Mr E.J. Bushell

16th September 2015

The FADT References Committee Inquiry on the
Capability of Defence's Physical Science and Engineering (PSE) Workforce,

Dear Committee Members,

Please find attached my submission to your inquiry into Defence's PSE Workforce.

I wish the Committee success in its endeavours.

Kind Regards,

Air Cdre RAAF (R'td)

SUBMISSION TO

FADT REFERENCES COMMITTEE INQUIRY

ON

THE CAPABILITY OF DEFENCE'S PYSICAL SCIENCE AND ENGINEERING (PSE) WORKFORCE

(E.J. BUSHELL)
Air Commodore RAAF (R'td)

16th September 2015

SUBMISSION

BACKGROUND

I welcome your inquiry into Defence's workforce, now and into the future, as such a need has been an urgent one for over 15 years, stemming from the direct effects of the downsizing and de-skilling the Services, which resulted in the loss of their Engineer Branches and their project management organisations. The Commercial Support Program that followed then destroyed their in-depth competencies in engineering and maintenance planning and management. Since then, Defence and the DMO have floundered. They adopted a contract, "business' focus to capability acquisition and sustainment, administered by people lacking in sound knowledge of the military capabilities being acquired, their unique operational and engineering challenges and the project methodologies critical to their management. The result has been a series of extremely costly project failures in required capabilities, schedule, cost and adverse impacts upon Australia's military capabilities.

What is needed are hard-core operational, engineering and project management competencies appropriate to the system being acquired, and the technologies comprising it. What is not needed are pseudo competencies, such as those that have evolved within the DMO, and are now being marketed both within and outside the Public Domain under the "International Centre for Complex Project Management (ICCPM), and its "Competency Standards for Complex Project Managers". This initiative was born, nurtured and adopted within the DMO, which organisation has clearly failed, so it should be approached with caution.

The evidence for this observation is embedded and readily available in:

- The ANAO Audits of DMO Major Project Reports (MPRs) since 2007-08.
- The ANAO Performance Audits of specific projects.
- The many reviews undertaken into Defence/DMO problems.
- The Final Report of the FADT References Committee inquiry into Procurement Procedures for Defence Capital Projects, August 2012.
- This author's detailed analyses of DMO MPRs since 2007-08, which are on the Joint Committee Public Accounts and Audit (JCPAA) record.

These should be required reading by the Committee. Analysis of these documents indicates that the root cause(s) behind Defence/DMO's failures have been suppressed.

ANAO Audit Reports, DMO Major Projects Reports, and independent Submissions made over the past eight or so years have identified why Defence/DMO have failed in their strategic and capability analysis, as well as their capability acquisition and sustainment functions, but to no meaningful effect. However, analysis of these reports and submissions indicates that Australia now has a Defence organisation that:

- Proceeds to contract with inadequate statements of operational and engineering concepts and requirements, leading to the procurement of a wrong, inadequate or overpriced capability.
- Proceeds when the design is immature or not understood.
- Is unable to manage system or software development or integration, or test and acceptance.

- Is unable to identify and manage project risk (essentially operational and engineering factors) and has to resort to buying its way out of the resulting problems.
- Does not have the operational, engineering or Project Management skills and competencies essential to the projects being undertaken.
- Focuses upon buying materiel rather than managing projects.
- Has now had to outsource its contract management and contract negotiation functions.

In fact, all the evidence points to Defence/DMO Major Projects suffering persistently self-induced injury through:

- Adopting public sector commodity product and service principles that have proven to be wholly inappropriate for the acquisition and sustainment of highly technology-dependent military capabilities.
- Failing to adopt the required long-proven and successful, conventional Project and Engineering Management methodologies.
- Replacing skilled and competent project and engineering managers with people lacking those skills and competencies, but well-equipped for public relations.

