

Regional air forces weapons, systems and training

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THE WIDER REGION IS CURRENTLY IN THE THROES OF THE LARGEST RE-EQUIPMENT PROGRAM SEEN SINCE THE 1940s, LARGELY AS A result of the influx of advanced Russian technology into Asia. These changes are profound, in that, there is a shift from short range combat aircraft equipped with dumb munitions, to long range aircraft equipped with smart munitions. The results of this are not simply confined to 'who has what parked on their tarmacs', as the technological change is also reflected in training and skills, and what demographic is recruited over time. That is, an air force with sophisticated technology will always find it easier to recruit good talent compared to an air force with mediocre equipment.

The changes observed in Asia are not well understood or their significance appreciated in most Western Defence Department bureaucracies, and the US DoD under the Bush Administration was no exception, preferring to sweep developments in Asia 'under the rug' out of sight from Congress and the US media. The sacking, sidelining or induced resignations of senior personnel who voiced concerns over the increasingly mismatched US force structure versus the growing baseline in capabilities in Asia was a distinct feature of this regime.

Understanding the strategic context, which Australia and other US Allies in the Asia-Pacific region must confront, is an important preamble to discussing what is happening in Australia's area of interest regionally. This is also why the development of force structures and skill bases in Asian militaries is of such strategic importance.

The protracted Global War on Terror drove the US into 'strategic overstretch' once the insurgency in Iraq ramped up, and the result was the diversion of all political, material and intellectual effort into the defeat of the Islamo-fascist adversary. Recapitalisation of the increasingly uncompetitive US fighter fleet has been repeatedly delayed or stalled, with the Bush Administration intent on killing off all fighter programs other than the Joint Strike Fighter, arguably because its peak production expenditure is at least a decade away, unlike current production fighters that require spending now.

This strategic paralysis in US force structure modernization has coincided with a period where Russian, and increasingly Chinese, industry has absorbed and exploited much of the advanced technology base now available in the global market. The US now retains a clear technological lead only in a small number of areas, including top tier stealth and X-band AESA radars. In most other technologies used for constructing combat aircraft



The F-22A Raptor, the ultimate multi-role fighter, combines stealth with super-cruise performance. (US Air Force)

and air defence weapons, the Russians have largely caught up, and in some areas surpassed the US and EU. The World Economic Crisis, born from bad management practices and inadequate governance in the US finance industry, has simply made a difficult problem even more difficult for the US.

To put this in context, technological advances in radar and surface-to-air missile systems proliferating in the global market, including Asia, have rendered all US combat aircraft other than the B-2A (20 aircraft) and F-22A (183 currently planned) unusable in areas where such weapons

are deployed. The US has not confronted a technological challenge to its capabilities of such magnitude, since the first S-75/SA-2 Guideline SAMs were encountered during the 1965 Rolling Thunder bombing campaign. Yet this impending strategic calamity was repeatedly ignored.

Unless the Obama administration radically changes priorities in the US Defence budget and restores fleet recapitalization and global strategic posture to their proper position, at some point between 2010 and 2020 the US Air Force will not have sufficient numbers of advanced combat aircraft to deal with any well equipped adversary.

SOME THINGS NEVER CHANGE



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Su-30MKI Flanker H.

The US Navy is already in that position. Such adversaries could range from China through to Iran. In turn, US deterrent credibility would collapse, and in Asia, where perceived relative standing more than other factors drives political alignments, the US could confront the unraveling of a network of alliances formed during the late 1940s.

Many strategy scholars and media observers now regard the US to be a spent power - in decline and becoming increasingly irrelevant in its ability to drive global events. If the US continues to pursue the myopic and politically self serving defence policy of the Bush administration, then such an outcome will eventually occur, as the US loses its conventional deterrent credibility on the global stage.

This is the strategic context which Australia and other US Allies in the Asia-Pacific region must confront.

The most important technological advance observed over the last decade in Asia is the proliferation of variants of the Russian Sukhoi Flanker series of fighters, originally developed to defeat the US F-15 Eagle.

China currently has orders for around 500 aircraft, comprising a mix of legacy Su-27SK/UBK variants, new Su-30MKK/KMk2 variants, indigenously reverse engineered J-11B/BS variants, and most recently, a technologically updated variant of the Su-27K/33 shipboard fighter, ordered for China's planned fleet of aircraft carriers.

India currently has orders for around 200 of the Su-30MKI, the most advanced variant built in quantity to date. The Indians are currently integrating the Brahmos A supersonic cruise missile on their MKIs.

Malaysia is currently deploying its first 18 Su-30MKMs, an updated derivative of the Indian subtype, with Israeli avionics components replaced with French and Russian technology.

Indonesia has procured a mixed fleet expected to number ten Flankers by 2010. These include baseline Su-27SK, Su-30MKK, with the more recent Su-30MK2 delivered this January, and digital Su-27SKM expected soon.

Vietnam has a mixed fleet comprising Su-27SK/UBK and Su-30MKK variants.

The later Su-30MK variants are dual seat multirole aircraft, capable of carrying not only the full suite of Russian air-to-air missiles but also all of the smart bombs and guided missiles produced by Russian industry. These include laser, television and satellite guided smart bombs, as well as anti-radiation missiles and anti-ship and land attack cruise missiles. The Chinese are now integrating indigenous AAMs and air-to-surface weapons on their J-11B, so in time there will be a competitive market for weapons, with India exporting the Brahmos A, with Russian and Chinese offerings.



Su-35 Demonstrator.

There is a view in some Australian circles that the regional proliferation of advanced Russian high technology weapons is not relevant: as "ADF personnel, and specifically RAAF pilots, are inherently superior to their Asian counterparts and thus would prevail in combat for this reason alone, regardless of how poorly the ADF might be equipped."

