

## United States of America

- 3.1 The delegation commenced their time in Washington with a briefing by Major General Tim McOwan, Head Australian Defence Staff.
- 3.2 The delegation attended the ANZAC Day Dawn Service at Korean Veterans War Memorial and then the ANZAC Day Gunfire Breakfast at the New Zealand Embassy.
- 3.3 The delegation then resumed its meeting program.

### **Meeting with the Hon Mr Frank Kendall - Acting Under Secretary of Defense for Acquisition, Technology & Logistics**

- 3.4 Mr Kendall informed the delegation that his key challenge is to equip United States (US) forces within the defence budget available. As this budget reduces, the challenge is becoming harder; accordingly, the pursuit of cost effectiveness in acquiring capability is paramount.
- 3.5 Budget constraints have forced the US to review its acquisition program. This is being done from a strategic perspective, with a focus on reaching a specific strategically based position, rather than making ad hoc cuts that could be detrimental to the strategic position of the US.
- 3.6 This strategic position reflects where the US requires its force structure and disposition to be in 2020. It includes a renewed focus on the Pacific and Asia, increased maritime and air power, and the capacity to conduct two operations simultaneously.
- 3.7 Planning and reviews take a 'strategy first, budget second' approach. However, the full force structure desired by the US is not affordable, and so there will be cuts. However, any cuts will consider strategic implications.

- 3.8 The 'strategy first budget second' approach to planning will likely take four to five years. During this time, it is important that Defence leaders keep faith with US defence personnel, and, while personnel costs would eventually reduce, in the short term Defence leaders recognise the importance of meeting obligations to a Defence force that has been engaged in Iraq and Afghanistan for many years.
- 3.9 To address the constrained equipment budgets the US face in coming years, a number of management strategies have been implemented in the Acquisition Technology and Logistics (AT&L) environment, specifically:
- new programs will be cost capped;
  - unaffordable programs will not be started;
  - requirements 'creep', and attendant cost overruns, will be contained;
  - through life support costs (including facilities, spares, IT and services) will be reviewed and managed more effectively.
- 3.10 In addressing the challenges faced by Australia and the United Kingdom (UK), Mr Kendall noted:
- Australia's choice of Foreign Military Sales (FMS) or 'off the shelf' acquisitions provide greater predictability in individual programs, whereas the US faces greater uncertainty due to the number of developmental programs it has embarked on.
  - The personnel challenges faced by the US are different to the organisational challenges faced by the UK, which is presently considering a much bigger cultural shift of the Defence Equipment and Support (DE&S) towards outsourcing and contractor operated activity.
- 3.11 The delegation were advised that, in the US, industry is engaged early in the capability acquisition process, largely through mechanisms such as the conduct of concept studies and the development of prototypes. The US has a preference for maintaining competition during the early stages of a program, and has found that such a strategy does not add significantly to initial program costs.
- 3.12 As in Australia, the management of Intellectual Property (IP) is a challenge, but the US makes IP a key selection issue when equipment solutions are being determined.
- 3.13 Mr Kendall told the delegation that there is concern that people in Department of Defense (DoD) are being trained to manage the bureaucracy, not to manage contracts, programs and industry.

- 3.14 The US does have a preference for competing Through Life Support (TLS), although the US experience is that the Original Equipment Manufacturer (OEM) is often awarded the TLS contract. Acquisition, Technology & Logistics (AT&L) has embarked on some performance based logistics contracts, and, in constrained budget circumstances, reliability and availability through life are critical issues in managing the cost of operating equipment fleets.
- 3.15 Performance based contracts can provide good incentives for companies providing TLS to reduce costs and improve profits, but the US does have examples where performance based contracts have been managed poorly.
- 3.16 Concurrency, that is where a capability is being built and designed at the same time as for example in the JSF program is an issue. In the case of the JSF production commenced too early, resulting in the need for too many rounds of Low Rate Initial Production (LRIP). The Mine Resistant Ambush Protected (MRAP) family of vehicles is regarded as a better example of 'how to go fast' on a program. In this case the components in the vehicle were not new, and the overall vehicle concept was simple. On the other hand, the JSF was far more complex and the pursuit of a stable design, and the development of prototypes, should have been prioritised.
- 3.17 In closing the meeting, Mr Kendall advised:
- That the US remains strongly appreciative of Australia's efforts in Afghanistan, and thanks the delegation for Australia's on-going support.
  - The JSF program is stabilising, although another 1-2 years of testing will be necessary.
  - Strongly encouraged Australia's continuing participation in the JSF program, noting unit costs will be dependent on production numbers.
  - Cyber, space and missile defence are areas where further bilateral opportunities for collaboration will arise.

### **Meeting with Vice Admiral William E Landay III – Director, Defense Security Cooperation Agency**

- 3.18 Vice Admiral Landay provided the delegation with a general background briefing on the role of the Defense Security Cooperation Agency (DSCA) and the Foreign Military Sales (FMS) program administered by the DSCA.
- 3.19 In the course of the presentation, Vice Admiral Landay:

- emphasised that the FMS program is seen by the US Government as a key method of promoting interoperability and cooperation between the US and partner nations
- outlined the significant growth in the FMS program in recent years, especially in the areas of through Life Support (TLS) and service provision; and,
- highlighted the volume of activity undertaken by Australia, noting that Australia was ranked third in overall FMS sales in the last Financial Year.

3.20 After his presentation, members of the delegation discussed a number of issues. Topics covered included:

- The DSCA has a very positive view of the bilateral Defence Trade Cooperation Treaty, and recognises that present International Traffic in Arms Regulations (ITAR) provisions can be ‘cumbersome’. The US sees the introduction of the Treaty as an opportunity for promoting technology exchange, and the DSCA thinks that the US will be responsive to such activity.
- Without the benefit, to date, of seeing the Treaty in operation, it is accepted by the DSCA that the detailed provisions of the Treaty may prove onerous or unwieldy, but the intent is certainly to provide greater freedom for the exchange of Defence items and information with Australia, and DSCA will be working to that goal.
- FMS cases do not prohibit the exchange of personnel; however, there may be some case-by-case restrictions, specifically for sensitive technology. In Australia’s case, it is unlikely there will be many such cases. It should be understood that these restrictions accrue through ITAR regulations, rather than FMS arrangements.

