

## THE F-35 IS NOT THE ANSWER

“Air Power is like Poker. A second-best hand is like none at all – it will cost you dough and win you nothing.”

Lt Gen George C. Kenney

From the earliest days just over 100 years ago, fighting from and in the air environment has required some essential elements of the third dimension to be understood and exploited for success. These have dictated who will win in the short term and provided key pointers for who will win in the longer term. Evolving technology, industrial capability and commitment to study of this additional battle space for warfare have wrought quite rapid change in some of the basics regarding conduct on the land and sea battlefields: bearing in mind that the surface below eventually still needs to be controlled for final victory to be won.

Early in WW1, air elements were primarily focussed on providing “eyes beyond the horizon” for the Army but in a few short years became an integral element of all arms employment in significant operations with a “land solution” in mind. The battle around Cambrai in 1918 became a classic for tactical air employment, and closely envisages employment opportunities for an aircraft structured with F-35 type capabilities in mind.

As part of this changed focus on attack from the air, Gotha and Zeppelin raids on London and some semi-strategic raids into Germany caused many to ponder the need for an aerial defence force to protect home areas then seen as becoming increasingly vulnerable. Between the world wars, this prompted active contemplation of the need for some priority for Air Defence or Control of the Air capability with the likes of Douhet proclaiming that the bomber would always get through. The RAF produced the Hurricane and Spitfire as part of its air defence in a classic “just in time” situation to thwart the German bomber offensive that was spawned by the mid wars debate.

And so we progressed then through WW2, with air power applications notably including those of Blitzkrieg, Battle of Britain, Strategic Bombardment, “Cab Rank close air support for troops in contact and on to the ultimate application of air power as a conflict determinator- the atomic bombings of Hiroshima and Nagasaki. In the end, both Germany and Japan lost control of the air over their national boundaries and so paid the ultimate price when ground forces were free to operate and be supported by friendly air almost on demand. This is the operating forte for the F-35 and the aircraft will no doubt make a significant contribution once it operates within a safe air umbrella achieved by others.

The Battle of Britain was perhaps a stand-out for this discussion given the need to not deliver Air Dominance to the Germans which they so desperately needed for a successful invasion of the British Isles. The expectation for Australia despite Darwin, Rabaul and subsequent unsatisfactory decisions regarding aircraft types to achieve the mission, is and has been that “someone” will look after this critical capability for us when the time comes. We’ve seen the consequences and dodged the bullet

so far, but now the time has come when a vast amount of national treasure is to be spent on the wrong aircraft and the F35 decision must be critically questioned.

Australia's support for the British world-wide air effort was generous and understandable during the initial stages of WW2 as it related to defence of the British Isles. One of our commitments was to provide two squadrons (21 and 453) towards the air defence of Malaya and equipped with Brewster Buffalo aircraft not long before hostilities commenced. However, the disadvantages of bringing a "second class poker hand to a first class game" soon became apparent.

The first air raid on Darwin on 15 February 1942 came as a rude awakening to the realities of the need to fight for local air dominance for the defending forces on Australian soil. No RAAF fighters were available to provide any defence and the only opposition came from a USAAC unit on its way to the Philippines. Obviously, matters were now looking rather grim and the experience with the Wirraway at Rabaul was not encouraging enough to believe that that aircraft had a future role to play as an air defence aircraft so desperately needed in the near term. Development of the Boomerang (using many Wirraway parts) proceeded apace but it was always going to be second rate compared with the latest allied and axis air defence fighters. But still better than nothing..... The Battle for Midway provided huge relief during May 1942 and allowed time for the reinforcement of Darwin fighter air defences with more modern US and UK aircraft.

### **By Now We Should Have Known Better**

Korea saw the RAAF enter the conflict with obsolescent Mustang aircraft as the major air power nations were transitioning to jet powered fighters. Australia's "choice" was between the British Meteor (political preference) and the US F-86 Sabre (fighter pilot preference). As expected, the political preference prevailed and after a less than satisfactory performance in the air to air arena the aircraft was allocated to ground attack duties.

By the mid 1950's, the Sabre (modified with a British Avon engine and 30mm Aden cannon) had been introduced as Australia's air dominance fighter but was never recognised in this capacity given the emergence of Mach 2 delta wing fighters with beyond visual range missiles on both sides of the Iron Curtain. Largely to keep abreast of the emerging technologies, the RAAF acquired the Mirage 111 arguably based on the price per unit rather than ongoing logistic costs or a proper fit with geostrategic circumstances. The need to update technology at the cheapest visible price became the aim rather than creating and maintaining a capability for, if not Air Dominance, then at least local air superiority in the geographical locations of Australia's choosing.

