

National Defence? No, Notional Defence

Nuclear submarines re-engineered as diesel-electrics, plus fighter planes that are a credible threat only in Lockheed salesmen's brochures -- this is the alleged backbone of our future defence. If being a spendthrift slow learner were an advantage, Australia's security would be guaranteed



Australia is blessed by a big moat from all threats. The big air and sea gap has to be traversed in metal ships and aircraft that can be sunk or shot down — if you have enough of the right things to do the sinking and shooting. Those tasks require submarines and fighter aircraft respectively. These are purely defensive weapons; you can't invade another country with them. But if Australia has enough, no other country can invade us either. The role of the Army is to catch any forces getting through those two screens. The bigger our Army, the bigger the force that has to be landed.

It is far cheaper though to interdict enemy forces as far from our shores as possible. Ideally that will start with our submarines sinking Chinese ships in the South China Sea. Malcolm Turnbull has made that very difficult. He took delight in choosing French vapourware submarines over the proven Japanese offering because the latter was Tony Abbott's choice. The French submarines are scheduled to enter service in the 2030s. In the interim we will be spending as much keeping the sclerotic *Collins* class submarines going as it would have been to replace them with the Japanese *Soryu* class. The *Collins* class is cursed with one of the worst diesel engines ever put into a marine vessel. Our submariners will be struggling with them for decades yet thanks to Prime Minister Turnbull.

As an indication of the idiocy that is guiding our French vapourware submarines, *Asia Pacific Defence Reporter* [reports](#) that they are going to be built with lead acid batteries instead of lithium ion batteries because the RAN does not want to be introducing this particular new technology in the 2030s. The Japanese are using lithium ion batteries now in the *Soryu* class. The weight difference is enormous – 300 tonnes of lead acid batteries versus 100 tonnes of lithium ion. The delta of 200 tonnes makes a big difference to a submarine. This decision on batteries by the RAN has been described as “retarded” by an experienced Australian defence observer based in Washington. The RAN submarine mafia run their own show for their own amusement without sufficient oversight from the ADF or the Defence Minister.

The F-35 nightmare is proceeding much as predicted. The damage was controllable until Tony Abbott became Prime Minister and upped the buy from 14 aircraft to 72. Now we are selling some of our clapped out F-18As to the Canadians to make the fighter aircraft shortfall even tighter. One of the signs that the F-35 is on the way out is from popular culture. The makers of the *Top Gun* movie want to make *Top Gun II*. The US military advised them to base the new script on the Super Hornet rather than the F-35 which will presumably be seen as a loser's aircraft at some point in the future.

Another sign that the F-35 is on the way out is the fact that 18 months ago the USAF asked Boeing about supplying an updated F-15. This [article](#) keeps mentioning that the USAF's interest in the F-15 is not a threat to the F-35, which means that it is. Apart from its enormous cost and a host of deficiencies, what would be damping the affection for the F-35 in the USAF would be two things: the F-35's low availability and the fact that it is practically unarmed.

The F-35 spends a lot of time in maintenance, and when the maintainers plug into the system to order new parts they are often told that the wait time will be two years. That is in the lower 48 states of the United States, so how will the RAAF go on the other side of the Pacific at the farthest reaches of the Lockheed supply chain?

There are other things about the F-35 that would have been entirely predictable to those who going to use them. For example after each mission all the data generated during the flight has to be downloaded from the aircraft and transmitted to a Lockheed facility in Texas. Supposedly the F-35 can go for up to a month without phoning home to Texas before it stops working, but the reality is likely to be shorter than that. For USMC ships operating the F-35B that means they have to spend hours transmitting enormous data files, making them a radio beacon for Chinese cruise missiles to home in on. These ships can either be radio silent or have functioning F-35s – one or the other but not both. A report on the recent deployment of F-35Bs off Japan was not released to the public, most likely because it was too damning.

