



Submission No 7

Review of the Defence Annual Report 2011 - 2012

Organisation: REPSIM Pty Ltd

REPSIM PTY LTD

30 May 2013

The Chair, Defence sub-Committee
Joint Standing Committee on Foreign Affairs, Defence and Trade
Parliament House
CANBERRA ACT 2600

Dear Senator Furner,

RESOLUTION OF AN ACCUSATION OF MISLEADING PARLIAMENT

You will recall that office holders of REPSIM Pty Ltd gave evidence on 7 February 2012 to the Committee chaired by you, during the Review of the Defence Annual Report 2011-12.

The essence of our presentation to the Committee was that, in work done in collaboration with analysts from the RAND Corporation, we designed and produced constructive simulations to the specification and satisfaction of those RAND Corporation analysts Dr John Stillion and Scott Perdue that indicated that the F-35A Joint Strike Fighter might be combat-ineffective against advanced integrated air defence systems that incorporated high frequency over the horizon radar and threats such as the Su-35S, now entering service with the Russian Air Force.

The scenario results presented were of 24 Chinese Su-35S vs 24 USAF F-35A set in the East China Sea in 2018 in the context of a possible Chinese advanced Integrated Air Defence System incorporating High Frequency Over-The-Horizon-Radar. Since the 7 February 2012 Committee meeting, the Chinese Air Force has ordered 24 Su-35S aircraft in order to equip a Regiment of the PLAAF – a prescient forecast by Dr John Stillion.

The purpose of the simulations was to illustrate the analysis done by the RAND Corporation in a presentation by Dr John Stillion and Scott Perdue titled 'Air Combat – Past Present and Future' on the possible outcomes of air combat involving the F-22 and the F-35A. The presentation was given to senior USAF Officers attending 'Pacific Vision 2008' activity at the Pacific Command (PACOM) in Hawaii.

In response to questions by Senator David Johnson, REPSIM Pty Ltd provided a PowerPoint presentation, subsequently posted as Submission 7, which included the following:

In 2008 the RAND Corporation produced a scenario for consideration by Pacific Command (PACOM) staff and others using the F-22 and the F-35A against projected Chinese capabilities;

RAND, however, did not have the tools or skills to build a constructive simulation of the scenario that included High Frequency Over The Horizon Radar (HF OTHR) and selective mission profiling in an integrated combat arena,

RAND staff sought assistance from REPSIM to convert their data into a H3 Pro simulation that was reasonable and representative of the scenario

Note that at Annex A, Slide 42 of the RAND presentation was included as Slide 5 of the PowerPoint response to Senator Johnson to show that the REPSIM simulation results presented to the Committee were constructed directly from the RAND Corporation presentation at Pacific Vision 2008.

In discussions with the RAND analysts at the time they advised that they were working with a campaign level tool that operated at the day to day level and did not provide for the ability to delve down into the individual entity engagements and interactions. REPSIM office holders, having worked with the RAND Corporation analysts over several months in conjunction with Air Power Australia principals, offered to construct an H3 Pro simulation, 'pro-bono' to showcase the our capabilities in the expectation of providing professional services in the future.

We can table correspondence at a Committee hearing to provide evidence of this research and collaboration.

The Weekend Australian of 25-26 May 2013 in a Defence Special Report published an article by Dr Andrew Davies titled 'F-35 will be capable all-rounder'. The by-line noted that: '*Andrew Davies is the senior analyst for defence capability at the Australian Strategic Policy Institute. The views here are his own. Disclosure: Lockheed Martin is a corporate sponsor of ASPI.*'

In this article, Dr Davies states:

'A little background research would have gone a long way. Not only has RAND publically distanced itself from the results presented to parliament, and elsewhere – including Four Corners – but any implication that the company [REPSIM Pty Ltd] produced the simulation as researcher, collaborator or contractor of RAND is simply not true.'

The absolute statement by Dr Davies regarding what REPSIM Pty Ltd did not do for the RAND analysts is a prima-facie accusation that REPSIM Pty Ltd Office Holders misled Parliament.

It is the claim made by Dr Davies that 'is simply not true'. My response to the Committee indicates that we were working with RAND staff and for Mr Davies to falsely claim that we were not, is accusing me of an offense of false-witness which your opening remarks regarding the obligations of witnesses giving testimony very clearly defined.

The release of the presentation was approved by the RAND Corporation before Pacific Vision 2008 occurred. The presentation was compiled in collaboration with Dr Carlo Kopp and Mr Peter Goon of Air Power Australia - they also appeared before the Committee on 7 February 2012. Slides 17, 18 acknowledge their contribution, and Slide 38 uses an Air Power Australia graph. Dr Kopp and Mr Goon were independent reviewers of the RAND presentation.

