



**Submission No 14**

**Review of the Defence Annual Report 2010 - 2011**

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A SUBMISSION TO THE DEFENCE SUB-COMMITTEE OF THE JOINT  
STANDING COMMITTEE ON FOREIGN AFFAIRS, DEFENCE AND TRADE

**THE AUSTRALIAN DEPARTMENT OF DEFENCE:  
A CULTURE OF INCONGRUENCE BETWEEN  
POLICY AND PERFORMANCE**

**INTRODUCTION**

Many of our political representatives may not rate 'Defence Culture' highly on their radar of issues-of-concern and problems in the Australian Defence Organisation for the simple reasons that seeking change to improve day-to-day Defence matters has become such an ongoing chore. There seems to be a belief that cultures take a long time to change – well beyond the purview of any sitting Government. This is not necessarily so.

This submission is aimed squarely at two targets. Firstly, to demonstrate that the current 'Defence Culture' is at the very centre of influencing our future military capability in a way that will deleteriously affect and, prima-facie, threaten Australia's future security. Secondly, that culture can be changed, and quickly, through simple root cause analysis and the application of standard management practices focused on getting Defence to 'walk the talk' of the experience and knowledge based wisdom embedded in its own files and records.

'Culture' is a consequence of 'behaviours' which in turn are the result of a set of 'attitudes'. Working inductively, if a defective culture is observed, then it is a reasonable proposition that fraught behaviours have come into vogue from a flawed set of attitudes.

For example, a flawed perspective of the world's future, skewed and biased by preconceived notions, and a refusal to accommodate, let alone participate in critical debate which, by design, would dispel any such notions, can result in Australia's Defence Force fielding ineffective if not irrelevant (but certainly not inexpensive) equipment, with a diminution of national security being the inevitable result.

Now, much has been presented in the Australian media about defective Defence culture. Given serially poor behaviours, how many parents would take (to paraphrase) Noel Coward's advice: "Don't put your daughter in the Military Mrs Worthington"? Defence struggles to recruit and retain the finest and highest performers of our youth.

The word 'incongruent' in the title has been used in deliberative way. The Department of Defence has an excellent set of policy and guidance documents prescribing practices and processes borne of the wisdom that comes from years of capturing knowledge and experience. If Defence practiced what it preaches, there would be few, if any issues of flawed culture and consequent malpractice. Regrettably, the wisdom-based practices recorded in the files of Defence are, to quote Shakespeare's Prince Hamlet, '*More honour'd in the breach than the observance*'.

The Chief of the Defence Force, General Hurley advised the Committee on 16 March that there are six reviews currently examining Defence Culture:

**Gen. Hurley:** *Good morning and thank you for the opportunity to make a short opening statement. I would like to concentrate on two aspects: the culture reviews, given that we are looking at the financial year 2010-11 report, and the outcomes of reviews that have come out in this financial year but the genesis and the terms of reference of which were in that financial year. I thought I would give you an update on where we were with those reports now, and that might help members of the committee frame their questions when we get to that agenda part of the session. I will also give a quick operational update, if that is okay.*

*This morning I would like to discuss the document that the secretary has just referred to—Pathway to change—and to provide you with an update on our current operations. As you are no doubt aware, last week we released the six cultural reviews and our response to those reviews titled Pathway to change: evolving Defence culture. At the time we released these documents I told the media that the suite of reviews was like looking into a mirror: As many of us normally do, when we look into a mirror we see strong points and flaws. There is no doubt that the reviews have drawn attention to Defence's many strong points, and these are strengths we must maintain. The reviews have also pointed out, however, that there are serious issues that we must address. Pathway to change: evolving Defence culture describes the challenge that Defence faces and, importantly, how we intend to meet that challenge.*

Six reviews? Where there is smoke, there is fire, and it seems to be raging in Defence.

In later evidence, General Hurley made the following response:

**Dr JENSEN:** *My concern is that one person whose company was blacklisted has been defined as being 'in scope' and another person whose company was blacklisted was defined as being 'out of scope'. Another concern I have is that I registered as being aware of—yet, quite frankly, DLA Piper had no further contact with me. If they do not even have contact with a member of parliament to find out what abuses they are aware of, you have to wonder how diligent they have been outside of that process.*

**Gen. Hurley:** *Chair, I do not think we can leave standing on the record that the Department of Defence blacklists companies. I do not think that is a statement that really should resonate with any of us.*

Not only does Defence 'blacklist' companies, but it 'blacklists' individuals who attempt to fulfil their professional obligations to secure the Nation's future, but whose views are at variance with the Defence hierarchy. General Hurley was a party to such a blacklisting; one hopes it was an error of omission rather than an error of commission.

This submission provides the documentary evidence of such a case.

### **A BEAUTIFUL SET OF DOCUMENTS: MORE HONOUR'D IN THE BREACH THAN THE OBSERVANCE**

An example of excellent Human Resource Management principle can be found the Defence Service Charter, which states, inter-alia:

#### **THIS CHARTER**

- Is our commitment that we will maintain the highest possible standards of service when you are dealing with us.
- Details the options available if you wish to comment on our performance.

#### **OUR STANDARDS**

- Act on a request from the public in a professional and courteous manner.

- Provide accurate information.
- Respect privacy and sensitivities.
- Respond to phone calls, faxes or emails in 2 working days.
- Reply to correspondence within 15 working days.

These standards apply in our dealings with external customers and within Defence.

### **FEEDBACK ON OUR PERFORMANCE**

If you are dissatisfied with our performance, please raise the issue with the area concerned.

If you are not satisfied, you can follow a number of steps:

- Speak with the supervisor.
- If you are still not satisfied, you can write to the supervisor.
- You have the option to write to the Minister for Defence or your local Member of Parliament or Senator.

More comprehensive and even better principles, as well as many more of them, may be found in the pre-2002 version of the Defence Service Charter which, alas, did not survive unscathed in what many refer to as the 'Defence Purge' of 1999 to 2002.

My history in the RAAF spans 47 years of Permanent and Reserve service. In 1971, I was on a Macchi-Mirage conversion course with then Pilot Officer Houston, later to become Chair of the Air Force and Chief of the Defence Force. I was serving in Air Force Headquarters during his time as Chief of the Air Force, and offered to provide him staff advice 'that he needed to hear, not what others thought he would be pleased to hear'. He graciously accepted this offer and I provided him with staff advice directly on a number of occasions, including the requirement for the C-17 Transport aircraft. When he was promoted to the Chief of the Defence Force, he extended this invitation to me during his time as CDF.

When it was announced that Australia was considering the purchase of the F/A-18F 'Super' Hornet, as an interim air combat capability, I knew from my previous experience in Capability Development Division that this aircraft would be uncompetitive with the capabilities emerging in our Region. Accordingly, I compiled a detailed paper for his direct consideration. The paper in itself is interesting in hindsight, as it demonstrates the quality and prescience of advice available to the Defence hierarchy. This paper is dated 31 March 2007, and is embedded in this submission for direct reference.

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31 March 2007

ACM Angus Houston, AO, AFC  
Chief of the Defence Force  
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CANBERRA ACT 2600

Sir,

You have extended me the privilege of reporting to you directly, when there is a matter that I believe should be brought to your attention. This is one such occasion, and regretfully, probably the last such occurrence.

