
The Parliament of the Commonwealth of Australia

Report on the Australian Parliamentary Delegation to the UK, Spain, Germany and the United States

14 April – 3 May 2012

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Foreword

From 14 April 2012 to 3 May 2012 I had the pleasure of being the leader of a delegation consisting of Parliamentarians from the Defence Sub-Committee of the Joint Standing Committee on Foreign Affairs Defence and Trade as part of its *Review of the Defence Annual Report 2010-2011* and the Foreign Affairs, Defence and Trade References Committee of the Senate Standing Committee on Foreign Affairs, Defence and Trade as part of its inquiry into *Procurement procedures for Defence capital projects* referred by the Senate on 9 February 2011.

The key aim of the delegation was to visit countries that design, build and maintain/sustain submarine fleets, deal with large scale Defence procurement issues, and to visit the project office of the Joint Strike Fighter (JSF) and Lockheed Martin.

The delegation found that first-hand inspections and briefings by suppliers and US government officials greatly assisted to better understand the dynamics of supply chains and their implications for Australia's ongoing Defence capability. Additionally, in the context of the current debate on future capability, members of the delegation benefited greatly from gaining an appreciation of the US procurement experience as it continues its own Defence program in the face of increasing budgetary restrictions and continuing volatility in international security.

This report summarises the activities and observations of the delegation. It is useful in this foreword to outline some of the key points that the delegation found. These can be summarised as:

- the need for early engagement of industry at the conceptual and strategic capability planning level;
- the need for centres of excellence in all areas requiring the efficient concentration of scarce levels of high technical skill including systems engineers and systems integrators;
- the importance of early and ongoing test and evaluation before second pass approval;
- the danger for Military-off-the-Shelf (MOTS) and Commercial-off-the-Shelf (COTS) solutions becoming riskier developmental projects;
- the observation that evolving US views and a new commercial approach to foreign military sales appears to be in progress;
- US GAO rules, such as 90% engineering drawing completion, re unproven technology, is maybe a useful discipline although a better approach maybe to require 90% proven technology or even higher by value.
- the importance of intellectual property issues; and,
- in relation to submarines;
 - the clear linkage between design, construction and maintenance and sustainment in the context of building an industry over 50 years.
 - The risks of severely compromising future submarine choices available in Europe by the early selection of weapons and communications systems whereby superior technology may be forgone, not to mention the extreme developmental risks occurring as a consequence. the challenges of obtaining the most recent US intellectual property for use in essentially European platforms

Over the course of the delegation it became apparent that projects of the complexity of those undertaken in the Defence sphere cannot hope to be successful without early engagement of industry players with Defence during the stages of a project when the needs of capability are being defined. This would mean that there is an early exposure of Defences capability concepts to industry which would allow industry to engage with Defence planners and provide novel and addition capability ideas to them. This early engagement of industry would result in a two-fold benefit. Industry would gain by being able to better plan its ongoing investment and resource placement whilst Defence, and the Australian Government, would gain by progressively becoming a 'smarter customer.' One of

the main points the delegation took away from nearly all of its meetings was the need for all countries to become smarter customers when dealing with industry. This requires Defence to have the personnel in place to provide the knowledge needed to be a 'smart customer'. The point here being that research and development is done to a significant extent in industry. Government, however, needs to retain its expertise, so that it can continue to be a smart customer or become a smart customer. This is the case particularly in Australia where primes have such depth of reach back to parent companies.

Given the scarcity of highly skilled technical staff, especially systems engineers, and the enormous length of time needed to train them, it is important that centres of excellence be established so that a consolidated core of such personnel should be available to Defence. Without the properly trained, experienced personnel in place Defence will never become the 'smart customer' that the Australian Government requires it to be. This means Defence and DMO need to take complementary action to become smarter customers. It is imperative that such skills not be duplicated and that the best scientific and engineering minds are available on a long term basis.

The delegation heard of the importance of 'smart customers' engaging in early and ongoing test and evaluation before second pass approval. Whilst a testing regime such as this can be expensive the possible savings in addressing design flaws early on compared to trying to modify projects once a capability becomes operationally necessary cannot be underestimated.

The delegation also heard that, whilst a MOTS or COTS solution may reduce procurement risk, they can introduce capability risk. If a proper design and capability evaluation is not rigorously carried out in the earliest stages of a procurement process. Risk may in fact increase where a MOTS or COTS solution morphs into a new developmental procurement project with associated cost and schedule overruns. This is something that a 'smart customer' would not let occur.

It became clear to the delegation that the US, is moving towards a new commercial approach to foreign military sales. Much of the present control system is based on the Arms Export Control Act (AECA), which dates from the 1970s when 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. This results in over-control of individual components. For example, 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. The delegation and, Australian Defence and Industry, looks forward to these US reforms taking shape.