3.21 The delegation noted that Australia has significantly increased its reliance on FMS acquisitions in recent years. Australia has identified specific capability requirements, many of which are leading edge or high end technology. The delegation were interested to know if the US feels under pressure from close allies to access highly protected technology, and if there is activity under way in the US to review such releases.

3.22 The delegation was informed that there is a general feeling in US Government that too many items are being controlled, and there are steps underway to move as many items as practicable from the Munitions List to the Commercial List – thereby reducing the control regime necessary for these items. The Secretary of Defense has a view that fewer items

should be controlled, but control of genuinely important technologies should be strengthened. In terms of release, it is a country-by-country issue, and in many cases, release requests are considered at the highest levels of Government. Rigorous screening of applications for sensitive technologies will continue, and there will always be some items that the US is reluctant to release.

- 3.23 In addition, release requests are often complicated by the integrated nature of platforms and equipments, and by the need to protect both US national security interests, and industry interests.
- 3.24 The delegation also discussed Australia's new submarine program, noting the current Government advice that any new submarines for Australia will rely on conventional, rather than nuclear power. However, as per the present COLLINS class boats, integration of high technology and sensitive US systems into the new submarines is likely. Consequently the delegation was interested to know how the US would deal with requests to release sensitive technology into non-US designed and built submarines.
- 3.25 The US advised that, generally it may be necessary for high tech systems to be fitted post construction, in an environment in which the US is satisfied enables the technology to be satisfactorily protected. In such a case, Australia would have to accept the conditions that apply to release of sensitive technology, and also the cost associated with fitting systems post hull construction. Establishing an FMS case to allow early engagement with the US in the design and construction phases of any project would be advantageous, and there are examples of the US and Australia working together in the early stages of major projects. A key driver around the timing of technology release will, of course, be the location where the submarines are built.

## ANZAC Day Reception

- 3.26 The delegation attended the ANZAC Day Reception held at the Australian Embassy. The reception gave the delegation an opportunity to mix with staff of the embassy on an informal basis and to view an impressive exhibition of photographs of Australian Defence Force (ADF) personnel in Afghanistan.

## Export Control Reform Roundtable

- 3.27 The Export Control Roundtable consisted of the delegation and the following participants from the United States:

- Mr Kevin Wolf – Assistant Secretary of Commerce for Export Administration, Department of Commerce;
- Mr Bob Kovac – Managing Director, Directorate of Defense Trade Controls, Department of State; and,
- Mr Judson Rose – Director Policy, Defense Technology Security Administration, Department of Defense.

3.28 The roundtable provided an opportunity for the Delegation to talk in detail with key US contacts about wide-ranging Export Control Reform issues, including the Defence Trade Controls Treaty.

3.29 Mr Wolf and Mr Kovac provided comprehensive introductions to the topic, addressed the following points:

- The current Export control reform initiatives stem from a 2010 announcement by Secretary for Defense Gates that cited the need for improved interoperability and US national security, and a requirement to focus control efforts on significant items/issues.
- Responsibility for progressing reform rests with a number of US Government agencies – hence representation from State, Defense and Commerce at the Export Control Reform Roundtable, resulting in the system being inherently inefficient, with multiple agencies and overlapping jurisdictions.
- Much of the present control system is based on the arms export Control Act (AECA), which dates from the 1970s and is ‘outdated’. In the 1970’s:
  - ⇒ technology was only ever shared between a limited number of western allies,
  - ⇒ military technology and innovation was leading the commercial sector; and,
  - ⇒ technology transfers were physical and transactional in nature.
- The AECA does not have a ‘dual use’ focus, and tends to treat all items as entire military products, which is no longer the case. Projects such as the JSF require a new paradigm for control.
- There are too many items on the US Munitions List, which results in over-control of individual components. For example, given that the brake shoes for a tank are subject to the same level of controls as the tank itself.

- The statutory authority afforded by the Commerce Control List is much more flexible, with more focus on dual use, than the legislative restrictions of the State Department's Munitions List .
  - Presently there are 17 different enforcement agencies with authority over exports with many having different definitions on what constitutes an export or who can act as an authorised person.
  - Much of the reform effort is focussed towards the establishment of the 'Four singles' - a single control list, a single IT system to operate across government, a single enforcement agency, and a single licensing agency.
  - Reform will not happen overnight, and the passage of reform through Congress, has been difficult. Pending legislative change, activity has been focussed on harmonising definitions and control list amendments, reviewing the items proposed for transfer to the Commerce List, and securing industry comment and agreement to proposed changes.
  - One key change being considered is a Licence Exception for 36 countries, including NATO countries plus Australia, New Zealand, Japan and South Korea, that would allow any item on the commercial List that is identified for government end-use to be exported licence-free. This would promote interoperability, joint operations, and more effective supply chains.
- 3.30 The delegation questioned when Australia can expect the proposed changes to the US ITAR system to be introduced and stabilised?
- 3.31 It was explained that the aim is to effect the majority of Export control reform initiatives by the end of calendar year 2012, but if a new Administration is elected in November, this may be jeopardised. Reviews of some categories of items on the Munitions and Commercial Lists will be completed in 2012, but others will not occur until 2013.
- 3.32 The delegation were interested in how source code/software will be treated under the reforms.
- 3.33 It was explained that the control of software and source code is in the scope of the reviews. Their treatment will continue to depend on the equipments to which they relate, so some items of software and source code will remain on the Munitions List.
- 3.34 The delegation expressed concerns over international collaboration between tertiary institutes, in particular, where foreign students are involved, and sought the panel's view about these issues.