### **My Recent Strategic Military Studies**

Since transferring to the RSG in August 2003, I have been a very active member of the Air Force Reserve, firstly assisting the Defence Capability Review in the latter part of 2003, and since then, working about 140 RSG days per year for Strategy Division (Military Strategy Branch) and more recently in the Capability Development Executive (Capability and Plans Branch).

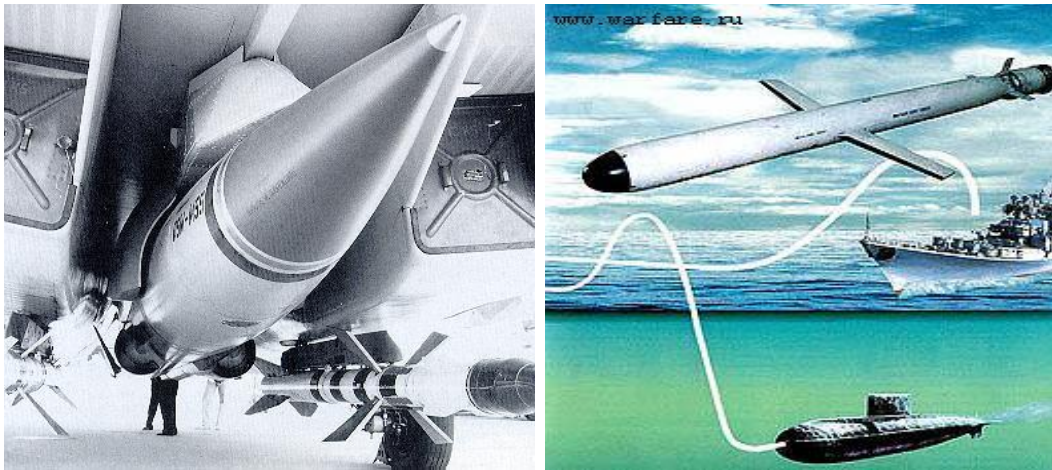
This work has been extraordinarily interesting and productive. My main task has been to represent the 'Red Forces' as defined by the Australian Illustrative Planning Scenarios during the Explosive Ordnance Studies and Force Options Testing. To do this, I accumulate information on the current and future (plus 10-15 years) military, political and industrial capabilities of countries such as China, those of the Horn of Africa, India, Indonesia, Iran and Malaysia. I also research weapons systems development in these countries, and weapons and systems supplied from sources such as Russia, Ukraine and the Europeans.

This might seem counter-intuitive, but to be a credible 'Red Force' representative, I have to conduct equally cogent research into 'Blue Force' capabilities and systems, so that I can detect vulnerabilities and strategic flaws

to exploit. I have my own Aviation Week subscription and make longitudinal assessments of the organisational behaviour of the relevant countries' military and industrial organisations. This work has shown, for example, a rapid shift over the past 12 months in the USA beliefs regarding the future military capabilities of possible adversaries, and the likely effectiveness of the USA's military responses.

This work has been materially assisted by developments of the Internet and computer indexing software, and I now update my databases annually. Last year, I spent 3 days with DIO staff checking the validity and coverage of these data. I found only one gap – surface wave radar – which was quickly closed. Currently, I have about 8 Gigabytes of structured, searchable and distributable data, and I regularly use this database to support seminar war-games and special studies. In addition, I use my USAFIT MSc (Systems Management) training in subjects such as simulation to support this work.

As an example, I recently participated in a simulation of a swarm attack on the proposed Air Warfare Destroyer (AWD) by Su-30MK launched KH-41 Moskit (AKA 'Sunburn') and submarine-launched SS-N-27 Klub (AKA "Sizzler").



I have inserted images of these two weapons sourced from a Russian Internet site. (One cannot access this site from inside Defence, but I can via my private connection.) These are very ingenious and capable weapons being widely fielded in our Region. The Sunburn is a Mach 2.2 supersonic sea-skimmer with a mass of about 4,000 kg and an air-launched range of 120 km, while the submarine-launched Sizzler has a range of about 300 km, sea-skims at Mach 0.6-0.8 until 30 Km from the target, when it sheds its subsonic carrier and a rocket accelerates it to Mach 2.9 and it closes – manoeuvring – to deliver a 400 kg warhead onto its target.

By changing the AWD sensor suite and magazine load-outs, we were able to substantially reduce the vulnerability of the AWD to this type of attack. From my maritime strike experience as a Mirage pilot in Butterworth, and subsequent simulation studies when posted to DSTO, I know the value of swarm attacks, and in my Red Forces activities, I structure forces that prosecute swarm attacks against Blue Force maritime movements to overwhelm their defences – as any competent military operator would do.

Regretfully, this type work has been terminated by an ill-considered decision in Air Force Headquarters (AFHQ) and this is the trigger for my compiling this

report for you. I am not requesting that you intervene as it may be counter-productive overall. (Notwithstanding, it would be an improvement if DGPERS-AF observed the Minister's direction that it is preferable to encourage the employment of competent people, rather than terminate them, then have to recruit and train scarce replacements. (Age cutting enclosed.)) However, if I am to cease this work, then you should have the opportunity to be briefed on the rather confronting conclusions to date.

So, let's move on.

### **A Dangerous Paradigm Shift**

There is a paradigm shift occurring in Australia's military posture – and one that is relentlessly decreasing our National security. For the past several decades, we have observed, mantra-like, '**we can offset numerical inferiority with technical superiority**'.

This technical superiority is being reversed with the influx of advanced weapons systems. Moving from west to east, we are being steadily encircled by advanced air combat systems: India - Su-30MKI, Mig-29, Mig-29K (naval), Mig-35(possible); Thailand – Su-30MK; Vietnam, Su-27, Su-30MKV; Indonesia, Su-27, Su-30MK; Malaysia – Mig-29N, Su-30MKM, China, Su-27, Su-30MKK, Su-30MKK2, J-10, J-11.

Russian radar developer NIIP and India are co-developing improvements to the already capable Su-30 N011M Bars radar, and Russia and India are in the final stages of an agreement to develop and produce in India AESA radar modules, should India select the Mig-35 (re-named Mig-29 development with more fuel, better sensors and systems and higher agility). China now has squadrons of the J-10 (about F-16 capability) and is indigenously developing and manufacturing the Su-30MKK as the J-11. The Chinese PL-12 is considered to have capabilities similar to an AIM-120-C-5, albeit with components such as the Agat seeker sourced from Russia. Follow-on developments are planned for these aircraft and missiles.

Russia seems to have substantially out-performed the West in the production of missile systems. The anti-shiping missiles mentioned above are deadly, but there are very competent Russian-sourced air-to-air and surface-to-air systems as well. When I represent the Red Forces of the more military capable countries, I protect my air and maritime bases with combinations of Sa-10 / Sa-20 / Sa-19 Regiments and use the range of the Su-30MKx to bypass incoming strikers and attack the AAR and AWACs resources – if you drop a range-critical AAR tanker, you get the fighters for free. I load the 400Km KS-172 AWAC / AAR killer and add some KH-31 A&Ps for the mission, and have an air superiority escort with a load of R-77, R-27 and R-73's Air to Air Missiles.