A Backup Slide No 80 of the Presentation contains these words:

- *F-35A is "Double Inferior" relative to modern Russian/Chinese fighter designs in visual range combat*

Inferior acceleration, inferior climb, inferior sustained turn capability

Also has lower top speed

Can't turn, can't climb, can't run

These statements were to have dire consequences for Dr Stillion and Scott Perdue. Their employment contracts were summarily terminated. The termination caused Dr Stillion great personal distress, and he asked his REPSIM and Air Power Australia colleagues not to contact him – a request we have honoured.

RAND Corporation, despite having previously cleared the brief through the internal peer review and approval process, did distance itself from the

implications of the briefing with the following statement released on 25 September 2008:

"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"

That is correct and I stated that we did nothing associated with the Pacific Vision wargame. While this statement addresses what was presented at Pacific Vision 2008, it is not germane to the issue of Dr Andrew Davies stating in absolute terms that officer holders of the company REPSIM Pty Ltd were not conducting research and collaborating with staff of the RAND Corporation.

The reason why the simulation videos were not embedded in the RAND PowerPoint presentation was that they were not finished until late July 2008, and had to be run separately as stand-alone screen-capture movies.

At this point, we should be crystal clear what is at stake. REPSIM's results for specific engagements between the F-35A JSF and the Sukhoi Su-35S if 'Reasonable' (accurate within experimental tolerances,) and 'Representative' (depict the entities with fidelity,) are that the F-35A JSF could be 'combat ineffective' in some engagements. This means that nations like Australia that might rely on its combat capabilities for national security are at risk of defeat by superior forces.

The implications for the USA, while serious, are not as dire, as the US has other alternatives, including access to the F-22A Air Dominance Fighter and other powerful capabilities to counter military aggression.

Clearly, if the JSF is suspected of potentially being combat inferior in particular circumstances to aircraft being fielded at present, and even more inferior to future aircraft like the Sukhoi T-50 PAK-FA, the Chengdu J-20 and the Sheyang J-31, it would be open to question if a Nation would order the JSF should it be the only air combat capability into the nations' future. Consequently, there is a strong commercial imperative by Lockheed Martin to denigrate the REPSIM Pty Ltd simulations and promote their own. Commercial imperatives then might come into conflict with national

security imperatives. ASPI, in accepting Corporate Sponsorship from Lockheed Martin, could also become 'conflicted' when assessing the veracity of such analyses.

Representatives from Lockheed Martin and the Australian Department of Defence claim that their simulations indicate that the JSF is 'combat effective', but refuse to allow the simulations and their contexts to be independently verified or validated, and under questioning by Dr Jensen, even refused to advise the Committee what adversary aircraft had been assessed and in what context, making the claim that the information is classified. You will be aware of the recent changing performance metrics approved for the JSF ranging from acceleration, rate of turn, system latency, etc. so the question arises on what values are these Lockheed Martin simulations constructed?

The REPSIM derived Loss-Exchange-Rates (how many you lose compared to the losses of the adversary), as reported to the Committee, are entirely consistent with those disclosed by Aviation Week in an article. 'Raptor's Edge' dated 9 February 2009.

Senior Officers of the USAF can speak with more authority on these matters, as they have detailed access to classified project performance assessments on which to base their assessments. As an example, General 'Hawk' Carlisle, Deputy Chief of Staff Operations, Plans and Requirement, and now Commander of PACAF, has made several statements regarding the capabilities of the JSF.

He was reported in Aviation Week 08 March 2012 (i.e. a month after our appearance before the Committee) as saying:

"Then there is the conundrum of determining how capable a Block 1 or 2 F-35 is against sophisticated enemy air defenses.

*"Software is a huge challenge to provide the needed Block 3 upgrade", says Carlisle. "We're not making progress as fast as we would like. We're redoubling our efforts to get better at it. [Not having the upgrades] means less capability. **Could you employ it against a very capable anti-access, aerial-denial threat? Probably not.**" (My emphasis.)*

In The Air Force Times he stated:

Carlisle said that the F-35 could be a valuable combat asset even with the earlier Block 2B software.