- 3.35 The panel members stated that the issues of research and development and tertiary collaboration have been considered as part of the reform initiative. Congress continues to be concerned about how controlled information (or items) is protected. Under proposed reforms, approval would still be required to transfer any controlled information beyond the 36 country community, and some issues around dual nationality and country of birth, particularly of students/researchers remains.
- 3.36 The delegation observed that some Australian companies have indicated that the export of Defence related equipment will be more complicated under the treaty, and will choose to continue operating under ITAR provisions.
- 3.37 The panel members explained that the US is aware some companies have indicated they will opt to continue operating under ITARs, rather than using treaty mechanisms. The panel noted the complexity of the treaty mechanism is contributing to this view.
- 3.38 The delegation also asked if small companies would be pressed into the treaty community, or if they would be able to undertake related work without meeting Treaty requirements?
- 3.39 The panel explained that there is no blanket answer regarding small business. Each case will be assessed independently according to the nature of the activity.
- 3.40 In summary the delegation found that the Export Control reform activity is a transparent process within the US government and within US industry. While the Treaty will have benefits the change of a majority of Defence and dual use items from the Munitions List to the Commercial List through the reform package will provide more effective outcomes.

### **Meeting with Mr Keith Webster - Deputy Assistant Secretary of the Army for Defense Exports and Cooperation**

- 3.41 It was stated that, for the procurement of Army equipment from the US, Australia is able to specify requirements. In such a case, where Australia outlines its particular requirements, for example, in the Letter of Request in the FMS process, the US would then quote the marginal cost above the standard procurement price.
- 3.42 The delegation discussed the potential for Australia to maintain critical technical skills by posting people into US acquisition and sustainment programs. The US advised that, in general terms, the concept is supported but each case would need to be considered on its merits.



- 3.43 The issue of Intellectual Property (IP) was discussed. The US advised that IP is unaffordable to buy, but obtaining sufficient rights to allow equipment to be supported through life is important. However, any technical data transfer with Australia would be based on individual agreements between the US and Australia. Further, the US would be careful to ensure its industrial base is protected, and that competition against US companies is not inadvertently created as a consequence of the technical data transfer.
- 3.44 It was, however, discussed that Australia, Canada and the UK are considered to be at the top of a 'pyramid of trust' with regard to the use of protection of sensitive IP and Technical Data (TD).
- 3.45 The delegation raised the issue of lack of interoperability of communications equipment in theatre.
- 3.46 Mr Webster agreed that there have been communication issues, including those between elements of US forces themselves. He advised that, when such issues are elevated within the Army acquisition hierarchy, they have, in recent times, been resolved 'reasonably quickly'.
- 3.47 It was noted that Australia tends to have a slower pace of spiral upgrades than the US. The delegation sought comment on whether there was a view about the optimal pace of upgrades.
- 3.48 It was discussed that the pace of change is often dictated by 'soldiers' demands. This is true not only for technology, but also for items of personal equipment such as boots, sunglasses and clothing. However, the Army, and the US DoD more generally, are facing a significant contraction, and care will be needed to optimise the US inventory, while maintaining flexible platforms that can address a range of capability requirements.
- 3.49 It was further discussed that concerns have been raised that some programs over reach capability requirements, and, in order to reduce acquisition costs, these requirements will have to be managed carefully. In highly technological platforms, and in the case of technical inserts and upgrades, detailed needs analysis will be required.
- 3.50 It was also noted that, in the case of some equipment, such as communications, it is difficult to keep up with the pace of change. Such an example is the iPhone, where there is insufficient time to develop specific military requirements, such as toughening for combat or extension of battery life before further change emerges.

- 3.51 In light of future funding restrictions, the delegation were interested in the signals that would indicate 'hollowing' the US Defense Force, and whether any areas are exempt from cuts.
- 3.52 Mr Webster explained that the critical element will be to maintain personnel capability. There will be reductions, but these will take time and will be managed carefully. Removing the potential burden of sequestration<sup>1</sup> will allow for more effective planning, but given that personnel reductions can only occur at a specific pace, reductions in the US equipment inventory are inevitable
- 3.53 It was noted that a reliance on 'off-the-shelf' acquisitions poses a risk that intelligent customer capability will erode.
- 3.54 The US explained that one significant lesson it has learnt in the last decade is that there has been too much outsourcing, and key skills, such as system integration and program management have eroded. The Gansler report "*Special Commission on Army Acquisition and Program Management in Expeditionary Operations*", November 2007 identified these issues, and there is recognition that such skills must be rebuilt in the Department of Defense. It was also noted that some hollowing has occurred as an outcome of the surge to get US personnel into combat roles, but rebuilding of the skills is necessary, and the cost to do so will come at the expense of some acquisition activities.
- 3.55 The pursuit of efficiencies (cost reductions) by Government has a common theme between the US and Australia, and it was noted that the task of reform is complex and time consuming, and in some cases will involve generational change.
- 3.56 It was also discussed that there is significant pressure in the US to resolve the budget challenge the Government faces. Under this pressure, there is a risk of 'salami slicing' the Defense budget, and there is already evidence this is occurring. Such actions have significant consequences, and strategic rigour, including an understanding of what the 'pivot to Asia' means, must be applied to identify the necessary budget reductions. Additionally, there are specific regulations regarding the management of personnel, so reductions will, in the short-term, potentially have to be made in acquisition programs. If sequestration occurs, there will be a need to re-negotiate existing acquisition and support contracts to effect necessary savings.

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1 Sequestration is the term used in the United States to refer to Defence budget cuts.