We make much of the capabilities of new strike weapons such as JASSM – which is quite stealthy from the front, but can still be seen on low frequency radars, and from the rear is a Mach 0.7 non-maneuvring target with an IR signature that can be engaged by fighters or SAMs. So, an incoming JASSM attack can be seen in time to scramble interceptors which can engage with missiles such as the R-73; 'leakers' can be caught with close-in weapons such as the Sa-19.



Thus, the new paradigm for the ADF may be: '***we now face numerical and technological inferiority against possible adversaries***'. This is not a healthy military position for any country.

Often, during seminar war-games I hear people invoke what I call the 'Noggy Factor' (apologies for use of non-PC terms): 'they might have better equipment and more of it, but we are smarter and will therefore prevail'. History show how dangerous this attitude is: e.g. Japan in 1941 onwards, Korea in 1952, Vietnam in 1975, Somalia in 1993, Lebanon on 2006 and perhaps Iraq / Iran in 2008. The Indian Air Force has inflicted 29 air to air kills on its adversaries in the time the RAAF has achieved one accidental kill (apologies to Bill Simmons). The Russian based Omega organisation is openly advertising its 'Private Military Company' to support training and operations in other countries – future weapons systems may come with attached Russian or Ukrainian advisers or operators. While we derisively call these people 'mercenaries' we overlook the substantial number of foreign nations we have employed in our own Armed Services, including in Air Combat Group. The Indians and Chinese are especially intelligent and industrious peoples, and to assume intellectual superiority may be a dangerous delusion.

### **Changing Minds and Hearts about Australia's Future Air Combat Capability – but can the F/A-18F hack the Su-30?**

I was pleased to see that the ADO is sufficiently mature to reverse its prior 'no bridging fighter – ever' and admit that the F-35 has a high schedule, capability and cost risk. You will recall the numerous briefs I completed on this subject for you. I have had the pleasure of flying an F/A-18F for an hour or so, and while it is a fine aircraft, my assessment is that it is no match for a competently operated Su-30Mk fleet, supported by a network of sensors. As part of my research, we have sourced, via the Internet, flight manuals for the Mig-29, Su-27, F/A-18 A/B/C/D, the F/A-18E/F and the F-15E. Here is a rough summary table of these key aircraft's capabilities:

<b>AIRCRAFT</b>	<b>F/A-18F</b>	<b>Su-30MKI</b>	<b>F-15E+</b>
<b>Max Mach</b>	1.6	2.35	2.5
<b>Max IAS</b>	800	729	800
<b>Max G</b>	7.6	9	9
<b>Combat Radius</b>	680 Nm	1094 Nm	980 Nm
<b>Service Ceiling</b>	50,000 ft	56,760 ft	60,000 ft
<b>Manoeuvrability</b>	Medium	Very High	High
<b>Radar Detection</b>	80-100 Nm	60 Nm	80-100 Nm
<b>Missile Range Front</b>	40 Nm	60 Nm	40 Nm

In the past, our fighter tactics have been to close to just inside the edge of our BVR missile envelope, fire at the 'F' Pole, wait until the 'A' Pole and turn away to escape. While not maximising the kill probability of the missile, it confers invulnerability against an enemy that has an aerodynamically inferior aircraft and no BVR missiles. Now, the tables are turned. For the F/A-18F to fire a

shot, it must close inside the edge of the missile envelope, fire, wait for the 'A' Pole, then turn away. However, a Su-30MK has the first opportunity to take a combined Radar / IR shot, and if it misses, can chase the F/A-18F down using its superior speed and fuel reserves until it can make a 'no escape' rear sector shot at about 15 Nm. If necessary, it can close to R-73 or guns range.

The highly agile Su-30MK can manoeuvre to avoid incoming missiles. After coasting for (say) 30 Nm an AIM-120 has very little capacity against a high-G target. An instructive question of our USA colleagues would be to ask them to reveal the results of an AIM-120 fired at (say) 30Nm against a target at 55,000 feet, towing a KEDR active decoy, being cued by a radar warning receiver, and with canards and vectored thrust being able to dodge an incoming missile with a 4-5 G continuous turn. I suspect there have been no such live-firings against what would be realistic target behaviour in air combat.

In the future, I expect to see software controlled evasion manoeuvres built into the Operational Flight Program (OFP) of fighters, and once armed, the aircraft would maximise its survival probability with auto-pilot manoeuvres cued by the radar warning receiver, or a pilot activated control such as an emergency button on the throttle or stick. So the famous 'Cobra' manoeuvre much beloved by air-show crowds may have a very valuable 'survival' air-combat capability.

My assessment, based on considerable research and backed by my academic training in physics (thanks to the RAAF Academy), is that the F/A-18F supported by AEW&C and AAR will not prevail against the SU-30MK supported by a sensor network operated by a competent air force. Once the F/A-18 reaches its engagement range, it will be run down and killed by the Su-30, unless the engagement takes place at the Su-30's extreme range - where even JASSM-ER cannot reach the Su-30's home base. I have a detailed Excel spreadsheet model derived from Flight Manuals and data supplied by Sukhoi that calculates these ranges.

If we really are stuck with the F/A-18F, and don't at least investigate purchase of the only western aircraft competitive with the Su-30, the F-15E++, then we should give the Hornet the best possible chance. Defensively, Miniature Air Launched Decoys (MALD) have the capacity to confuse the air picture and draw missiles away. Offensively, longer range BVR missiles are essential, as the APG-79 radar is likely to get longer range detections on the Su-30 than the N011M radar on the Su. However, such detection ranges are of no use unless a missile can get to the Su-30 before it releases its missile. A fair assessment is that the F/A-18F has an 80 Nm radar and a 40 Nm missile, while the Su-30 MKI has a 40 Nm radar and an 80 Nm missile.

And obviously, support during offensive counter-air from the F/A-18G 'Growler' would greatly enhance the survivability of the F/A-18F. We need to purchase 6 'Gs' to support and protect the 24 F/A-18Fs.

Last year I participated in detailed discussion with MBDA on developments to the Meteor missile that has a kinematic range of about 100 Nm and a design specification to engage aircraft targets manoeuvring at 9 G. Such a capability would greatly increase the F/A-18F's offensive counter-air capability and survivability. We also suggested that the Meteor be fitted with the ASRAAM / AIM-132 seeker to produce an equivalent of the long-range R-27ER IR Missile. If Australia partially funded MBDA in these developments, it would have a second-source to the AIM-120D - assuming the USA will release this missile

for export. The Meteor at this stage has a longer design range than the AIM-120D, typically 100Nm versus 75 Nm.

Over the past year the USA seems to have realised that its much vaunted stealth technology is being overtaken by sensor and weapons systems development. Increasingly, it looks as though stealth is an evolutionary dead-end. Multi-spectral sensors work well against all types of aircraft and ships – stealthy or not – and countries such as USA, China, Russia, Ukraine, Czech, France and Italy are all producing sensors to counter Low-Observable (LO) platforms. I find it ironic that we place so much reliance on JORN and conduct research into surface-wave radars, but suppose our adversaries will not do the same. We used to advertise JORN as being able to detect stealth aircraft. (This claim has recently been excised from the web-site – too close to the truth for comfort?) Fly a B-2, F-22A or an F-35 in JORN's coverage and it will be detected. We seemed to have realised this back in 1980, and equipped our F/A-18's with HF radar, so they could be vectored to the target area beyond UHF radio ranges, then use on-board sensors to complete the intercept when close to the target. These days, a Su-30 on a long range intercept could be vectored by a satellite or Low-Earth Orbit (LEO) (Iridium et al) communications system.

