

By Dr Carlo Kopp

The Defence Watch public briefing provides some interesting insights in to the thinking of the Defence bureaucracy – especially its capacity to accept obvious contradictions in its own reasoning.

The biggest contradictions lie in thinking on Beyond Visual Range air combat.

Defence observed that combat within visual range with two equal combatants leads to “mutually assured destruction”. . . “We believe you need to be out there engaging Beyond Visual Range.”

The premise that close-in combat is non-viable is reasonable. Exchange rates have historically been below rates using ambush tactics, including modern BVR combat.

However, the exceptional off-boresight and high G capability now in close combat missiles will increasingly become a feature of BVR missiles.

Modern BVR combat involves getting off the first shot. Advantages go to players with bigger ra-

A case of convoluted reasoning

dars, longer ranging missiles, lower radar signatures, bigger fuel loads and higher sustained speeds. Fuel is energy; energy is life.

Speed is especially valuable as it permits opening and closing distances as quickly as possible to defeat opposing weapons kinematically, provide firing opportunities early, and improve missile range.

The US Air Force F/A-22A tops the pack in precisely these parameters – recently a sole F/A-22A defeated five F-15Cs in a trial engagement.

If BVR combat will dominate future operations, two immediate contradictions in current Defence bureaucracy thinking emerge.

The first is that the reduced stealth export JSF will be a viable player in this game – its BVR survivability depends on its X-band stealth capability, as it is not a high performance high speed design.

Even if the RAAF were to spend

a fortune adding a unique and improved EWSP suite to offset the hobbled stealth, the battle-field strike optimised JSF will never be a strong BVR combat player. The F/A-22A does everything better than the JSF in this game, yet remains ignored in Canberra.

The second contradiction arises when comparing the F/A-18 family and the F-111. In the BVR combat game, the F-111 aerodynamically beats the F/A-18 family on all cardinal parameters. It is much faster; almost twice as fast at the high altitude top end. It carries almost three times the internal fuel of the F/A-18A.

Nonetheless, the F-111 can be driven down to a lower radar signature than a F/A-18A-B, as it can carry stores

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Pentagon clears tanks for ADF

WASHINGTON – The Pentagon has formally advised it plans to sell 59 General Dynamics M1A1 Abrams Integrated Management tanks and related equipment to Australia in a deal valued at up to US \$475 million.

The Defense Security Cooperation Agency notified Congress of the deal.

Australia will buy 59 tanks, seven M88A1 medium recovery vehicles. The ADF will also get 80 AN/VRC-92F dual long-range single channel ground and air radio systems, 146 night vision goggles, 73 M2 machine guns, and other equipment.

The M1A1/2 Abrams main battle tank is manufactured by General Dynamics Land Systems.

Toray cashes in on B-7E7

TOKYO – Japan's top maker of synthetic fibre, Toray Industries, has been chosen as Boeing's sole supplier of carbon fibre for the primary structure – wings and floor beam – of the new 7E7 passenger jet, along with an order for more than US\$3 billion worth of carbon fibre materials over 18 years.

Each plane requires about 30 tonnes of carbon fibre. Toray will build a plant in the US for the order.

“We also expect an additional \$1 billion order to supply carbon fibre materials for the 7E7's fuselage,” Toray President Sadayuki Sakakibara said.

The company is also in early discussions with European plane maker Airbus to supply fibre materials for the 555-seat A380

Italians snatch W'land choppers

ROME – Italy's Finmeccanica, 32.4 per cent by the Italian government, will buy British partner GKN's half of the helicopter joint venture, AugustaWestland, for £1.06 billion.

GKN will use the proceeds from selling its stake in the world's second-largest helicopter maker to eye new acquisitions in aerospace or the automotive sector.

It also plans to pay down debt, chief executive Kevin Smith said.

GKN's chief executive denied reports that it was interested in three US commercial aircraft component factories, which Boeing has put up for sale.

Westland's fate caused a political furore in Britain when it seemed Sikorsky would buy it.

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in its internal bay and its shaping is much easier to treat with radar absorbent laminates or coatings.

The F-111 also has a much larger radar bay sized for the F-14's AWG-9 radar, a legacy of its early role definition as a BVR interceptor. With short wingtips, some off-the-shelf stealth treatments, off-the-shelf internal trapeze missile launchers, and an off-the-shelf radar like the APG-79 or APG-80, the F-111 beats the F/A-18 family as a BVR fighter. With multimode radars about US\$2.5M apiece, such an upgrade is neither expensive nor complicated.

When I proposed doing this some years ago, the proposal was ignored by the Defence bureaucracy – third party feedback claiming this was on the basis of the F-111's inability to fly close-in

PLA accelerates its modernisation

high alpha high G turning dog-fights.

Survivability arguments by Defence contain further contradictions: "We would have to escort the F-111 with F/A-18 Hornet aircraft, equipped with the right sort of weapons. [and] ...in the sort of environment that's likely to be out there in the future, you're always going to have to escort the F111."

Claiming the need to escort the F-111 is nonsense.

Only where airborne Sukhois are on station over the target would it be necessary to escort the F-111 in the target area.

The alternative of "self escorting" F/A-18 variants is demonstrably non-viable against airborne Sukhoi CAPs, given the Sukhois' radar/missile advantages. Therefore in practice both air craft

would need to be escorted under such conditions.

The tankers and Wedgetails supporting the F/A-18 variants would also need to be escorted in such an environment.

Accepting the premise that strike tasked F-111s have to be escorted, but not strike-tasked F/A-18s is self contradictory as it is easier for a Sukhoi to kill a slower F/A-18 variant at 30,000 ft, than a faster F-111 at 200 ft AGL, using a BVR shot.

The physics of missile kinematics and radar look-down performance cannot be escaped.

The lack of intellectual rigour which pervades the Defence bureaucracy's reasoning is at the root of the current force structure crisis and unless overcome will continue to create future problems.

Brazil serious on Amazon drugs

BRASILIA – Brazil may shortly allow its air force to start shooting down aircraft suspected of smuggling drugs across its jungles after a six-year delay.

Defence Minister Jose Viegas said the shoot-down law was necessary to "avoid a constant violation by drug traffickers of our airspace," adding that he expects the decision to be well-received internationally.

A decree has been drafted requiring Brazil's air force pilots to follow rules of engagement. A law allowing drastic action has existed for six

years but has not been ratified by the president.

Brazil's Amazon jungle region, bordering on drug producers Colombia and Peru, is increasingly used to transport cocaine to Brazilian markets and beyond. Growing consumption of cocaine fuels gang violence in Brazilian cities.

Controversy has surrounded the policy of shooting down suspected drug planes since the Peruvian air force shot down a small plane in April 2001, killing an American missionary and her daughter.

Brazil does not need US help to shoot down suspect planes because it has its own radar tracking capability and fighters.

RAF Herc in Asia collision

LONDON – Some 20 crew and passengers had a lucky escape over Central Asia when a RAF Hercules was involved in a mid-air collision near the Caspian port of Turkmenbashi – but landed safely.

The Hercules, on a flight from Kabul over Turkmenistan, collided with an unidentified jet.

"Another transit aircraft managed to clip two propeller blades," said a ministry spokeswoman.

The Hercules was able to land safely in Baku, Azerbaijan.



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