- 3.57 The delegation were interested in knowing if, in the US, the through life support (TLS) of fleets were competed, or whether industry is encouraged to undertake long term investment through the establishment of long term partnering arrangements. The delegation also questioned which contracting models are perceived to generate the best value for money in TLS activity.
- 3.58 The US explained that there are a range of complications in the area of TLS. Each of the Services maintains a number of Service Depots, which are available to provide some TLS. Original Equipment Manufacturers also play a role. Competing TLS contracts is required by law, but in reality, there is often only one response to TLS tender requests, and new vendors are not always available in particular industry sectors.
- 3.59 In terms of contracting structure it was discussed that the pendulum swings between cost plus, fixed price and performance based, but the biggest challenge is ensuring there are effective and experienced personnel to manage the contracts. In particular, the US DoD struggles to negotiate appropriate contracts, often taking significant time, and resulting in sub-optimal arrangements.
- 3.60 Information was sought on the status of the Joint Light Tactical Vehicle (JLTV) program. The delegation was interested to discuss the number of vehicles and variants the US expects to acquire under the program.
- 3.61 The US advised that Australia had initially responded to an invitation by the US to participate in the JLTV program, and that participation in the Technical Development phase but Australia was seen by the US as valuable. The US would have welcomed Australia's continued participation in the Engineering Manufacturing and Development (EMD) phase, but the program has run into schedule difficulties, and the US is aware of domestic pressures in Australia to develop and manufacture an indigenous vehicle. It was noted US Army participation in an international collaborative program had been highly informative.
- 3.62 There was agreement at the recent AUSMIN Defence Acquisition Committee (ADAC) that Australia and the US would continue to work together in the area of protected vehicles, under an existing Memorandum Of Understanding (MOU).
- 3.63 Subject to ongoing budget challenges, the US proposes to acquire around 55,000 vehicles under the JLTV program. A more detailed program structure will be developed after EMD phase is complete.
- 3.64 The delegation questioned the US's experience of fielding double 'V' hulls on the Stryker vehicle. The US advised that, while there were concerns in

the program over power to weight issues, the vehicles have been fielded recently, with more modifications to be completed. It was noted that the US has not sustained any casualties inside Stryker vehicles since the double hulls were deployed.

## Meeting with the Government Accountability Office (GAO)

3.65 The following representatives from the Government Accountability Office met with the delegation:

- Mr Paul Francis, Managing Director Acquisition and Sourcing Management
- Ms Diana Moldafsky, Assistant Director Acquisition and Sourcing Management; and,
- Mr James Madar, Senior Analyst Acquisition and Sourcing Management

3.66 Ms Diana Moldafsky commenced the briefing with a description of the GAO's Acquisition and Sourcing Management Team. She advised:

- The Acquisitions Area conducts in-depth analysis of the US Government's largest and most complex acquisitions, including DoD weapons systems, NASA and DoD Space Systems and Homeland Security systems. GAO's goal is to provide Congress with early warning on technical and management challenges.
- The Sourcing area identifies ways in which acquisitions can be structured and managed to deliver maximum return on investment and strengthen accountability and integrity within the procurement arena. They also look at ways in which the supplier base can be strengthened.
- The GAO has evolved over the last ten years to become an organisation capable of providing early advice and early warnings on programmatic issues. The aim is identify risks to inform decision making rather than providing "after action reports."
- GAO personnel are not embedded in project teams but they are engaged very early in the project process. GAO staff continue to monitor programs on an ongoing basis and report annually on major programs, a process termed a "Quick look."

3.67 GAO briefly summarised the types of work conducted as follows:

- system or Portfolio drill Downs to evaluate how specific systems/programs are performing including:

- ⇒ requirements underpinning the acquisition;
  - ⇒ technical and program management risks;
  - ⇒ status of technologies in research and development;
  - ⇒ cost, schedule and performance issues; and
  - ⇒ performance of system in test events.
- Annual Major Weapon Systems Assessment:
    - ⇒ broad coverage of 60 plus DoD weapon acquisition programs, including assessment of product development risk based on best practices.
    - ⇒ summary of systems covering status, funding, cost and schedule baseline and assessment of technology design and production knowledge against best practices.
  - Cost Cutting Reviews
    - ⇒ development of best practices through assessment of leading commercial entities and government entities.
    - ⇒ best practices underpin a 'knowledge based approach' that can be applied to acquisition programs to identify deficiencies, risk and/or areas for improvement.
- 3.68 GAO personnel described some of the common issues and deficiencies associated with Defense procurement. In some instances these are similar to those faced by the Australian Department of Defence. The issues include:
- 12-15 year development cycles with turnover of key personnel, potentially many times, before the capability is delivered;
  - delayed delivery of capability which may be fielded late or already technically obsolete;
  - requirements creep;
  - cost growth;
  - funding instability; and
  - issues with industry capacity to deliver.
- 3.69 The GAO discussed that its philosophy towards project managers has shifted. The GAO now assumes that project managers are good people trying to achieve good outcomes but acknowledges that they may be compromised in the decision making process as a result of, for example, budget constraints and approval processes. These can, ultimately, lead to

poor project success, or alternatively, good people are not put in the position to succeed.

3.70 The GAO then described the knowledge based approach in further detail as follows:

- Knowledge Point 1: At the start of Development, Milestone B or contract award for ships, needs and resources are aligned. At this point, the GAO is looking at the technological maturity of the system and sub elements. The GAO uses the “technology readiness level (TRL)” as a key indicator. This is essentially a scale from 1 to 7 with 1 being the least mature and 7 being the most mature. A TRL of 7 would normally be a fielded capability. The GAO made the point that in the ship building domain, commercial enterprises do not accept contracts utilising equipment that is not technologically mature, whereas the Defense domain frequently pursues acquisitions involving capabilities that are unproven. This is often a contributor to schedule and cost blowouts.
- Knowledge Point 2: When the decision to start building prototypes, or start of ship construction), the design must be able meet user needs and must demonstrated stability. The GAO used the example of engineering drawings being completed to at least 90% in the ship building domain. GAO noted that in the commercial shipbuilding world, work would not commence until all the design elements were completed. Defense work is often commenced with less than the 90% stipulated by GAO. The importance of this knowledge point in avoiding schedule delay and cost blowout was stressed by the GAO.
- Knowledge point 3: At the decision to commence Low Rate Initial Production (LRIP), that the product can be produced within cost, schedule and quality targets must be demonstrated. For example the JSF has significant concurrent activity being undertaken in conjunction with LRIPs.

3.71 The GAO made the point that most DoD programs continue to proceed without the requisite level of knowledge. This puts them at higher risk of delay and cost increase. In the GAO’s analysis of major programs, they identified an increase of 11% in estimated procurement costs (\$121 billion). Approximately half of this amount is related to requests for additional quantities.