During the 1960's and 70's, forward deployment of the Mirage was directed to Butterworth Malaysia as part of the Commonwealth Strategic Reserve and the Five Power Defence Arrangements (FPDA). The Integrated Air Defence System (IADS) created after the withdrawal of the UK forces East of Suez relied heavily on the two Mirage squadrons to provide the all-weather beef for the pie but again, was insufficient in numbers and capability to effectively resist prolonged and determined attack. There was no question though whether we would stand in place and fight with what we had until there was nothing left. Had the Domino Theory been validated, in all likelihood, I would not be writing this submission.

Wars subsequent to WW2 including Malaya, Vietnam and Iraq have not pressed Western air defence systems anywhere near to the point of national survival and have led to a dangerous mindset that “Air Dominance” over any battlefield will always be on our side because in present memory, it always has been. Particularly though, lessons can be learned about how easily an IADS can be unpicked when it does not have the required capabilities or equipment to manage the threat. The Iraqis in particular, did not have the air dominance fighter that could provide the force multiplying effect that was so desperately needed. MIG 23 against F15 – no contest.

The selection of the fighter to replace the Mirage in RAAF service boiled down to a three way choice – F-15 Eagle, F-16 Falcon or the F/A-18 Hornet. The F-15 was deselected because of supposed cost but has proven itself the premier “Air Dominance “ fighter of the 70’s , 80’s, 90’s and well into this century. As an updated gen 4 aircraft, it has maintained a superior and unblemished record in combat. The aircraft was not considered for RAAF service simply because of cost.

After eliminating other competitors from Western Europe and the US, the choice coalesced to one between the soon to become F/A-18 Hornet and the F-16 Falcon. The Hornet had two engines (deemed a very positive characteristic considering the Mirage single engine experience) and was equipped with a BVR missile capability. The Falcon at that stage was a clear air mass fighter without BVR capability and intended for day use in the air to air and air to ground up close and personal environments.

During the 60’s and 70’s, a close understanding between RAAF and USAF operators had been established and there was a fair bit of angst directed against the RAAF by the USAF caused by the selection of the Hornet over the Falcon. The Falcon was “second best” in USAF eyes and if you didn’t want to go for the best (the F-15) then going for a US Navy solution (F-18 Hornet) flew in the face of many years of working together in defining and postulating combat in the air arena. There was a clear re-definition of the first need for an Air Force – the achievement and maintenance of air superiority (now Air Dominance) where and when required.

### **Now to the 80’s and Beyond**

The USAF has by now had enough of bickering at the margins and independently develops the F-22 Raptor as its crown jewel that will have a margin of capability over other aircraft existing or in development, to ensure that it can win the Air Dominance battle then and well into the future. Without resorting to too much hyperbole, the result was spectacular. The F-22 Raptor will retain an overwhelming advantage over its rivals through a serendipitous blend of three components – system and weapons performance, Aerodynamic capability and stealth. Competing platforms over the next twenty years or so may match or even partially exceed the Raptor’s capability in one of the three of the components but not all. Obviously then, the Raptor has a long term future in what it is primarily intended to do: Exercise Air Dominance over and in the Battle Space.

Earlier in the 80’s, the USAF looked to the future replacement of the F-16 Falcon and while recognising that this was a program requiring international input, decide during the 84/85/86 timeframe to put some pegs in the ground that would protect US (and particularly USAF) interests and also examine a “new” methodology for the purchase of weapons systems of major cost and

advanced technology. The concept started with mid to senior ranked officers below star rank “brainstorming” the issue with the major caveat being cost. Note that this discussion was now possible because the USAF “high ground” has been secured with the success of the F-22 Raptor.

As my memory serves me the prime caveats for the JSF were:

Aircraft per unit cost not to exceed USD 28M in 1982 USD with an allowance for inflation.

Aircraft performance be equal to or to exceed that of the existing F-16 Falcon.

I assume my invitation to be included in the early deliberations was to allow a reasonable appreciation of USAF expectations to filter out into the wider international Air Force community with a degree of credibility. I was then the Assistant Air Attaché at the Australian embassy in Washington DC.