The F-15 is a crude aircraft that first flew in 1972. It was designed around its role which was to intercept Soviet bombers, fix their location with its big radar and then shoot them down with beyond-visual-range missiles. Because of its crude shape it can't supercruise and has to use afterburner, and triple its fuel consumption, to go supersonic. That means it can't pick and choose its fights the way that fighter aircraft that can supercruise are able to. It also means that the missiles the F-15 fires don't get the kinetic and altitude advantages of missiles fired at supersonic speeds.

The Yom Kippur War in 1973 had a big effect on military thinking. That war ended up as the usual Israeli triumph but the first few days were problematic. Ground commanders would ask for air support. The Israeli air force would send aircraft which would be shot down by SAM systems. On the Syrian front 31 aircraft were lost by the fourth day of the war. The lesson the USAF learnt from the Yom Kippur War was that you have to destroy the enemy's SAM systems on the outbreak of war. Thus the F-35 is designed around its role to bomb SAM sites, carrying two 2,000 bombs and

two beyond-visual-range missiles, the AIM-120, on the off chance that it would have to defend itself from an enemy fighter aircraft.

The problem with carrying only two missiles is that most missiles miss. Take this [encounter](#) between an F-35 and an unarmed QF-4 drone, an unmanned Phantom. The F-35 fired off its two AIM-120 missiles, both of which missed and the target aircraft landed. The chance of one missile hitting a target aircraft that is not manoeuvring to escape is 70%. That falls to about 10% if the target aircraft is aware of the missile's approach and takes evasive action. Most targeted aircraft are aware because of the flare of the launch, the targeting updates from the firing aircraft to the missile and then the missile's own radar emissions. An F-35 that has fired its two missiles is defenceless. It can't turn fast enough to engage a real fighter aircraft with its gun. It will have to run as fast as it can but its enormous exhaust plume will be a beacon for infrared-guided missiles.

In modern warfare an enormous number of missiles can be fired for little effect. The Israelis get plenty of practice in shooting things down but even they can find it difficult to shoot down something as slow moving as a drone. Two years ago they fired [two Patriot missiles](#) and an air-to-air missile against a drone that had flown in from Syria and flew back unharmed. In Operation Allied Force, the NATO bombing of Serbia in 1999, Serbian forces fired 665 surface-to-air missiles and downed two aircraft. NATO aircraft fired 743 radar-homing missiles at Serbian SAM batteries. Post-war analysis determined that between 3 percent and 6 percent hit their targets.

Boeing has responded to the USAF's solicitation with a variant call the F-15X. It is an ugly thing with conformal tanks to carry more fuel attached to the engines under the wings. It is a triumph for Russian air combat theory in that the F-15x will be able to carry 22 air-to-air missiles instead of the handful that USAF fighters have normally carried. Russian theory holds that it is best to fire off a volley of missiles at once instead of just one at a time. When the missiles have run out and the opposing aircraft go to the merge to fight with their guns, the advantage will be to the Russian aircraft and their derivatives. A 2° per second difference in sustained turn rate will allow the faster turning aircraft to dominate the engagement; the Su-35 outturns the F-15. Faster-turning aircraft are also better at dodging oncoming missiles in the first place.

What would have motivated the USAF to go back to the F-15 would have been war gaming exercises using real world data which would have few F-35s getting into the air and then being shot down pretty well straight away. This is not an original observation. There was a [Rand study](#) in 2008 by John Stillion and Scott Perdue that concluded that China's PLAAF would massacre USAF F-35s. Lockheed got John Stillion fired from Rand.

In their own way the RAAF leadership that got us locked into the F-35 are just as retarded as the RAN leadership that signed up for French vapourware submarines. The country is defenceless. There is a solution – build the Saab Gripen E in Australia, as per the Brazilian deal for building that aircraft in Brazil, and switch back to getting the Japanese *Soryu class* submarines.

And for the Army we need at least 10 combined arms brigades stood up, not just the three we have at the moment. We also need a whole lot of other things but that is a story for another day.

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