment. Dr Jensen says the Australian public deserves answers and he is demanding to know whether the Joint Strike Fighter performed poorly in the recent war-game exercise."

Dr Jensen was said to dismiss RAND's statements, as per the above link. I assume Dr Jensen is just being a Politician and will ask for a non-classified briefing when his party is in power. Where upon, I'm sure he will have an epiphany of insight about the cost and capability of the f-35, agreeing with the already stated Liberal Party conclusion.
Given the Polls and that the 2012/13 decision has been shifted 2 years to 2014/15, which is after the next election. It will be interesting times ahead.

I think the F-35 price and slippage is typical of the US procurement system, it's not as if we haven't been down this road before.
The cost rises are more in the SDD that we are insulated from, rather than in the/our URF. There are more important issues that I would focus on, but I'll put in my 2c on the price, seeing it's the hot topic
I read that ADF will provide their price update later this year. I include the latest USA Department of Defense SAR for reference until then. As you would all know, we buy at USA URF for the build year of our order and after that we have our own procurement cost, acquisition cost and lifetime ownership cost, which other than the URC, are obviously different to the USA costs.

The F-35 4 broad cost groups, the recurring flyaway, procurement, acquisition and the total ownership life cost are a constant source of confusion, especially when they are jumbled; one person uses one cost and the other another.
It gets even worse with the dollar value, BY base year and TY then year dollars are totally different

http://www.dod.gov/pubs/foi/logistics_material_readiness/acq_bud_fin/SARs/DEC%202011%20SAR/F%20A-18E%20F%20-%20SAR%20-%2031%20DEC%202011.pdf
For a simple example, our F/A-18F URF cost us about US $60 M, an all up price of AU $6 Billion or $250 M each at that stage for 10 years.
Both the $60 M and the $250 M are correct and there are several prices in between and after, it just depends on what and how you count.

The USA DoD has changed their BY/base year costs from the value of year 2002 dollars to the value of the year 2012 dollars for the current SAR, which gives it a natural increase. It included partner and some 19 FMS, they haven't included Japan and the other 20 that Israel wants in this SAR which will alter the price, but they will be in the next SAR. They also split off the engine to its own cost charts.

I'll show both the "BY2012 $M" and the "TY $M", which is a "and Then next Year" running tally. It adds the next year costs in its year's dollar value to the year 2037. It gives the highest APUC/PUAC cost and is favored by those that like to do that.
The BY/base year is easier to get your head around because everything is brought to a single year dollar value. It doesn't matter if it's in year 2001 or 2040, it has meaning as long as everything is valued in the same year's dollar value.

http://www.defense-aerospace.com/dae/articles/communiques/F-35Dec11FinalSAR-3-29-2012.pdf

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F-35 Aircraft

Unit Cost History

	Date	BY2012 $M PAUC	BY2012 $M APUC	TY $M PAUC	TY $M APUC
Original APB	OCT 2001	74.567	60.632	81.298	68.934
APB as of January 2006	MAR 2004	94.837	73.845	100.407	81.826
Revised Original APB	MAR 2012	112.483	91.827	135.010	115.697
Prior APB	MAR 2007	104.363	83.467	113.318	94.857
Current APB	MAR 2012	112.483	91.827	135.010	115.697
Prior Annual SAR	DEC 2010	132.900	109.536	154.413	132.806
Current Estimate	DEC 2011	112.529	91.827	135.065	115.697

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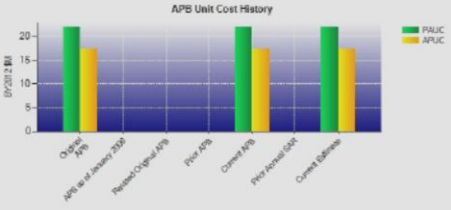
F-35 Engine

Unit Cost History



	Date	BY2012 $M PAUC	BY2012 $M APUC	TY $M PAUC	TY $M APUC
Original APB	MAR 2012	21.981	17.328	25.979	21.708
APB as of January 2006	N/A	N/A	N/A	N/A	N/A
Revised Original APB	N/A	N/A	N/A	N/A	N/A
Prior APB	N/A	N/A	N/A	N/A	N/A
Current APB	MAR 2012	21.981	17.328	25.979	21.708
Prior Annual SAR	DEC 2010	N/A	N/A	N/A	N/A
Current Estimate	DEC 2011	21.989	17.328	25.990	21.708

TY $M US dollars for the combined F-35 A,B,C buy to year 2037
The Program Acquisition Unit Cost (PAUC) inc. engine = $161 M
The Procurement Unit Cost (APUC) inc. engine = $137.4 M

BY2012 $M US dollars for the combined F-35 A,B,C buy
The Program Acquisition Unit Cost (PAUC) inc. engine = $134.5 M
The Procurement Unit Cost (APUC) inc. engine = $109.1 M

As per charts below,
Average F-35**A** Unit Recurring Flyaway (URF) Cost inc. engine = $78.7 M
This is close enough to the 2008 DMO estimate for me, although the Aussie average URF will be slightly less because we are buying in specific years. As per page 39 and 54 (RF/60=URF) for year 2018, the F-35A is $72.5 M URF in BY2012$.

Average F-35**B** Unit Recurring Flyaway (URF) Cost inc. engine = $106.5 M
Average F-35**C** Unit Recurring Flyaway (URF) Cost inc. engine = $87 M

Page 61, F-35 Aircraft Unit Cost Report

Unit Cost	BY2012 $M Revised Original UCR Baseline (MAR 2012 APB)	BY2012 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	276482.2	276483.0	
Quantity	2458	2457	
Unit Cost	112.483	112.529	+0.04
Average Procurement Unit Cost (APUC)			
Cost	224333.7	224332.9	
Quantity	2443	2443	
Unit Cost	91.827	91.827	0.00

The DoD average F-35 Aircraft Unit Recurring Flyaway (URF) Cost consists of the Hardware (Airframe, Vehicle Systems, Mission Systems, and Engineering Change Order) costs over the life of the program. The URF assumes the quantity benefits of 19 Foreign Military Sales aircraft and 697 International Partner aircraft.

F-35A (Conventional Takeoff and Landing) URF - $67.8 M (BY 2012)
F-35B (Short Takeoff and Vertical Landing) URF - $78.8 M (BY 2012)
F-35C (Carrier Variant) URF - $76.1 M (BY 2012)

Page 64 F-35 Engine Unit Cost Report

Unit Cost	BY2012 $M Original UCR Baseline (MAR 2012 APB)	BY2012 $M Current Estimate (DEC 2011 SAR)	BY % Change
Program Acquisition Unit Cost (PAUC)			
Cost	53916.4	54028.1	
Quantity	2458	2457	
Unit Cost	21.935	21.989	+0.25
Average Procurement Unit Cost (APUC)			
Cost	42332.9	42332.9	
Quantity	2443	2443	
Unit Cost	17.328	17.328	0.00

The DoD average F-35 Engine Unit Recurring Flyaway (URF) Cost consists of the Hardware (Propulsion and Engineering Change Order) costs over the life of the program. The URF assumes the quantity benefits of 19 Foreign Military Sales engines and 697 International Partner engines.

F-35A (Conventional Takeoff and Landing) URF - $10.9 M (BY 2012)
F-35B (Short Takeoff and Vertical Landing) URF - $27.7 M (BY 2012)
F-35C (Carrier Variant) URF - $10.9 M (BY 2012)