The British may well have had equal or even greater access to the initial discussions: but I doubt it given the way the development of the aircraft was going to be hampered by the European endeavour to create its own Air Dominance fighter. Later interest and high level of participation in the JSF by the UK flowed from having secured its most important requirement, the Air Dominance Typhoon. Active Tier 1 commitment to the JSF could be seen as securing an economic advantage by not having to solely develop a Harrier/Jaguar replacement for the RAF.

An example of the nature of the discussion lets first examine the meeting structure. The “Chair” had the financial responsibility and his main task was clearly to keep the JSF deliberations scoped so as not to have an effect on the F22 funding (the long pole in the tent). Operators would input the desired flying characteristics for the selected mission and the engineers would calculate the needed hardware and the financiers would calculate the “cost”.

The discussion would usually follow lines such as “Operator – The aircraft will need 9 G capability (rather than the 7.5 as first mooted) for these operational reasons. Design Engineer – That will need modifications here, here and here and will add this much extra weight and complexity. Financial controller – this will cross the budget line and cannot be accepted without offsets in other areas. So, capability suffers. From a very early stage the “budget” is driving the operational requirement but USAF has secured the “high Ground” with the Raptor now protected and out of the argument.

### **Another Throw of the Dice**

On then to the late 1990’s and I am back in Washington as the Air Attaché. As a senior RAAF officer with realistic and comprehensive firsthand experience across fighter and strike operations, I was duty bound to refer my reservations as to the JSF capabilities to my superiors in the embassy and also to my Service superiors in Canberra. And this I did. My categorical recommendation was that it was not in Australia’s interests in any way to be involved in the program other than as an observer. The only aircraft that would meet Australia’s air defence requirements is, and remains firmly in my opinion, the F-22.

There has been considerable comment over the past twenty years regarding the US agreement to sell the F-22 to Australia. This is a complex question/argument that penetrates the security

classification of this submission. Suffice it to say that there was never any doubt that the F-22 could and would be made available to Australia and I would be happy to expand further on this with Parliamentary protection.

We, your protectors at the tactical level of warfare, will fight to the literal end to achieve the task given us with whatever tools you might be able to provide us when the fight involves your and my families' ultimate survival. In 1942 at Rabaul, Wing Commander Lerew, the CO of 24 Squadron, had 10 Wirraways available to oppose the Japanese invasion. When ordered to face the overwhelming invading Japanese armada his last message back to Canberra was "Morituri vos salutamus" – the gladiator's salute. Predictably, nine of the defenders were shot from the sky.

While the words have certain poignancy, the sentiment is everlasting. Whatever you have to give us, we will do our very best to accomplish the mission. It would leave a pretty bitter taste in the mouth though if we could afford the very best, it was available to us and we decided for pernicious reasons not to provide our forces the best chance in the most complicated and least forgiving of battle arenas.

### **Is this the Last Chance?**

After leaving the Permanent Air Force in 2000, I became appalled at the obfuscation and untruths that were bandied about regarding the merits of the Raptor versus the Lightning and the likelihood of the US Government permitting sale of the Raptor to Australia. There was never any doubt that the RAAF retained sufficient standing within the US community to have the aircraft released for use by Australia in defence of our interests. Equally, in the quest for Air Dominance, there is absolutely no question in my mind as to which aircraft I would want to enter the fight with, or those that follow me deserve to have to strap themselves into.

Likely cost comparisons per unit and through life between the Raptor and the Lightning are so variable that they can be whatever the author wishes them to be and still retain a modicum of believability. However, as a non card carrying member, I would accept that the most believable difference today is negligible. The point is that Australia can still have the best Air Dominance fighter in the world bar none, for around the same cost now as a horse that turned out to be a camel designed by a budget driven (for a while) International committee with agendas to pursue other than bent on producing the best aircraft.

There will no doubt be technical submissions to the Inquiry that will highlight the inadequacies of the F-35 over late generation 4 and emerging generation 5 Russian and Chinese fighters in the Air Dominance arena. Realising those inadequacies is a lot less daunting from behind an academic computer desk than facing the reality of the cockpit view of an adversary in your close 6 o'clock about to blow you back to from whence you came. This aircraft is not the answer to Australia's requirement for an Air Dominance, Air Defence or Strategic and Tactical strike aircraft. The F-22 Raptor is. An even better solution would have been retention of the F111 for use with the Raptor if necessary. I would sleep much more comfortably had this occurred but that is another story for another day.