*"Block 2B has capability that if the combatant commander needed it, we would deploy it. **Would it be IOC? No,**" he said.*

*"We in the Air Force designated a set of capabilities to include [Suppression of Enemy Air Defenses], [Destruction of Enemy Air Defenses], air-to-ground and **some air-to-air capability** that we consider the minimum required for initially operational capable," he said. (My emphasis.)*

What is particularly concerning in this statement is that in the last paragraph General Carlisle is discussing the capabilities of the F-35A with Block 3F software, and there is considerable doubt about when, and even if, this complex software will be produced to its original specification. Australia has reason to be concerned over ambitious combat system software promises if we think back to the Collins Class submarine combat system and the initial advice provided to parliament before it was discarded and we had to go to the US for a solution.

Most confronting is the '**SOME air-to-air capability**' statement. The word 'some' should ring alarm bells for those nations relying on the JSF for national security. As noted above, the US has designed the F-22A Raptor as its Air Dominance capability backed up by F-15s, and the JSF has a secondary interdiction role. In fact the most recent report on the JSF states "The CTOL will be a stealthy multi role aircraft, **primarily air to ground**, for the Air Force to replace the F-16 and A-10 and complement the F-22." (source: JSF Selected Acquisition Report (SAR), December 31, 2012 issued May 2013.) Emphasis is mine.

When REPSIM Pty Ltd conducts simulations of the Su-35S with its lethal primary role of air to air combat against a F-35A JSF with '**some air-to-air capability**' it is entirely reasonable that the specialist air combat fighter might dominate in an advanced integrated air defence environment, as it does in the results we described to the Committee.

General Carlisle is again quoted by Defence Tech in this article:

<http://defensetech.org/2012/09/20/chinese-af-making-stealth-gains-on-us/>

Here are some quotes:

The Chinese media ploy caught the attention of Air Force Gen. Herbert Carlisle, commander of U.S. Pacific Air Forces. He said Wednesday at the Air Force Association annual conference that the

U.S. is still way ahead of the Chinese in respect to stealth jet fighters, but the Chinese are catching up.

"The [People's Republic of China] with respect to stealth capability, they are behind us, but they will develop and they will get better, and we certainly can't rest on our position," Carlisle said. It's striking how similar the J-31 to the U.S. F-22 and even the F-35, in some regards. However, as John Reed with [Foreign Policy](#) notes, "simply having a stealthy shape does not mean the Chinese planes are truly stealth planes. Modern stealth aircraft involves the issues of special radar absorbent coatings, along with heat and electronic signature masking technology."

Carlisle pointed out that the U.S. still has a considerable lead in the development of stealth aircraft. The F-35 program has faced considerable roadblocks and the F-22 fleet was slashed from what Air Force leaders had wanted, but the U.S. still has fifth generation fighters in the fleet.

He warned the Air Force can't afford to rest on their laurels. "I think whatever advantages we have technologically will still be there, but they won't last as long," Carlisle said.

General Chris Bogdan, JSF Project Executive Officer, is also concerned about the ability of Lockheed Martin to deliver the essential Block 3F software, again we need to note that it confers only 'some air-to-air-capability'. This is his testimony given to the US Senate Armed Services Committee on 24 April 2013:

Development Program Performance

*The F-35 development program continues to execute to the baseline approved at the March 2012 Milestone B recertification Defense Acquisition Board. **My biggest concern in development is software.** I am **moderately confident** that the program will successfully release the Block 2B and 3I capability by 2015 and 2016, respectively.*

However, I see more risk to the delivery of Block 3F, our full warfighting, capability by 2017.

I will have better information to assess if we can meet our Block 3F promises after the Block 3 Critical Design Review and after at least six months of flight test on our 2B software, both of which are currently scheduled for early summer, 2013. (My emphasis.)

The statements by the USAF's chief war-fighter in the Pacific and the JSF Program Executive Officer should be cause for grave concern to the Committee. What they are advising, in public, is that the JSF project is experiencing difficulties producing essential war-fighting software, and that even if the 'full warfighting' software Block 3F is produced, it still only delivers '**some air-to-air capability**'.

These assessments are in effect what the 'Reasonable and Representative' REPSIM Pty Ltd simulations illustrated. The simulations produced for the RAND analysts of engagements of the F-35A JSF vs the Su-35S conferred Block 3F capabilities on the JSF (and included the 'high power .. tightly collimated beam' mentioned by Mr Davies in his article). The Loss-Exchange-Rates (LER) for the F-35A vs Su-35S were 2.4:1. For the F-22A vs Su-35S were 1: 2.1. These results are entirely consistent with the design of the F-22A as an Air Dominance fighter and the JSF as an interdicator with 'some air-to-air' capabilities.

Returning to the matter of Dr Davies falsely claiming: "*any implication that the company produced the simulation as researcher, collaborator or contractor of RAND is simply not true,*" I ask that the Committee call Dr Davies to demonstrate the veracity of his claim.