I have enclosed a paper I wrote for Strategy Division: 'Engaging Stealth Aircraft Using Multi-Spectral Sensors and Weapons'. This paper provides more detail on the sensors being developed and installed to counter LO platforms.

Having realised that the LO status of its B-2, F-22A and F-35 platforms may have been countered, new technologies such as directed energy are being pursued in the USA. Some of these have promise and directed energy from AESA radars may well blind or confuse enemy radars and weapons. However, the USAF seems to be back-tracking and now has plans to retrofit 178 F-15Es and 200 F-15Cs with AESA radar and new EW equipment. These aircraft will be similar to the F-15Es being produced for Singapore and Korea, and will have a electronic capability similar to that of the F/A-18F – and a far superior aerodynamic capability competitive with the Su-30, especially if refitted with the F100-PW-232 vectored thrust engine.

One person for whom I have high regard – based on several interviews if have read – is the USAF's Air Combat Command Chief (ACCC), General Ronald Keys. He seems to have grasped the implications of the new sensor suites being developed and installed overseas, and is looking for effective counters. Examples are using LO aircraft on 'hit and run' raids to deliver weapons inside an adversary's reaction time, and to maximise the return on investment in high-capability platforms like the F-15C&E by retro-fitting them with modern avionics suites. The development of the AIM-120D is being accelerated and redefined- it now has a two-pulse motor to deliver much improved kinematic performance at a 50% increase in range over the AIM-120C-5. His interview statements seem somewhat incongruent with the USAF's Chief, General Michael Moseley's Congressional hearings statement that he does not want new F-15E+ aircraft as they will cost more than the F-35. (That may well change.)

The USAF's air combat exercises are changing in nature, and they are beginning to test the F-22A against aircraft with equivalent capabilities to the newer Mig-29s and Su-30MKxs. However, they have not positioned the exercise to a location where low frequency radar coverage would reveal the

location of the F-22A – or emulate that capability now being installed by India and China. What might interest ACCC would be an exercise based and Learmonth and Curtin inside JORN coverage – perhaps with the F-22As defending Learmonth, B-2s based at Guam or Tindal attacking Curtin, F-15Es operating out of Curtin and attacking Learmonth and our F/A-18s providing point-defence of Curtin. Intercept vectors to the F-22A and the B-2 detected by JORN could be relayed by aircraft or sitcom or ground-based communications network.

### **A Yawning Capability Chasm – Protection of Australia’s Military and Civilian Assets via Ground-Based Air Defence**

Australia is effectively undefended against cruise missile attacks. In the past, this was of little concern, because countries in our Region did not have the capability to prosecute such attacks. They do now. India is refurbishing its TU-95M Bear fleet as a missile carrier – as is Russia. With an un-refuelled range of 15,000 km, this aircraft can, for example, fly around JORN coverage to deliver land attack cruise missiles and anti-ship missiles to unexpected location throughout the world – including Australia.

Russia and India are jointly developing the BrahMos missile (a derivative of the SS-N-26 Yakhont) for carriage on the Tu-95M and the Su-30MKI. India announced plans to convert the BrahMos to a land-attack version and produce 1,000, with 500 for export. (Note: the BrahMos is supersonic in the Mach 2.0-2.5 range.) China has fitted extra pylons to its H-6 Badger to launch the YJ-63 Land-Attack Cruise Missile (LACM). LACMs may also be launched by the increasing submarine fleets of India, China and aspirationally, Malaysia and Indonesia.

Of equal concern is the reported conversion of the Chinese DF-21 (MRBM about 2,000 km range) to attack with multiple independently targeted conventional warheads.

The USA has realised its vulnerability to such attacks, and has developed a special version of the AIM-120 – the C-6 – with a warhead optimised for destruction of cruise missiles.

The F/A-18Fs APG-79 AESA radar is proving to be very adept at detecting and engaging (subsonic) cruise missiles, but 24 aircraft are unlikely to be able to provide 24/7 coverage of more than a small area – and at great cost.

The AWD is being optimised for this role, but again, the vulnerability of a ship to attack and the small number questions the overall capability for defence.

During the Indonesia – Malaysia confrontation, Australia formed 30 Squadron in 1961 and equipped it with the Bloodhound SAM. In 1964 the RAAF deployed it to Darwin, in recognition that the F-86 was incapable of adequately defending the area from air attack. Given the proliferation of LACM and long-range attack aircraft, it seems prudent to revisit GBAD as part of Australia’s defences.

There are several SAMs that can counter cruise missiles. Of these, the Patriot PAC-3 and the Sa-20 seem the most capable. If we could overcome our aversion to purchasing Russian / Ukrainian weapons, we could open competition to include missile systems from several countries including the very capable Sa-10 / Sa-20 system. Ukraine offers an Sa-10 interface to its Kolchuga ELINT tracking system. A competitive SAM ‘shoot-out’ conducted at

Woomera against representative targets such as Tomahawk, JASSM and a supersonic missile such as the Sunburn would be very instructive.

JP-117 is perhaps the ADO's longest running project, but it is a capability that is now urgently needed, given the rapidly developing capabilities to attack Australia's mainland.

### **How 'Stealthy' is the F-35 Lightning II?**

Finally, an F-35 question: "what is the actual radar cross-section (RCS) of the F-35?"

This is a question of equal importance to the release of source code of the F-35's various OFPs and the vulnerability of the F-35 is materially affected by its RCS.

The radar cross section measurement of the Signature Measurement Aircraft (SigMA) F-35 was completed some time ago at Helendale, California. This is a quote from a spokesman on the subject:

"In a related development, a SigMA (Signature Measurement Aircraft)-a full-scale model of the Lockheed Martin Joint Strike Fighter (JSF) design has been mounted on a 98-foot-high pylon at the company's Helendale Measurement Facility in Helendale, Calif. The SigMA test plan is designed to measure the radar cross-section of the aircraft, the performance of the aircrafts antennas, and the robustness of the low-observable materials performance. Some doors and panels will be intentionally damaged during the tests in order to determine the impact of defects and the effectiveness of repairs.

The high level of detail built into the SigMA model is unprecedented for this stage of development," said Henry J. Sherrer, manager of the JSF signature demonstrations. "The SigMA results to date closely match our detailed predictions."

So, the USA knows what the radar cross section of the F-35 is. We must have access to these measurements, as they are absolutely critical to determining the vulnerability of the F-35 to attack using existing centimeter wavelength radars and missiles. I have attached a picture overleaf of the experiment in progress.

My logical take on this is that if the USA refuses to reveal the RCS of the F-35, we should refuse to purchase it – on the grounds that if the RCS was small, they would tell us, but if it is as large as some think, they will not and thus we will buy a 'pig in a poke'.

My best guess, based on some Internet intercepts and the configuration of the F-35 is: Front – 0.1 SqM, Side – 0.3 SqM, Rear – 1 SqM, Top and bottom – 1.5 SqM. If these numbers prove to be close to the mark, then the F-35 will be engaged by aircraft using conventional centimeter length radar and missile seekers including the SU-30, its R-77 BVR missile, and SAMS such as the S-400 from the SA-20 system. While countries such as India and China will have the capacity to find and engage LO aircraft with their networked low-frequency and ELINT sensors, RCS of the order given above will allow countries such as

Indonesia, Malaysia and Vietnam to find and intercept the F-35. This is especially serious, as the F-35, like the F/A-18F, does not have the aerodynamic performance to escape once it has been detected.

