



Submission No 19

Inquiry into Australian Defence Force Regional Air Superiority

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Submission to the Joint Standing Committee on Foreign Affairs,
Defence and Trade
Inquiry into Australian Defence Force Regional Air Superiority

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To the Secretary of the Committee,

If the Royal Australian Air Force is to maintain the air superiority it has enjoyed unopposed for the past 40 years, then the current plan envisioned for the RAAF beyond 2020 will simply not do.

The current planning for RAAF envisions a force of 100 Lockheed Martin F-35 Joint Strike Fighters supported by force multipliers including five EADS/Airbus A330-200 Multi-Role Tanker Transports, six Boeing E-737 Wedgetail AWACS and the Jindalee Over The Horizon Radar Network.

Without a doubt it is an impressive force structure but is it truly what Australia needs and is it really good enough?

While it is impossible for Australia, in terms of air power, to compete with the regional superpowers, the US and China, it is possible for Australia to maintain a small, cutting edge and lethal Air Force capable of defending Australia and its strategic and economic interests.

Over the past five years, we have seen more change in terms of air power in South-East Asia than we have over the past forty years, with the downfall of the Soviet Union in 1991 and a teetering Russian economy, we have seen large amounts of East Bloc military equipment being exported to second and third world countries by a Russian government in desperate need of hard currency. In the process, the Russian State Arms Export Agency, Rosoborne, has carved out a niche for itself in the international arms industry by exporting advanced air defence technology previously unavailable to even the most loyal client states of the Soviet Union including the Sukhoi SU-27SK/30MKK fourth-generation fighter and S-300PMU (SA-10) long-range area defence Surface-to-Air Missile system. Our nearest neighbour, Indonesia has expressed a strong interest in both systems, having only purchased the previous, and while the TNI-AF's Sukhoi's do prevent a strategic risk to Australia, especially to our oil and gas installations in the North-West Shelf region, the latter would significantly reduce our long-range strike capability. Forty Years previous, the only real threat to Australia's aerial dominance in South-East Asia was from the small fleet of TU-95/142 Maritime Strike and Reconnaissance aircraft based at Cam Ranh Bay in Vietnam which could have potentially threatened Australia's shipping lanes into Asia, apart from this however, there was no real contest to Australia's fleet of Dassault Mirage III tactical fighters (and later, the McDonnell Douglas, now Boeing, F/A-18A Hornet) and General Dynamics F-111 fighter-bombers, it was during this period of complacency, I believe, that the poor decisions were made that have led to the situation we find ourselves in now, the deterioration of our regional aerial superiority.

Ever since World War II, the ADF has maintained a policy of forward defence, symbolised in the Menzies Government's purchase in 1963 of the General Dynamics F-111 fighter-bomber, perhaps the best defence purchase of the post-WWII era. The F-111 is a unique aircraft, able to carry a payload of 25,000lbs of guided and unguided weapons (or a mix of both) 1,200nm, given the Royal Australian Air Force's unenviable position of having to defend one-tenth of the earth's surface, the F-111 was the perfect aircraft to replace the fulfil the RAAF's long-range strike mission. Like it's US contemporaries, the B-52 Stratofortress and B-1B Lancer, the F-111 has defied all estimates of range and capability, throwing off the shackles of it's troubled development period to become the mainstay of the RAAF Strike and Reconnaissance Force and Australia's strategic deterrent.

The proposed early retirement of the F-111 announced by the Defence Department in early 2003 is naïve at best, negligent at worst. The costs of maintenance and operation of the RF-111C/G fleet are constantly over estimated, with the F-111 portrayed as an intolerable financial burden on the defence budget and the most expensive aircraft in the RAAF's inventory, this is in-fact untrue.

If one analyses the Defence Annual reports from FY 1998-2003, one will find that it is indeed the F/A-18 Hornet, the nation's tactical fighter that is the most costly airborne platform to operate, costing the Australian taxpayer \$1, 398.1 Million Dollars a year, 30.7% of the RAAF's annual budget followed by the C-130H/J, B-707 at \$892.6 Million (19.6%) and AP-3C Orion at \$788.4 Million (17.3%) with the F-111 fleet costing the public \$787.1 Million Dollars a year, 17.3% of the RAAF's annual budget.

(1)

According to the September 2005 edition of *Defence Today* magazine, the total project cost of ownership for the F/A-18A/B was \$8,032.40 million (\$113.1 million per aircraft) compared to \$2,023.00 million (\$72.25 million per aircraft) for the RF-111C/G.

Another myth perpetrated by Defence is that the F-111 is a decrepit old bird, constantly at danger of falling out of the sky, yet it's airframe has a longer structural fatigue life than the F/A-18 because of the it's tough mission requirements, 10,000 hours compared to the Hornet's 6,000, allowing it to go to 2020 without any major problems. In addition, 82nd Wing's current supply of Pratt and Whitney TF-30 engines will last the fleet until 2020. (2)

This is not to mention the almost inexhaustible number of spare parts and airframes located at the Aerospace Maintenance and Regeneration Centre (AMARC)—the Boneyard—at Davis-Monthan Air Force Base in Arizona.