The GAO made the strong point to the delegation that, in the ship building domain, commercial enterprises do not accept contracts utilising equipment that is not technologically mature. This was contrasted with the US Department of Defense who frequently pursue acquisitions involving capabilities that are unproven. This is often a contributor to schedule and cost blowouts. To this 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. Defence 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.

The delegation also heard about the importance of Intellectual Property (IP) in the Defence procurement process. More than ever weapons systems are the product of the software that it takes to run them and if a country is not at least aware of the IP issues associated with the software used in a particular capability it runs the risk of being caught in a spiralling cost scenario from which it would be hard to extricate itself.

The similarities between the problems encountered by the Spanish in their NH90 program and Australia in the MRH90 program are noted, namely:

- windscreen damage
- floor strength
- egress problems caused by location of door gun

The delegation looked at submarine capabilities in the United Kingdom, Spain and Germany and, whilst each country had its own way of approaching the issue of a submarine capability, it was apparent to the delegation that there is a clear linkage between design and construction, and maintenance and sustainment in the context of building an industry over 50 years. If a country such as Australia decides that it wishes to have a submarine capability it will be a big investment in money and


time. From the outset those charged with the design and construction of a submarine must have at the forefront of their minds the maintenance and sustainment of that submarine. These issues cannot be separated. The cost of doing so, as Australia has seen with the Collins Class submarines, is unacceptable.

Any person familiar with Australia's Collins Class Submarines is also familiar with the conflict and compromise involved in their purchase. Despite the public focus on the various physical issues with the boats, the major problem with the submarines was with some critical design elements of the submarine, an overly ambitious combat system, and integration issues. In addition, questions about security problems and intellectual property concerns raised by the US in relation to having a European combat system linked to American weapons, became an obstacle and led to eventual cancellation of a tender process regarding the combat system and resulted in the decision to enter a joint development program with the United States, with a formal agreement signed on 10 September 2001 at the Pentagon. It became clear to the delegation that, a detailed, early and open discussion of IP issues, particularly in relation to combat systems, is important if Australia is to learn the lessons of Collins.

To the end of building an Australian submarine industry whilst having a submarine capability I note the German company HDW's advice to the delegation that, if looking for a Type 214/216 class of submarine, it would be wise to build the first submarine of type in Kiel. Australia could send representatives to Kiel for indoctrination into the boat technical details and the support philosophy during an initial build process. This type of phased in construction is one way to Australia being able to build on its capacity to be more fully involved in the design, build and maintenance of its submarine capability.

Senator Mark Bishop

Delegation Leader



Membership of the delegation

Leader	Senator Mark Bishop
Deputy Leader	Senator the Hon David Johnston
Members	Senator David Fawcett Senator Mark Furner Dr Dennis Jensen MP Senator the Hon Ursula Stephens
Delegation Secretary	Mr Robert Little



List of abbreviations

ADAC	AUSMIN Defence Acquisition Committee
ADF	Australian Defence Force
AIP	Air Independent Propulsion
AOR	Replenishment Oiler <i>or</i> Auxiliary, Oiler, Replenishment
AT&L	Acquisition Technology and Logistics
AUSMIN	Australia-United States Ministerial
AWD	Air Warfare Destroyers
DCNS	DCNS S.A. (formerly the Direction Technique des Constructions Navales and the Direction des Constructions Navales) is a naval defence company based in France and is one of Europe's leading shipbuilders.
DMO	Defence Materiel Organisation
DoD	Department of Defense (US)
EMD	Engineering Manufacturing and Development
FMS	Foreign Military Sales
GAO	US Government Accounting Office
HDW	Howaldtswerke-Deutsche Werft

IOC	Initial Operating Capability
IP	Intellectual Property
ITARS	International Traffic in Arms Regulations
JLTV	Joint Light Tactical Vehicle
JSF	Joint Strike Fighter
LCH	Landing Craft, Heavy
LHD	Landing Helicopter Deck
LRIP	Low Rate Initial Production
MoD	Ministry of Defence (UK)
MOU	Memorandum of Understanding
MOTS	Military-Off-The-Shelf
MRAP	Mine Resistant Ambush Protected
NASAMS	National Advanced Surface to Air Missile System
OPV	Offshore Patrol Vessel
OT&E	Operational Test and Evaluation
RAAF	Royal Australian Air Force
RFI	Request for Information
TD	Technical Data
TKMS	ThyssenKrupp Marine Systems
TLS	Through Life Support
TRL	Technology Readiness Level
US	United States