### **Conclusions**

To conclude, I deeply regret not being able to continue this work. While the results may be confronting, I believe they have made a substantial contribution to the development of the ADF and its capabilities, and would continue to do so in the future. My assessment is that the world in our Region is rapidly becoming a much more dangerous place, and we need to redouble our efforts to keep ahead of the competition.

I have, of course, much more detailed data on these subjects, and if you have an item of particular interest, I would be happy to research it for you.

My suggestion, if this is not already in train, is to open discussions with advanced and pragmatic thinkers such as the USAF's ACCC, General Ronald Keys, so we can bring our intellectual and industrial powers to bear on a problem in time to be effective when called.

The ADO should also open a special project to look at the vulnerability of the F/A-18F and ways of countering the Su-30 and Mig fleets being acquired in our Region. A companion project would be to look at better ways of protecting our maritime fleets from air, sea and submarine launched swarm attack of supersonic missiles. The project needs an 'entrepreneurial' approach to the subject, with coverage across military organizations and companies with a vested interest in regaining air and maritime superiority over these new and deadly weapons systems.

Over and out,

Milo

There was no reply to this letter, which I found surprising, as Angus had previously always acknowledged my work. At times, Staff Officers 'protect' their busy boss, and I thought my analysis may have been victim of such practices.

I consequently decided to use the Defence Service Charter process and sent this following letter to my supervisor, General Hurley on 18<sup>th</sup> April 2007 after the 15 working days cited in the Defence Service Charter had passed.

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18 April 2007

General D. Hurley, AO, DSC  
Chief, Capability Development Executive  
R1-3-C006  
Russell Offices  
RUSSELL ACT 2600

Enclosures:

A: Copy of a my personal letter to CDF;  
B: Paper: Engaging Stealth Aircraft using Multi-Spectrum Sensors and Weapons

Sir,

### **EXIT CAPABILITY BRIEF FROM WGCDR RSG CHRIS MILLS**

1. This is an 'exit' strategic capability brief, as I declined to work on Continuous Full-Time Duty (CFTS) after the important and interesting elements of the job were excised in an effort to appease Air Force Headquarters – a brief comment on that later.
2. CDF has in the past (when CAF) extended me the privilege of contacting him directly when I have a matter of concern. Knowing how busy CDF is, I have not contacted CDF since his appointment, as I believe my work in CDE would produce the right results through our normal staff processes; however, as my work has been terminated, I recently wrote directly to CDF. Having not received a reply, and judging the sensitivity of the issues, I thought it prudent to provide you with a copy.
3. For the past five years, I have been working in Strategy Division (Military Strategy Branch) and more recently in your Executive researching the future capabilities of the key countries mentioned in the Australian Illustrative Planning Scenarios, plus research into key weapons systems. To competently represent the 'Red' forces in the Explosive Ordnance Studies and Force Options Testing, I must also research the future capabilities of the 'Blue' forces, seeking vulnerabilities I can exploit in these seminar war-games. This is important and interesting work, and I have been greatly stimulated supporting DGC&P and DEO, Mike Price in these activities.
4. The essence of my concerns is expressed in my letter to CDF, and I will not repeat them here other than to say the F/A-18F decision is especially toxic, as it extends the life of our air combat fleet to a time when suitable alternatives – the F-22A and the F-15E+ may no longer be in production.
5. However, I would like to comment on future management of the ADF's Air Combat fleet. Air combat evaluations are complex matters as I'm sure you know, so I would like to introduce the term 'Fighter Metrics' as an overall description of the capability of a particular fighter and its supporting systems. Fighter Metrics include items such as maximum speed, service ceiling, specific excess power, range, payload, sensors and weapons, integration with off-board sensors etc. Aircraft such as the Su-30 family and later variants of the Mig-29,

when integrated per NCW as we are attempting, have very high 'Fighter Metrics' – far superior to the F/A-18F and the F-35. In the potential future warfare engagements with countries of the competency of India and China, and other countries with the support of 'Military Private Companies' such as is on offer from the Omega organization in Russia, the F/A-18F and the F-35 will be overmatched and overwhelmed as was the Boomerang (which never came back!) by the Zero in WW II, and the Meteor and P51D by the Mig-15 in Korea.

6. Three aircraft have the Fighter Metrics to defeat the Su-30 and Mig-29/35: the F-22A, the F-15E+ and the Eurofighter/Typhoon. I studied the latter in detail in 1997 when as Deputy Director for Air-Control, we were evaluating options that eventually led to the Hornet Upgrade Program. For cost and capability reasons, I would not recommend the Typhoon.

### **The Australian Air Combat 'Dream Fleet'.**

7. The air combat 'dream fleet' that will have a high probability of meeting the imperative of 'Australia's Defence Policy' as espoused in Sections 8.37 and 8.39 ('provide an acceptable likelihood of success in (air) combat') of the Defence 2000 White Paper is: **25 F-22As and 50 F-15AU.**

8. The F-15 is much like the Su-27/30 family of aircraft – modern versions such as the aircraft being produced for Singapore and Korea use the F/A-18E/F sensor and self-protection suites, plus have metrics such as agility and range-payload far superior to the F/A-18F and the F-35. In work I recently completed for you, passed through Mike Price and DGC&P, I demonstrated that the F-15E can deliver a standard weapon load of 2\*2000lb bombs at the same radius-of-action as the F-111, while providing for its own protection with its agility, radar, radar warning receivers, ECM jammers and air-to-air weapons.

9. Why the F-15AU nomenclature? The USAF call their project to equip the F-15E with AESA radar the 'Golden Eagle', Au is the periodic table symbol for gold, and the Internet designator for Australia. The F-15AU would have F/A-18F sensors and systems, plus the F100-PW-232 vectored thrust engine, giving it a super-cruise capability and the agility to avoid incoming missiles. NASA has also tested canards on the F-15.

### **Cost of Capability**

10. Arguments on the new air combat capability do not seem to have been addressed in a business-like way, the cost of capability being the case-in-point. Once a capability meets the required level of effectiveness, ways of maximizing cost-effectiveness should be sought. The F-15E airframe has a design life of 16,000 hours, the F-22 8,000 hours, the F/A-18F 8,000 hours and the F-35 8,000 hours. Using these design parameters, let's look at the metric of acquisition cost per flying hour. Assume 2012 'Project' costs in USD as follows: F-22A \$130m, F/A-18F \$100m, F-15AU \$110m, F-35 \$90m. (These are projections from reasonable extensions of current costs and estimates, plus recent sales.)

11. The plan is to purchase 24 F/A-18Fs and a pragmatist would suggest that the 100 F-35 purchase would be reduced to (say) 76. The 100 F/A-18F and F-35 aircraft would have a design life of 800,000 flying hours and an acquisition cost of  $24 * \$100m = \$2.4b$  plus  $76 * \$90 = \$6.84b$  for a total of \$9.44b. So, the acquisition cost per flying hour is \$11,500.