This perspective on the relativities of Australian vs Asian combat pilots is not new. A similar view was held in 1941 almost uniformly in senior British and Australian staff circles. Indeed, the classic quotation of that period was made by Air Chief Marshal Sir Robert Brooke-Popham just days before the Japanese Imperial Navy's A6M2 Zeros annihilated the RAF and RAAF contingent in Malaya. "Buffaloes are quite enough for Malaya," he said. Japanese pilots were then thought to be poorly trained and to have poor eyesight. This belief persisted despite the long running reports of Japanese competence arriving from the American Volunteer Group in China, who tackled Japanese Naval Air Arm and Army pilots in aerial combat.

A mere decade later the RAAF deployed its Gloster Meteors to Korea and flew against Chinese, North Korean and Russian crewed MiG-15 fighters. The technologically sophisticated MiG-15 and aggressive Chinese and DPRK pilots quickly inflicted losses in air combat. As a result the Meteors were relegated to ground attack tasks. Only the much greater experience of the RAAF crews prevented a disaster.

The reality of future aerial combat in Asia is likely to see well educated, talented and well trained Asian pilots, supplemented by Eastern European contractor pilots, flying against any challengers.

The RAAF has had mixed fortunes over the past thirty years, exercising against its colleagues in Asia. When the RAAF had a strong technological advantage, it usually prevailed. But the opposite has also been true, and one former RAAF Mirage pilot stressed how Malaysian pilots flying newly delivered F-5E Tiger II fighters soundly beat the RAAF's Mirage IIIOs repeatedly in air combat exercises. The Malaysian pilots were trained for 12 weeks by US instructors, and made full use of their newly delivered fighters. During this period Singaporean pilots performed competently, flying obsolete subsonic Hawker Hunters against the RAAF Mirages.



Su-27SK Flanker B.

History does not therefore present a compelling case for any inherent or self-evident Australian superiority over Asian aircrews.

Superiority in the cockpit is a function of many factors. Natural talent for handling an aircraft in combat manoeuvres, an ability to orient in space, and concurrently tracking the positions of other aircraft. An ability to quickly reason through problems also matters. Training and especially cumulative cockpit time in fast jets matters. One experienced RAAF Fighter Combat Instructor once observed that fighter pilots only become really effective once they had accumulated at least 1,000 hours of fighter time. Matters of temperament also matter, as aggression and courage are paramount.

The more technologically sophisticated the aircraft and systems being flown, the more important other factors become, especially prior education. Pilots with a good grasp of physics and mathematics usually perform better in managing and exploiting complex technologies, since they understand how these systems work and what limitations they have. This is different in the case of pilots with poor prior education, who end up following an operations manual by rote rather than understanding the tools of their trade.

The bottom line is that a combination of talent, intelligence, education, training and a lot of focused effort are required to produce a genuine, rather than imagined measure of superiority in the cockpit.

The demographic picture in Asia today is one of high levels of university enrolment in middle class families, the primary recruiting ground for future combat pilots, and increasingly good domestic high school and university standards. Asia is now industrialized, technologically savvy, and increasingly affluent, with a relatively good balance in demographics between young people and the ageing portion of the population. Australia, like most Western nations, is on average ageing, with a declining recruiting pool as a result. So the ADF will have to confront over coming decades the reality of a smaller talent pool to recruit from, unlike Asian nations with more population and a larger and expanding talent pool to recruit from.

Talent does matter in this game, and as Air Marshal David Evans, former Chief of Air Staff, RAAF, once

observed, "if you put a donkey into an F/A-18 you still have a donkey".

Good recent case studies of improved operational standards in Asia include the Cope India 2004 exercise, where elite Indian instructors flying the Su-30MK prevailed over a US Air Force line unit flying the F-15C and, more recently, the Indian Air Force deploying a line squadron of Su-30MKIs to a Red Flag exercise in Nevada. The YouTube video of a US instructor critiquing the inexperience of the Indian pilots in handling the thrust vectoring Su-30MKI produced a storm in the Indian media.

The training regime observed today in Asia has evolved since the Cold War. Commercially driven, Russian defence contractors spare no effort in fussing over their clientele. Recent media reports indicate that leading Sukhoi test pilots were directly engaged to teach Malaysian trainee Sukhoi pilots the finer points of handling these highly agile aircraft.

Russian industry has gone further in recent times, and the sorry story of a recent African conflict in which Su-27s were flown by ethnic Russian pilots against MiG-29s flown by ethnic Ukrainian pilots makes for an interesting case study. Rosvooruzhenie, the Russian government-owned arms export agency, supplied aircraft, munitions, aircrew and ground crew to both sides in this conflict, to the extent that contractor pilots often outnumbered indigenous aircrew.

Russian commercial entities like Omega offer the full gamut of contract personnel capabilities, encompassing also staff capabilities at all levels, as contract advisors or personnel replacements.



F-35 Joint Strike Fighter prototype.

There is no shortage of highly experienced Russian, Ukrainian, Byelo-Russian or other former Soviet Bloc pilots, maintainers and former staff officers, available in the Eastern European job market, and most combine operational experience with excellent quality prior university education. The Russians preferred science and engineering graduates for aircrew training.

In a crisis any regional user of Sukhois would be offered 'top up' contract personnel to plug any gaps in domestic capabilities. Russian industry has a strongly vested interest in seeing the users

of their products prevail in combat, and providing contract personnel to make sure this happens is both profitable and commercially smart.

The reality of future aerial combat in Asia is thus likely to see well educated, talented and well trained Asian pilots, supplemented by Eastern European contractor pilots, flying against any challengers.

The notion that any Western air force, be it the RAAF or USAF, will get a free ride in such an environment does not fit this well documented reality.



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