I and my REPSIM colleague Mr Christopher Mills, AM would be pleased to be called before the Committee to provide evidence on oath, and to table documents that demonstrate the veracity of the statement I made in Reply to Senator David Johnson and published in Submission 7.

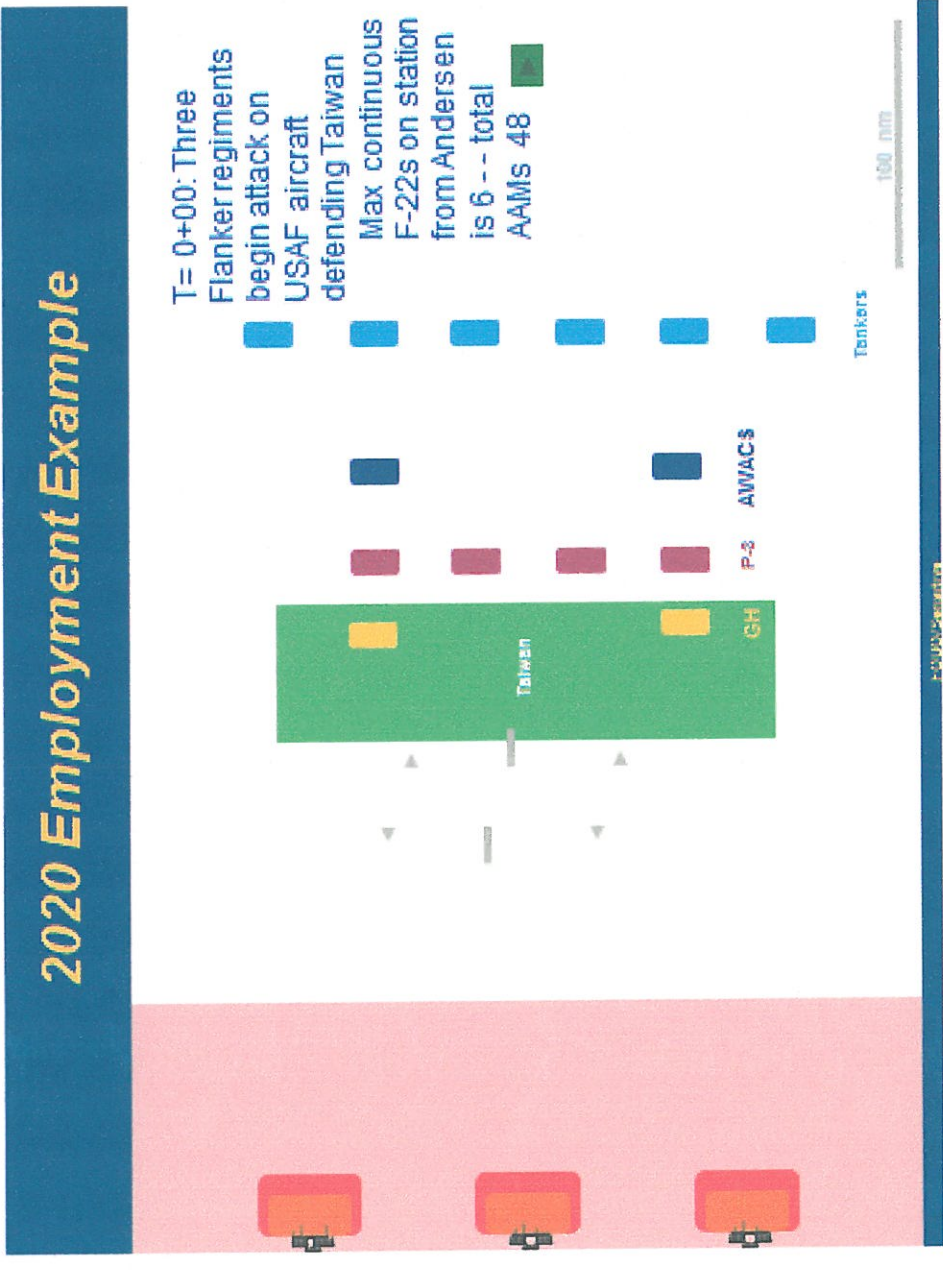
I request that this letter be posted as a Submission to the Committee.

Yours sincerely,



Michael Price
Managing Director
REPSIM Pty Ltd

RAND Air Combat – Past Present and Future Slide 41



REPSIM Submission 7 Slide 2



PROJECT AIR FORCE

Air Combat Past, Present and Future

John Stillion

Scott Perdue

July 2008

FOUO/Sensitive

REPSIM Submission 7 Slide 5