12. Next examine the F-22A / F-15AU mix. To buy the same number – 800,000 air combat hours – requires F-22A  $25 * 8,000$  hours = 200,000 and therefore  $800,000 - 200,000 = 600,000 / 16,000 = 37.5$  F-15AUs. So the project costs are F-22A  $25 * \$130m$  + F-15AU  $37.5 * \$110m = \$7.375b$ . Acquisition cost per flying hour is \$9,219.

13. Of course, you can cut this deck many ways. Air Force would argue that a fleet of 57.5 aircraft is insufficient to defend Australia during concurrent operations. So if we take the current estimated \$9.44b 2012 project costs and derive how many F-15AUs we can purchase as the 'free variable', the number now is 55 F-15AUs for a total fleet size of 80 – close to the 'Dream Fleet' numbers. However, the number of air combat hours delivered by this fleet increases to 1,071,272 and the acquisition cost per flying hour is \$8,625. (As an aside, as the Air Force's Workforce expert, I contend that Australia's population will not support 100 combat aircraft at surge rates, so we are better off having fewer airframes, flogging them harder, and providing incentives for air combat aircrew to serve longer.)

14. Comparing the two options, the current plan – even with the pruning of 24 F-35's – and using the same project cost, the ADF can now acquire a fleet of aircraft with Fighter Metrics substantially superior to the Su-30 and MiG fleets in our Region, **plus** have a strike capability far superior to the current or proposed air combat fleet, **plus** have a lower acquisition cost per flying hour.

15. There will be those who will argue that we must have a single type to be able to manage the logistic support. During the Defence Reform Program, it was my task to construct a workforce that could interface with corporate support for a range of services, including spares supply and repair, and aircraft maintenance. We can easily hack the logistic support requirements with the appropriate contractual and business relations.

16. The Dream Fleet also has the potential to assuage potential corporate ill feelings from Lockheed-Martin and Boeing. Lockheed-Martin gets to make a profit from the F-22A instead of the F-35 and Boeing a profit from the F-15AU instead of the F-35. While our capability plans should not be derived from overseas corporations' aspirations, we should not underestimate the effect these corporations can have when alienated.

17. Finally, an apology for declining your kind offer of CFTS. You surrendered an EL1 and an ASO6 (@ \$182,000 pa) to fund a WGCDR PLT (@ \$127,000 pa) and the exchange was agreed by the CFO and FAS-PERS. DGPERS-AF refused to establish a 'Flying Related' position to cover this type of research (clearly 'Flying Related') and to help manage guided weapons. DGC&P, in a diplomatic effort to avoid a scrap with AFHQ excised the 'Red Force' component of the job to scale it back to a 'standard' Wing Commander position. After some reflection, I declined CFTS as the important and interesting parts of the job were missing, and the remuneration much reduced. Notwithstanding, I retain a strong interest in this subject and have my databases intact, and would be pleased to assist you with this type of analysis in future.

Yours sincerely,

Chris Mills, AM, MSc, BSc

WGCDR RSG

I received no reply from General Hurley, and technically both he and CDF were now in breach of the Defence Service Charter: an example of having excellent procedures documented, but failing to follow them in practice.

The last paragraph refers to human resource malpractice in Air Force Headquarters. After delivering 'Red Force' analysis for several years and being remunerated with flying pay because the duties were clearly 'flying related', and with the tempo of work rising, I was asked to return to full-time-service. At the time, new Establishments were being created on a 'zero-sum' basis. To secure my services, General Hurley was prepared to sacrifice two positions to make room in his organisation for me. Air Force Headquarters refused to agree to the payment of Flying Allowances, possibly because there were retirement benefits involved.

However, they did allow other retired aircrew to return to full-time-service and 'refresh' their superannuation. This is a case of inequitable treatment. Compare this situation with the stated 'Air Force Values':

<http://www.airforce.gov.au/aboutus/values.aspx>

### **Air Force Values**

#### **The Royal Australian Air Force values its people**

#### **The Royal Australian Air Force stands for:**

- Delivery of effective, precision aerospace power
- Defence of Australia's people, security and interests.

#### **The Royal Australian Air Force aims to:**

- Be a professional, highly motivated and dedicated team
- Develop and support its people
- Be a safe and equitable place to work.

#### **The Royal Australian Air Force expects that its people will:**

- Display honest commitment to the Air Force Values
- Strive for excellence as both leaders and followers
- Be fair to and respect the rights of others
- Encourage diversity in all its forms

- Balance work and personal commitments, including family and relationships, for themselves and those they work with
- Work together as a team
- Communicate in an open and honest manner
- Be capability focussed and operationally ready
- Be professional and innovative
- Be recognised for their loyalty, integrity and determination
- Serve with pride and dedication.

Now greatly concerned that Australia would purchase the combat-ineffective F/A-18F, and by doing so displace the purchase of an effective air combat capability, but having received no replies to my briefings, I considered my options under the Defence Service Charter. Write to the Minister? Not very productive as I was complaining about the decision he was apparently about to make. In the end, I decided to write to the Secretary of PM&C in his role as Secretary of the National Security Committee of Cabinet and the Chair of the Secretaries Committee on National Security, and I would do so as a private citizen.

Here is what I wrote:

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MALLACOOTA VIC 3892

Telephone: 03-5158-0933  
Mobile: 0409-037-677

24 April 2007

Dr Peter Shergold, AC  
Secretary  
Department of Prime Minister and Cabinet  
P O Box 6500  
CANBERRA ACT 2600

Dear Doctor Shergold,

### **DUE DILIGENCE CHECK ON THE PURCHASE OF THE SUPER HORNET**

This letter is being written in the context your Department's National Security Division's analytical capability, your role as Chair of the Secretaries' Committee on National Security (SCONS), and your provision of secretarial services to the National Security Committee of Cabinet (NSCC).

Given the stated cost of \$6 billion for the purchase of 24 F/A-18F 'Super Hornet', and the dire consequences for Australia should it fail to fulfil the requirements of the Defence 2000 'White Paper' Sections 8.37 and 8.39, it seems prudent to conduct, independently of the Department of Defence, a

'due diligence' check of the capability of this aircraft to engage and defeat the new, highly capable air combat aircraft and sensor systems entering our Region.

Within the next few years India, Thailand, Malaysia, Vietnam, Indonesia and China will all have substantial fleets of the advanced Su-30MK and MiG-29/35 aircraft. The more advanced countries, especially India and China, are using Network Centric Warfare principles to build long-range, multi-spectral sensor systems (e.g. like Australia's JORN,) to detect, intercept and engage intruders into the airspace in their Region – and often well beyond their borders. A paper, 'Engaging Stealth Aircraft' is enclosed to illustrate how low-observable technology is being countered.

Many people believe that the F/A-18F is substantially inferior to these aircraft. You might consider sampling expert opinion on this subject from sources outside the Department of Defence. For example, the Office of National Assessment might have a view on the relative combat capability of these aircraft. Senator (ret'd) David MacGibbon, (tel 07-3870-9038), formerly Chair of the Defence Committee has presided over many detailed Parliamentary discussions on this subject and has received many classified briefings on the capability of these aircraft. Former Chiefs of the Royal Australian Air Force observe a code of silence not to criticise any of their colleagues, but may speak to you privately on the subject; Air Marshal David Evans, AC, DSO, AFC, Air Marshal Jake Newham, AC and Air Marshal Ray Funnell, AC are well versed on the capabilities of these aircraft and systems. Civilian experts might include Hugh White from the Strategic Defence Studies Centre and Andrew Davies from the Australian Strategic Policy Institute.