3.72 The GAO explained that, within the DoD, there is a series of independent review processes that ensures a program is being considered objectively. For example CAPE – Cost Analysis and Program Evaluation is one such

process. The GAO also noted that, even under self assessment, the numbers are often concerning, and this is a valuable lead indicator that the program has problems.

- 3.73 The GAO explained that the allowable growth rate in LRIP means that LRIP numbers can be exceeded by up to 10%. In addition, the DoD can seek a waiver to increase LRIP numbers without penalty. The GAO members were not aware of any program with as many LRIPs as the JSF, which currently has ten planned LRIPs.
- 3.74 It was noted that the GAO's approach to auditing Defense acquisition programs demonstrates a proactive effort to inform decision making, rather than reporting on failures after the event.
- 3.75 The delegation asked the GAO about the appropriate time to engage with industry and whether early engagement might reduce program risks. The GAO responded that early engagement was problematic prior to decision milestones. Too much involvement with industry in advance of decisions can actually interfere with the competitive process. There is a compromise between being able to inform decisions early and letting a competitive process run its course.
- 3.76 The GAO noted that successful program were often characterised by a willingness to make capability tradeoffs to achieve cost and schedule. They specifically cited the P-8A Poseidon capability where there was a time imperative to complete the program, and, decisions were made to keep the program on track.

### **Meeting with Mr Brett B Lambert - Deputy Assistant Secretary of Defense, Manufacturing and Industrial Base Policy**

- 3.77 Mr Lambert gave a broad assessment of the current US Defence industrial landscape, with a US focus. He raised the following key points:
- The US and Australia currently face a number of similar issues, such as constrained Defence spending;
  - Global commercial and financial complexity is increasing;
  - In Defence industry, there is an increasing interdependence between countries, and individual companies;
  - The US assesses there is ongoing risk to the viability of second and third tier suppliers. Prime contractors (Primes) rely on this network of support, and, while at present some interaction between primes and

sub-contractors is not visible to Government, greater transparency of the supplier base would be advantageous.

- Foreign sales (exports) are a key multiplier for many defence Primes, and this contributes to the 'globalisation' of the defence industrial base. The US and Australia must leverage off this reality;
- Internally, the US DoD is frustrated over its lack of knowledge about the US industrial base. Making industry/supply chains part of business is a key challenge;
- The US is aware of Australia's Priority Industry Capability (PIC) program, and is attempting a similar initiative with its current S2T2 (Sector by Sector, Tier by Tier) review of US Defense industry. In particular, it is seeking to develop an increased understanding of lower tier companies and their particular niche capabilities. Mr Lambert highlighted that Australia had gone a step further than the US by making the PIC analysis public;
- Further bilateral collaboration in the area of Defense industry, as agreed at the recent ADAC, will be of benefit to both the US and Australia.

3.78 The delegation noted that one of the challenges for Australia in regard to PICs and Strategic Industry Capabilities (SICs) is to sustain and use them, instead of opting for off-the-shelf or FMS solutions.

3.79 Mr Lambert agreed that this is a difficult challenge that requires a delicate balance, particularly in an environment of constrained Defence spending.

3.80 There is a tendency for Defense in the US to revert to procuring known capabilities, even if these are not needed. The challenge is to preserve key skills in appropriate numbers while ensuring that programs meet capability requirements and are not just subsidising industry.

3.81 He discussed that investing in defence for 'jobs' is terribly inefficient given high wages, low production scales and inconsistent demand compared to other industry sectors.

3.82 However, in cases where there is a likely requirement for the skills in the future, but current activities are not sufficient to sustain these skills, consideration should be given to deploying the skilled individuals to alternate tasks/programs to maintain the key capabilities.

3.83 The delegation was interested in the implications of recent industry consolidation for both Government and prime companies.



- 3.84 The US noted that, although US Defense budgets have contracted, in real terms there is still significant spending and this money flows to primes, and then through to small-to-medium enterprises (SMEs).
- 3.85 Further, most of the big defence prime companies are principally now systems integrators rather than traditional end-to-end suppliers.
- 3.86 It was discussed that further significant consolidation of prime companies is not expected, but the US does expect to see more vertical and international integration.
- 3.87 Additionally, more activity between the US and Asia is expected. US companies are focussing more on overseas markets, with expectations that exports will comprise up to 25 percent of sales for US defense companies in the near to mid term. Much of this is expected to occur as direct commercial sales, with Government to Government activity being perceived by industry as being less successful. Previously, top companies only focussed around 10% of their business on international markets.
- 3.88 The delegation noted that there could be severe implications of where specific industries are rationalised, for example, the US is essentially down to two prime contractors in terms of aircraft.
- 3.89 Mr Lambert responded that it is inevitable that factories will have to close, and there will have to be a change in the definition of 'competition'. In the future competition may be 'non-peer competition', that is Navy capability versus an Army capability, rather than companies competing against each other in a specific program. Ultimately, 'dissimilar competition' might be result in a program being terminated, because it will not deliver value.
- 3.90 He further discussed that, in the future, there will be a focus on preserving capability, not facilities. The C-17 facility at Long Beach is a good example of this issue. Although it is a 'treasure', it has gone from employing 600,000 people and producing two aircraft an hour to ten aircraft per year. Consequently this is resulting in significant losses.
- 3.91 As a result the US is funding a design and research capability for the Next Generation Bomber program that will focus on preserving a production capability.
- 3.92 He concluded that the US is likely to invest in manufacturing, but with a very specific focus on what Defense needs from its industry base.
- 3.93 The delegation questioned whether there is cost point at which the US considers termination should occur. For example, if the cost of the JSF program continues to increase is there a specific cost threshold at which the US will withdraw from the program.

- 3.94 It was discussed that, although the US terminated programs worth around \$300 billion, in total cost of ownership terms, in 2010, historically, this is not an area where US has a good track record. Rather the US tends to be over optimistic about the affordability, and success, of individual programs.
- 3.95 Consequently, establishing appropriate metrics like 'should cost' and 'will cost' and applying them to individual programs will be an important part of future affordability judgements. Where targets are not being met, projects will then be candidates for termination.
- 3.96 In the specific case of JSF, it was acknowledged that there is significant concurrency in the program, and that production commenced precipitately. While the overall numbers for the project still indicate concerns, trend data has suggested an improvement, and there is increasing optimism amongst suppliers that costs are now been contained, and that the program has stabilised.