Now we have ascertained the F-111 fleet can indeed go to 2020, the date determined by the Defence Science and Technology Organisation under its Sole Operator Program, there are a series of upgrades that can be undertaken to insure the F-111's retains it's edge as the most potent strike aircraft in the region, these include:

- Retrofitting the F-111 fleet with a glass cockpit arrangement comprising of AMLCD Function Panels and rebuilt SU-46 HUDs from old USAF F-111D's

and a 14-15" Fusion Display for RHAWS Threat Footprint, Track/Target/Fuel/Time, JTIDS Tracks, Digital Moving Map.

- Reallocating funds for AIR 5391 EW Upgrade.
- Replace TF-30's with GE-F110-GE-129 engines which would extend range out to 1,400nm and is low risk considering US Navy replaced the F-14's TF-30's with the same engine.
- Reskin F-111 wings, replacing original aluminium honeycomb skins with DSTO-designed carbon fibre composite skins.
- Use the Block C-4 Mil-STD-1760 upgrade to integrate the latest family of digital weapons including JDAM, JSOW and JASSM.
- Reinstate the F-111 as the AIR 5418 candidate aircraft and scrap ridiculous AP-3C missile carrier idea.

More concerning than the early retirement of the F-111 is the replacement of both it and Australia's frontline fighter, the McDonnell Douglas (now Boeing) F/A-18A Hornet with a single-tier solution, the F-35 JSF.

Up until now it has been enough for 75 F/A-18A's and 35 F-111C/Gs to maintain aerial superiority over South-East Asia but with China's financial boom and its subsequent unprecedented arms build-up, the proliferation of the SU-27/30 series multi-role fighter in South-East Asia, this is certainly not the time to be looking for a single-tier solution.

While it is not yet confirmed as Australia's next frontline fighter, the amount of money and resources Australia has put into the JSF System Design and Development Program will make it next to impossible to remove our association with the aircraft and ability to choose anything else.

However, it is the circumstances under which we chose to invest in the JSF SDD that is dubious. The Defence Department basically shut down the AIR 6000 program before the evaluation or study could be undertaken of the competitor aircraft (Eurofighter Typhoon, Dassault Rafale, SAAB Gripen, late-build Boeing F-15E and F/A-18E/F Super Hornet and the Lockheed Martin F/A-22 Raptor), as all competing aircraft are either in full-rate or low-rate initial production, one can only assume the decision to close down the AIR 6000 competition and go with the JSF was profit rather than quality driven.

The JSF also has inherent design limitations that make it unsuitable for the RAAF including: Engine thrust mass flow limited by inlets, Radar power limited by cooling capacity, Radar aperture limited by nose geometry and a wing planform optimised for subsonic cruise and transonic manoeuvre. (3)

All of this makes for a terrific battlefield interdiction aircraft (a sort of stealthy A-10 Warthog) but not a frontline fighter. There is also a question about its low-observability. While its overall stealthy shape will always produce a lower Radar Cross-Section than a non-stealthy fifth-generation fighter, there are questions being raised, especially in the UK, about how much stealth technology the US would be willing to share with even its most trusted allies.

However, my question is, should we be looking for a tactical fighter in the first place?
This is the poor decision I referred to in the first paragraph.

Since we received our first supersonic fighter, the Mirage III, the RAAF seems to have been “locked-in” to a tactical fighter, indeed the project office to replace it was named the Tactical Fighter Project Office, mostly because of our limited defence spending and relatively small military, we have needed a plane that can ‘do everything’, however, in the case of the F/A-18, with the F-111 already in service, was it really necessary to purchase a multi-mission aircraft, when there was such an excellent air superiority fighter in the F-15C available. (Indeed, it was only the political climate at the time that prevented it from winning). I think there is a need of a change of attitude in Defence to accepting a two-tier option, retaining the F-111 for ground attack while purchasing a single-mission air superiority fighter for air defence. The obvious choice, I believe, is the F/A-22 Raptor.

While still capable of dropping bombs, namely the JDAM and Small Diameter Bomb Series, the F/A-22 is a true air superiority fighter, utilising Stealth and Supercruise, culminating in a first, look, first shoot capability.

The performance of the Raptor is rated as ten times better than the aircraft it was designed to replace—the F-15C—regularly engaging and destroying up to five F-15s at a time during training exercises in the US.

A common misconception is that it is too expensive for Australia, however, if one uses the Defence Capability Plan’s median budget for the New Air Combat Capability of \$13.5 Billion Dollars, with the full IOC Procurement price of the F/A-22 at US\$126 Million with a five hedging points exchange rate of 0.700 Australia could theoretically afford to buy 75 F/A-22s, equivalent to buying 150 F-35s. (4)

It is not a question whether Australia needs the F/A-22, in the current strategic climate we can not afford not to acquire it.

Thankyou for taking the time read my submission and I hope you will take my comments into consideration when making your deliberations.

Yours Sincerely,
Adam Lane.

(1) A Farewell To Arms-Revisited, P.A. Goon dated January 2005. (2) Heads-Up Newsletter Issue 276 F-111: Our Soundest Aircraft, Dr Carlo Kopp. (3) Joint Strike Fighter-Design Growth Limitations, Air Power Australia dated 2004/05. (4) Affordability and the New Air Combat Capability, P.A. Goon, *ADA Defender* dated Winter 2005.