Defence claims to have conducted simulation and intelligence studies that 'prove' the superiority of the F/A-18F over the Su-30. In the recent past, when such work has been audited by people with the appropriate military experience and security clearances, substantial shortcomings have been found in the analyses. This is one of the most studied subjects in military aviation. Scientifically reliable verification and peer review should be sought from sources such as: the UK Defence Evaluation and Research Agency, the USAF Air Force Research Laboratory, the U.S. Navy, the Rand Corporation and the Singapore Ministry of Defence. Results from the Boeing Australia Systems Analysis Laboratory should be treated with caution as Boeing will not release the underlying data that generates its results, thereby denying verification.

The hypothesis to be tested is:

'Is the F/A-18F capable of meeting the Government's Defence 2000 imperative (especially Sections 8.37 and 8.39) when engaging the more advanced Su-30s and MiG-29/35 and their associated weapons and sensor systems in our wider Region in the time before the F-35 JSF, or an alternative air combat capability, is in operational service in the RAAF?'

Should your soundings suggest that the F/A-18F does not possess the required air-combat capability, you might then ask these experts for an opinion on which aircraft would confer the required degree of air superiority on the Royal Australian Air Force. Possible contenders would be the F-22A (which could be purchased by Australia, notwithstanding recent press comment,) the F-15E+ 'Golden Eagle' with a configuration similar or superior to the versions now in production for Singapore and Korea (e.g. AEASA Radar, vectored thrust engines,) and the Euro fighter /Typhoon.

The Government's initiative in funding a bridging air combat capability is to be lauded because:

- Australia's F/A-18A/B and F-111 aircraft are nearing the end of their operational lives and are obsolete in the highly competitive air combat world;
- the F-35 / JSF is a high-risk project in terms of cost, capability and delivery, and its initial operational capability may be achieved well after the demise of the F/A-18 A/B and F-111 fleets; risk appears to be increasing; and
- Countries in our Region are arming and becoming competent at air combat much faster than anticipated and are likely to achieve air superiority, and perhaps air dominance, before the F-35 JSF or an alternative provides Australia with the required degree of air superiority.

If the advice you receive indicates that the F/A-18F will not prevail, but that an alternative would, then it may be prudent for the Treasurer to announce in the forthcoming Budget funding for a 'bridging air combat capability', but not for a specific aircraft. Such an action would leave the Government's options open while the relative combat capabilities available air combat aircraft, and their capacity to engage and defeat the Su-30 and Mig-29/35, is more thoroughly and reliably researched.

Yours sincerely,

C. L. Mills, AM, MSc, BSc

Given the strategic importance of Australia's air combat capability, requesting a 'due diligence check' was hardly a big ask.

The next event was the Minister for Defence's disclosure that he had unilaterally decided as a 'no-brainer' to purchase the 'Super' Hornet, while not relying on the Department of Defence's advice. The Chief of the Air Force had very recently advised Parliament that no interim fighter capability would be required.

Here is the Australian Financial Review article:

# Nelson explains bee in his bonnet about Hornets

The Defence Minister says there were sound reasons for overruling the air force on an interim jet fighter, writes **Geoffrey Barker**.

Australia's surprise decision last year to buy 24 F/A-18F Super Hornet fighters for \$6 billion followed a direct appeal from Defence Minister Brendan Nelson to Prime Minister John Howard about the risks facing the air force's combat capability.

Nelson discloses his appeal to Howard in an interview in which he reveals his scepticism of air force advice that there was no pressing need to buy an interim fighter to cover an air combat gap pending Australia's acquisition of up to 100 F-35 Joint Strike Fighters from 2012 for a record \$16 billion.

He tells *The Australian Financial Review* that his appeal to Howard stressed the complexity and risks associated with the JSF project in the United States, and the unacceptable risk of keeping Australia's ageing fleet of F-111 bombers flying beyond 2012.

"I said to the Prime Minister, 'We don't have a gap, but there is a significant risk which will grow, which is difficult to quantify in terms of a gap emerging'."

Nelson says. He then told Howard, and later cabinet, that the foremost contingency for reducing the risk in



The Super Hornet. "To me it was a no-brainer because we are a Hornet country," says Brendan Nelson.

Photo: JAMES DAVIES

the transition to the JSF fleet would be to acquire a squadron of Super Hornets. With Howard's support, he prevailed and went ahead with the purchase.

"To me it was a no-brainer because we are a Hornet country. The Super Hornet will have fifth-generation radar capacity. It carries a significant weapon load. It's multi-mission. It's a well-developed aircraft. Like the C-17 heavy transport aircraft, we can get it off the US production line, which is what we are going to do", he says.

The decision to buy the Super Hornets, revealed last December by the *AFF*, was contentious because of its high price and because air force chiefs had said that no interim fighter would be needed, although they identified the Super Hornet as their preferred fall-back option.

Nelson says he had been convinced that the JSF was the correct aircraft for Australia. He was also convinced of the "enormous complexity and potential risk" in scheduling the transition to the JSF.

He says Defence Force chief Angus Houston had told him that no decision needed to be made until next year, when the government would finally commit to the JSF purchase.

But Nelson said he would not sign onto the JSF program until satisfied that Australia was getting full access to the data and technology it required, satisfied with the Australian industry participation package, and he had seen a fully developed contingency option for the JSF.

"[Air force chief] Geoff Shepherd

and his people were saying to me 'There is no gap. There is no gap'. But I went along and I spoke to the Prime Minister. I went through it all with the PM and said 'This is where we are at'."

Nelson says he told Howard the variables affecting the JSF delivery schedule were outside the control of Lockheed Martin, the aircraft's makers. They included decisions of the US Congress and of the nine JSF project partner countries on delivery rates.

He also told Howard the ageing F-111s had a limited capability to be fully integrated with fifth-generation combat aircraft. "It's fast, it's low and it's a bomber, but we have to send three F/A-18s with it to protect it," he says.

Nelson also told Howard that risks associated with the F-111 fleet started to increase from 2010, and from 2012 the engineering risk became unacceptable.

So, Nelson says, while he was locking into the Super Hornet purchase in October, the air force chiefs were still saying there was no gap. "It was their obligation to do so."

But once the decision to acquire the Super Hornets was made, Geoff Shepherd said to me "We didn't think we would get a minister who would be prepared to actually embrace it and a prime minister and a government that would make it available to us and to fully fund it. We strongly support it and believe in it."

Shepherd is unlikely to contradict that endorsement.

Dr Shergold's reply was 'curious'. His letter 23 May 2007 crossed with the Australian Financial Review's article, and in it he said (rather condescendingly to an experienced, retired SES Band 2 Officer of the Australian Public Service):

'Let me explain the public service assessment process. The Department of Defence provides detailed, technical and expert advice to government (and did so in relation to the acquisition of the F/A-18F Super Hornet). The Department of the Prime Minister and Cabinet carefully consider major defence acquisition and provides independent advice to the Prime Minister on such matters. Similarly, other relevant departments provide advice to their respective ministers.

I understand that you may disagree with the government decision to purchase 24 F/A-18F 'Super Hornets'. I am confident however, that officials acted appropriately in providing advice to government in respect of this issue, and that the government was well-informed. I do not see the need for further, independent scrutiny.