### **Meeting with Dr J Michael Gilmore – Director of Operational Test & Evaluation**

- 3.97 The Operational Test and Evaluation (OT&E) organisation is responsible for operational testing, so the organisation seeks early engagement with programs. However, in a budget constrained environment, there is pressure for the range and amount of testing to be reduced.
- 3.98 At present, there is a civilian staff of around 85, plus a further 23/24 military officers. There are a further 120 people in the Analysis Institute, to which OT&E has access. The military staff brings operational experience, and the civilian staff comprise a range of backgrounds, with many PhD-qualified and engineering staff.
- 3.99 In the last FY, the cost of the civilian staff, and the IDA was \$190 million, funded from Defense sources.
- 3.100 There is a significant internal training program, and OT&E staff work closely with program personnel in each of the Services to establish appropriate testing programs, specifically to ensure program evaluations have the appropriate data on which to rely.
- 3.101 It is mandated that OT&E is responsive to the Secretary of Defence, and to Congress.
- 3.102 Congress mandates that OT&E undertake testing to examine interoperability and information assurance. Dr Gilmore explained that Congress is frequently disappointed on findings about interoperability.

- 3.103 It was discussed that projects cannot proceed to full rate production without OT&E testing being completed, and the decision to proceed agreed. However many projects object to this mandated role.
- 3.104 Although programs rely on the data that accrues from test regimes, there is a tendency amongst the Services to mistrust testing and criticise it for schedule delays and cost challenges. In reality, it is not the testing that delays programs rather it is addressing problems or issues that are identified by the testing itself. If a problem is identified, it has to be remediated.
- 3.105 With regard to evaluation activities, OT&E does not have a formal role, but can advise on the veracity of technical matters, especially in cases where existing test data is available. However, generally, developmental and operational testing activity during the US evaluation process of tenders is limited.
- 3.106 At present, project offices fund OT&E activity, however, there are arguments (largely from projects) that this should not be the case. OT&E comprises around 1 percent (+/- 0.5 percent) of project costs. In some cases, like JSF, this is a big dollar amount, and in some years, depending on the phasing of projects, there can be a big in-year spend against OT&E elements. With regards to developmental testing, it is hard to break out the specific cost because of the nature of the activity, but it is estimated to be a significant figure.
- 3.107 Program Managers are often unhappy with OT&E costs given that they typically occur toward the end of their project's schedule.
- 3.108 Responsibility for testing is dependent on the contract arrangements for each project. Often it is a combination of government and contractor tests, such as those being conducted for the Joint Strike Fighter program.
- 3.109 However, live fire tests and fully instrumented tests can generally only be done in government operated facilities.

### Comments on the JSF

- 3.110 The delegation asked Dr Gilmore to discuss a recent report on the JSF program, which contained a number of criticisms. In particular, Dr Gilmore was asked to address weight issues, and whether the removal of safety equipment to reduce weight is considered appropriate.
- 3.111 Dr Gilmore characterised the report as not critical but, factual. He noted it describes the current state of the program. He agreed weight margins for the F-35B are tight, compared to historical precedence. Additionally,

OT&E considers there are some associated structural issues, although a significant amount of structural testing remains to be completed. There are some further issues around vertical tails and buffeting, and with the tail hook.

- 3.112 However, with regards to the F-35A variant, OT&E is not aware of any weight-related threats to the program, but noted some durability and buffet testing remains to be completed.
- 3.113 He noted mission system testing is in its very early stages and there remains significant work to do in both development and testing. It is expected that Block 3 testing will be more challenging than the current activity.
- 3.114 There are 77% of planned test points still to be completed and new test points are yet to be included in the overall test plan. This means the overall test program is still growing.
- 3.115 Weapons integration testing to date has indicated there are some optimistic judgements about progress in that area, and there has been no weapons integration flight testing to date.
- 3.116 Overall, OT&E considers that missions systems remain the biggest challenge for the program.
- 3.117 OT&E advised that removal of equipment such as fire extinguishers or stop valves, could be seen as unwise, but further reviews of such proposals are being undertaken.

### **Meeting with Congressman Adam Smith (Democrat, Washington), Ranking Member House Armed Services Committee**

- 3.118 Congressman Smith was asked for his views on the current state of the Defence acquisition industry in the US and noting the stressed budget situation in the US, in particularly the looming sequestration cuts that will fall heavily on defence, he was also asked for his views on how the situation may be resolved.
- 3.119 Congressman Smith noted that the US Defence industry had experienced a particularly negative 10 years, with a number of high profile projects running significantly over budget, over time and in some cases being cancelled altogether. Congressman Smith said that he thought it was important that planners become more realistic about the capabilities they desired in the future.

- 3.120 On the issue of sequestration, Congressman Smith said that, while he could give a long and complicated explanation why it would not actually happen, he did note that it would take some eight months until the issue was resolved. In his opinion this will not occur until at least January or February 2013, and a solution was unlikely to be reached until the last minute. Representative Smith noted that the Defence budget consumes a significant portion of the budget as a whole and is, therefore, appropriate to be 'in the mix' when considering necessary spending cuts. Representative Smith said the Defence budget had already borne significant cuts, and would likely be able to absorb further reductions.
- 3.121 Representative Smith was asked how he viewed Congress's role as both a financial lever and an oversight body on Defence spending. Representative Smith said he thought Congress had an important role to play and that elected members ultimately had to take responsibility for the spending decisions of the Government. In respect of Defence acquisition projects, Representative Smith said Congress had historically assisted by intervening in troubled projects and setting them right. In particular Representative Smith noted that Congress played a key role in keeping the C-17 transport aircraft project alive in the 1990s. This aircraft is now an indispensable element of US airlift capability.

## Meeting with Congressman Joe Courtney (Democrat, Connecticut)

### Comments on the US Defense Budget

- 3.122 Representative Courtney explained that the the Defense Authorisation process for Congress to pass the FY2012 Defense Budget had commenced.
- 3.123 He commented that budget cuts and the prospect of sequestration provide a troubling basis for the budget consideration. However, there is some optimism, particularly amongst the House Armed Services Committee members that sequestration can be avoided. Nevertheless, the prospective end of the first Obama Administration does present some issues in terms of timing.
- 3.124 He noted that Defense has already been hit hard by Budget cuts, although the required reductions are considered achievable with careful management.
- 3.125 Representative Courtney notes that, even with the proposed drawdown, US Defense Force manning levels will remain above those of 2001. However, it will be necessary to monitor the respective Officer corps, where key skills, such as engineering and logistics, are being lost.

- 3.126 He stated that it is clear there are too many Defense Bases in the US, particularly a greater number of airfields than are required but there is stiff resistance to Base closing initiatives.
- 3.127 He discussed that the US, and particularly the House Armed Services Committee, is mindful of the increased emphasis on Australia that results from recent US force posture decisions.

### Comments on the JSF

- 3.128 The delegation explained to Representative Courtney that meetings with the GAO and OT&E had identified a number of issues related to the JSF in which Australia and the US held similar concerns.
- 3.129 Representative Courtney agreed there were concerns with the program, and lamented that F-22 production had ceased early. He noted frustration with Lockheed Martin's performance on the JSF program, especially with regard to cost management.

### Comments on submarines

- 3.130 Representative Courtney indicated he had met previously with Ambassador Beazley to discuss Australia's Future Submarine Program, and asked the delegation for an update on the program.
- 3.131 The delegation discussed that the requirement for new submarines had been established in the 2009 Defence White Paper. Some research into Australia's industrial capacity to undertake the program had been completed, and some serious shortfalls had been identified. There is ongoing consideration of an off-the-shelf solution, including European options that appear to offer the benefit of lower Through Life Costs. It is still not certain whether an Australian Government will commit to a solution that relies on a new submarine design, particularly given current budgetary pressures.
- 3.132 It was discussed that the program for new submarines is extremely complex, and interaction with the US on the program is complicated by the decision to rule out nuclear propulsion. Additionally, cooperation with the US will require the resolution of a significant number of ITAR issues, given the nature of potential technology transfer. Regardless of the challenges of the Future Submarine Program, it is clear that the current COLLINS boats are not performing to requirements.
- 3.133 With regards to the Virginia class submarines which are built in the Congressman's home state by Electric Boat, he discussed that the program

continues to deliver new boats effectively with production running on time, and slightly under cost.

### **Comments on Afghanistan**

- 3.134 Representative Courtney questioned whether Australia's drawdown from Afghanistan would remain as currently forecast, or whether there is a possibility of some acceleration.
- 3.135 The delegation told Rep. Courtney that the Australian Government remained committed to a 2014 withdrawal. It was noted this position enjoyed bipartisan support in Australia.

### **Dinner with HE Kim Beazley**

- 3.136 On the evening of 26 April, His Excellency Kim Beazley, Australia's Ambassador to the United States, hosted the delegation at a dinner at his residence.
- 3.137 The dinner was greatly appreciated by the delegation and the delegation members extend their thanks to HE Beazley and his wife Susie for their hospitality.

### **Meeting with Major-General John F Thompson, USAF, Deputy Program Executive Officer, Joint Strike Fighter Program**

- 3.138 The delegation held a classified meeting with members of the Joint Strike Fighter Program Office. The majority of the meeting time was taken up with a Weapon System Program and Operational Capabilities Brief held at the SECRET level.
- 3.139 The central discussions at classified level were greatly appreciated.

## **Boston**

### **Briefings at Raytheon Company, Integrated Defense Systems**

- 3.140 The delegation was hosted by Mr Sam Rose, Vice President of Integrated Supply Chain.
- 3.141 The delegation received briefings on Raytheon's Integrated Air and Missile Defense.

## Integrated Air and Missile Defense

- 3.142 Integrated Air & Missile Defense is Raytheon Integrated Defense Systems' business area that develops and integrates proven air and missile defense systems. The delegation received a specific briefings on:
- National Advanced Surface to Air Missile System (NASAMS)<sup>2</sup>;
  - Patriot.

### National Advanced Surface to Air Missile System

- 3.143 NASAMS is a collaboration between the Norwegian company Kongsberg Defence and Aerospace and Raytheon.
- 3.144 Raytheon explained to the delegation that NASAMS is used for high-value asset protection, national events and force protection. NASAMS is deployed in the National Capital Region (NCR) of Washington DC.

### Patriot

- 3.145 The Patriot is a long-range, high-altitude, all-weather weapon system. With over 200 fire units fielded worldwide, Raytheon regard the Patriot as combat-proven and the world's most advanced air and missile defence system. It used by 12 nations, including the US and five North Atlantic Treaty Organisation (NATO) nations.
- 3.146 Raytheon Integrated Defense Systems is the prime contractor for Patriot and the systems integrator for the PAC-3 missile.

## Inspection

- 3.147 The delegation toured the Circuit Card Assembly, metal fabrication and Patriot Radar Assembly areas.

## Fort Worth

### Briefings at Lockheed Martin

- 3.148 Discussions at SECRET level were held with Lockheed Martin at Fort Worth.

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2 Sometimes referred to as the Norwegian Advanced Surface to Air Missile System.



- 3.149 The discussions dealt with all aspects of the JSF Program. The breadth and depth of the information given, and the frankness in which the delegations questions were answered was very much appreciated by delegation members.

## Inspection

- 3.150 The delegation toured the JSF flight line and met the JSF Chief Test Pilot, Mr Alan Norman.