I have also copied your correspondence to the Chief of Defence Force, Air Chief Marshal Angus Houston and the Chief of Air Force, Air Marshal Geoffrey Shepherd.'

There is a non-sequitur between Dr Shergold's words about the Departmental advice to Government and the Minister's unilateral decision to purchase the F/A-18F, while at the same time the Chief of the Air Force was advising Parliament that no interim fighter was required.

However, the 'stunner' for me was that my private correspondence had been sent to CDF and CAS by Dr Shergold – a clear breach of my privacy.

Retribution was swift. I was, to use the colloquial term 'carpeted' by the Director General of Personnel – Air Force, Air Commodore Hewitson. He advised me that the Chief of the Air Force was very angry that I had written to Dr Shergold, and that henceforth, all of my Reserve work would have to be personally approved by Air Marshal Shepard, and that it would be 'highly unlikely' that any work would be approved.

***In simple terms, I was being 'black-listed'.***

I am not easily intimidated by such confrontation, especially when it constitutes a clear abuse of power and contravenes the Air Force Values listed above. I advised that my letter was written to Dr Shergold in a private capacity, and that it was a gross breach of privacy for him to send my letter to CDF and CAF. In addition, the Defence Service Charter conferred the right for me to challenge decisions, but having followed the defined procedures which were unsuccessful with both Air Chief Marshal Angus Houston, and General David Hurley, (and both Officers being technically in breach of the Defence Service Charter) I believed that it was in the National interest to resort to writing to somebody in a position of authority to at least review the decision.

Eventually, I received a brief letter from Air Commodore Hewitson dated 30 August 2007 stating:

I acknowledge that your commentary was well-intentioned and that you were motivated by a sincere desire to support the National interest.

My reading of the intent of this letter was that sending a reply, however brief, was a means of achieving a Department-wide technical compliance with the Defence Service Charter.

Notwithstanding, Air Commodore Hewitson was accurate in forecasting an effective 'black-listing' as, apart from the paid days required for

medical examination, I did not receive any further Reserve work, despite several Sponsors requesting my time, until my retirement on 30 August 2011.

The matter did not rest there. I was approached by ABC's Four Corner's to appear on a program 'Flying Blind' to discuss the deficiencies of the F/A-18F 'Super Hornet' and the surrounding acquisition processes. I agreed, and appeared on 20 October 2007 with Air Vice Marshal Peter Criss, (ret'd) who was also 'black-listed' and successfully appealed against his 'wrongful dismissal'.

The program can be viewed here:

[http://www.abc.net.au/4corners/special\\_ed/20071029/hornets/default.htm](http://www.abc.net.au/4corners/special_ed/20071029/hornets/default.htm)

The independent analysts appearing on Four Corners all agreed with my assessment that the 'Super' Hornet would not be combat effective, and that the program was a complete waste of money with a high opportunity cost.

The response to the Four Corner's program inside Defence was predictable. I heard from a colleague working in Defence that a senior Admiral in Capability Division had described our appearance as '*unconscionable conduct*'.

The same Admiral had commissioned an examination of the survivability of the Air Warfare Destroyer (AWD), which my colleagues and I evaluated using the Department's simulation technology. The results came as no surprise – when the AWD was 'smarm' attacked by supersonic sea-skimming missiles, its operational life could be measured in a few tens-of-seconds as I has advised CDF in March 2007.

The results were not questioned, but caused considerable consternation among senior officers of the Department, especially the Admiral. Once of the civilians present correctly advised the Admiral that, if the simulation results were indicative of the real vulnerability of the AWD, then the Government should be informed.

Did this, in fact happen? Or did the Department continue to recommend the purchase of the AWD in a configuration where its vulnerability made it unfit for purpose?



This is a matter of record, not of conjecture, which the Committee can determine by calling for the relevant files and Ministerial briefings to be tabled.

My colleagues and I reproduced these results after we had left Defence Employment, using open-source information. We showed this simulation to a Chair of the Defence sub-Committee in which a Royal Australian Navy Task Force consisting of two Air Warfare Destroyers, two ANZAC Frigates and two Canberra Class LHDs, with about 3,000 embarked souls was attacked by an anti-shipping strike force of four Sukhois armed with the Yakhont / BrahMos missiles, fired as a 'swarm' attack. We repeated the simulation several times for the Chairman, and the results were consistent – most of the ships were sunk, with massive and irrecoverable loss of Defence capability and lives.

So, it is fair to pose this question: which is '*unconscionable conduct*': recommending the purchase of a multi-billion Air Warfare Destroyer to the Government knowing it would last just a few seconds in a modern anti-shipping attack and risking thousands of Defence Force personnel lives, or appearing on the Nation's media to question the value of air combat capabilities on which the Nation's future security will depend?

There is a footnote to this imbroglio. The Indonesian Navy, TNI-AL successfully test fired a Yakhont / BrahMos / SS-N-26 on 21 April 2011, sinking the target ship some 250 km away, demonstrating the maturity of this anti-shipping capability.

[http://www.youtube.com/watch?v=fb5k\\_0wzimo](http://www.youtube.com/watch?v=fb5k_0wzimo)

[http://www.upi.com/Business\\_News/Security-Industry/2011/04/28/Indonesia-tests-Yakhont-missile-finally/UPI-35041303986180/](http://www.upi.com/Business_News/Security-Industry/2011/04/28/Indonesia-tests-Yakhont-missile-finally/UPI-35041303986180/)



Indonesia now joins other nations in our Region such as China and India, in possessing a lethal anti-shipping capability. My advice to CDF Houston dated 31 March 2007 became a reality on 21 April 2011. This anti-shipping capability has been fielded before an Australian Air Warfare Destroyer has left its slipway.

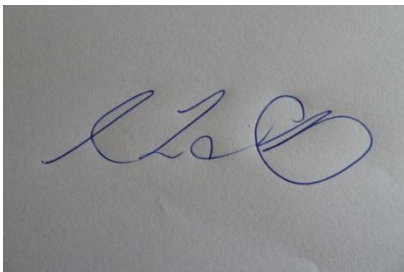
## **CONCLUSIONS**

The foregoing material demonstrates that the behaviour of quite a number of senior Defence Portfolio officials is incongruent with the standards they claim to set across the whole Australian Defence Organisation through documents such as the Defence Service Charter and the Air Force Values.

That officers of the Australian Defence Force, the Australian Public Service and members of the Australian Defence Industry have been 'black-listed' for attempting to professionally discharge their duties, for proposing what is necessary for the defence and security of Australia, is a fact of public record and is quite contrary to the advice given to the Committee by General Hurley.

Defence acquisitions such as the combat-ineffective F/A-18F 'Super Hornet' and the Air Warfare Destroyer demonstrate that suppression of debate on Defence's future capabilities is expensive in terms of fiscal and opportunity cost, and the consequent capability shortfalls are of grave concern in Australia's Region which is experiencing rapidly escalating military capabilities.

Clearly, 'Defence Culture' in its current form is putting Australia's future security at grave risk. The Parliament of Australia needs to exercise its democratic authority upon the Department of Defence Officers to ensure that their culture and performance is congruent with the security requirements of our Nation.



Chris Mills, AM, MSc (USAFIT, Systems), BSc (Melbourne, Physics)  
23 April 2012