## San Diego

### Briefings at General Atomics Aeronautical Systems

- 3.151 General Atomics grew 20 per cent last year and now employs 5,700 people. While most business remains with the US Government, the company is looking to expand and market their products to close allies such as Australia.
- 3.152 The company has been engaged with Australia over many years and has previously conducted maritime surveillance trials with their Mariner Demonstrator UAV off the northwest shelf of Australia in 2006. The Predator family of UAVs, particularly the Predator B (also known as the MQ-9 Reaper), have proven to be reliable, combat proven workhorses and adaptable in conducting both maritime and overland missions.
- 3.153 The next generation of aircraft design, the Predator C Avenger, is still in development and testing. This design will be jet powered, include a maritime variant, and incorporate stealth design features, including internal weapons bays. The design is still 2-3 years away from being an attractive option for countries like Australia, as it is still expensive and requires further development.
- 3.154 The Avenger design offers increased speed, maximum takeoff weight and reductions in radar cross section. Further development continues on the Predator B / MQ-9 Reaper design, including redesign of the landing gear that will increase its maximum takeoff weight from 10,500lbs to 11,700lbs.
- 3.155 The airframe itself is not the real product, rather, it is the situational awareness that it is able to provide to those on the ground. An advanced 'cockpit' control station is also under development and is expected to be

fielded within the next two years. This will be entirely touch-screen, and provide an expanded field of view.

- 3.156 The risk of losing the expertise and knowledge gained from operating leased UAV systems on operations in Afghanistan and the importance of maintaining the niche capability knowledge and experience was highlighted to the delegation.
- 3.157 On the topic of lease or buy comparisons, it was detailed to the delegation that the lease of a system would cost around \$40 million per annum, based on rate of effort of 500 flying hours per month in Afghanistan. In any lease arrangement the labour costs would be the biggest variable, as the aircraft itself only has operating costs of around \$300 per hour. For normal peacetime missions, the operating costs could be anywhere from \$500-1000 per hour depending on the mission profile. In austere and dangerous conditions such as Afghanistan, the labour component is more costly given the need to pay operators more.
- 3.158 The delegation questioned the susceptibility of the data link to jamming. It was discussed that the aircraft are almost always operated by satellite link, with the ground control stations located in the United States. As such the link is a very narrow beam and, therefore, generally safe from jamming. While there is a risk of jamming the satellite directly, it is likely this would be treated as an act of war and the jamming source would be targeted and disabled.
- 3.159 Additionally, the system still operates an analogue data link and the Block 4 stage of development will introduce a digital data link. The company is also researching a secure digital line of sight data link as a redundancy plan.
- 3.160 The delegation sought information on the commonality between the Hellfire missile carried on the armed variants of the Predator aircraft with those missiles in, or coming into, the Australian inventory. The company responded that, whilst it would depend on the type of missiles Australia holds, one of the major benefits of the Predator system over other UAVs such as Heron is that it has the capacity to be armed, should Australia make that decision at a future point in time.

## Inspection

- 3.161 The delegation toured the Predator production facility, with particular emphasis on the end-to-end manufacturing of the aircraft, the Ground Control Stations and their sub-components.

## Palmdale

### Briefings at Northrop Grumman

- 3.162 The delegation was briefed that the Northrop Grumman Corporation has undergone significant restructure in the past few years under the leadership of CEO Mr Wes Bush, resulting in the company merging from eight business sectors into four (Aerospace Systems, Electronic Systems, Information Systems and Technical Services). This restructure has included the divestment of shipbuilding interests to Huntington Ingalls Industries.
- 3.163 The Aerospace Systems sector is a product of the company's heritage dating from Northrop Aircraft's merger with Grumman Aerospace. The company later acquired Teledyne Ryan, which developed surveillance systems and unmanned aircraft. Today, the Palmdale Military Complex is a Government owned facility with Northrop Grumman, Boeing and Lockheed Martin being its three main tenants and is the location in which Northrop assembles the Global Hawk and Broad Area Maritime Surveillance (BAMS) unmanned aircraft, and manufactures the centre fuselage for the F-35 Joint Strike Fighter.
- 3.164 The first MQ-4C Broad Area Maritime Surveillance aircraft manufactured under the System Design and Development phase of the program (aircraft SDD1) will roll out of the factory in mid June and is scheduled to conduct its first test flight in late summer 2012, (third quarter of 2012). The BAMS aircraft is a unique marinised variant specifically designed for maritime surveillance for the US Navy.
- 3.165 The program was fully funded in the FY2013 Budget proposal sent to Congress and remains on track to achieve Initial Operating Capability (IOC) in 2015. The first Low Rate Initial Production lot build is also scheduled for 2015.
- 3.166 The key advantage of the MQ-4C BAMS over its competitors is its range, for example it would be able to get to Heard Island in the Southern Ocean, loiter, and then return to RAAF Edinburgh. The BAMS program has also benefited from the significant research and development for the Global Hawk, and has a proven record when it comes to system reliability and sensor performance.
- 3.167 Northrop Grumman has recently obtained export license approval from the US Government to conclude classified discussions with the Royal Australian Air Force and Defence Science & Technology Organisation on

sensor performance, and the company's eagerness to share information demonstrates their high confidence in the performance of the system.

- 3.168 Northrop Grumman told the delegation that they remain eager to engage with Australia on BAMS and outlined a range of support options they could offer to reduce the requirement for an all uniformed operator model.
- 3.169 The delegation was interested in why the US Air Force had decided to divest their fleet of Block 30 Global Hawks.
- 3.170 The company informed the delegation that the US Air Force currently has 14 Block 30 aircraft, with a further four in production and three more with money appropriated that is 21 aircraft in total. The decision to divest the aircraft was purely a budgetary one in the context of the FY2013 Budget Proposal and the Congress has not yet completed their markups of the Bill, noting the House Armed Services Committee had just recommended to block the decision.

### **Inspection**

- 3.171 The delegation visit then conducted an inspection of the production facility, including a tour of the JSF centre fuselage assembly, and the Global Hawk and BAMS assembly lines.

## **Los Angeles**

### **Reception hosted by Mr Chris De Cure, Consul General – Los Angeles**

- 3.172 On its final night the delegation attended a reception hosted by Mr Chris De Cure, Australia's Consul General to the United States, at his residence in Los Angeles.
- 3.173 Mr De Cure had invited an array of business and artistic people from the Los Angeles area with an interest in Australia and it was an enjoyable end to the delegation.

### **Senator Mark Bishop**

Delegation Leader