` The result has been (broadly):

- Projects have been put forward for approval and acquisition that have not been fully and accurately scoped and specified in project, operational or engineering terms.
- Source selection has been poorly managed, resulting in incorrect or poor acquisition decisions having inherent risks.
- Contract negotiation is now beyond DMO's capabilities as (lacking even basic project, operational and engineering competencies) the Department of Defence is no longer seen as an informed and smart customer.
- Project capability, schedule and cost risks inevitably arise that are beyond the DMO's competencies to manage. The problems arising from undetected risk are thus 'managed' through the Contingency Budget.
- Capability schedule delays and sustainment difficulties have left protracted and gaping holes in Australia's military defences.

Both Defence and the DMO have studiously avoided identifying these factors for what they are, preferring to interpret them as problems to be redressed through 'business' administrative process or contract changes. The First Principles Report identifies 14 current shortcomings, but it also fails to recognise any of these factors or their remedies, preferring to expand the role and authority of the Senior Executive and retain the existing administrative and contract processes rather than more appropriate and proven management systems.

These problems have remained unresolved to this day, and will remain so until the hard-core operational, engineering and project management skills and competencies needed for the task are in place.

The Defence Materiel Organisation attempted to offset the lack of the specialist skills, competencies and appropriate management methodologies identified above by developing a very expensive training organisation that has evolved into the College of Complex Project Managers, and the Defence Materiel Organisation with a Competency Standard for Complex Project Managers

(Ver. 2.0, September 2006). However, although this organisation has produced a number of "qualified" graduates for the DMO, no material improvement in the performance of that organisation has been noted in the ANAO Audits or other inquiries or reports referred to above.

It is probable that Defence and its newly acquired materiel acquisition and sustainment element may propose that the College of Complex Project Management and its Competency Standard should become the standard for future skills and competencies requirements within Defence, but the College was developed in a failed organisation (the DMO), that can show no proof that it has led to any improvement in DMO project management capabilities. Such proposals should therefore be viewed with great suspicion.

An analysis of the College and its Standard is attached as Annex A.

(E.J. Bushell)
Air Commodore RAAF (R'td)

ANNEX A

ANALYSIS OF

COLLEGE OF COMPLEX PROJECT MANAGEMENT AND COMPETENCY STANDARD

A. BACKGROUND

The College of Complex Project Management and its Standard were been born out of Defence's continued inability to manage military capability projects on the grounds of their 'complexity', and driven by a belief that traditional project management was inadequate and that a raft of new activities and competencies were needed. The Department believes the solution to the problem lies in the creation of a specialist profession titled 'Complex Project Management', but expanded to cover not only perceived 'complexity', but 'chaos' as well.

The development of this Standard was noted in January 2008, when the then CEO of DMO was warned of its deficiencies, which were assessed as being "*the biggest risk to Defence procurement*". Defence persisted with its development and application, which has contributed markedly to the demise of the DMO.

Traditional project management (1), which evolved following WW11, underpinned most if not all the major accomplishments in military (and civil) capability design, development, test and acceptance, and sustainment; systems such as supersonic and stealth aircraft, space vehicles, nuclear submarines and aircraft carriers, space exploration and communications, and so on – with 'complex' hardly mentioned, 'major' and 'minor' projects being the commonly-used descriptors.

Since the Tange reorganisation of Australia's defence departments, and the subsequent technological de-skilling of the Services, both Defence and DMO have pleaded 'complexity' as the fundamental reason for continual project failures, but its projects have not, in traditional project management terms, been complex. Such projects had been managed successfully and without fuss by the Services since their formation, using procedures and skills that evolved with technology, and managed under standard project management methodologies. Defence/DMO problems were well identified in 2012, but no action was taken (2).

Defence sees projects as being 'complex' because they are being administered under Defence's 'Business Model' with its primary focus upon the contracting function. Any project management activities thought necessary have merely become add-ons, simply sub-functions of contract administration that are viewed only through the contracting lens, not as primary project management factors. Defence's problems stem from a belief that all military capability projects need only be administered through a common template by people lacking the necessary operational, engineering and project management skills and competencies. Unfortunately, such skills and competencies no longer exist within the Services, or in Defence Industry, and those that were moved into Defence were purged during the period 1999-2000. This created the vacuum that the concept of Complex Project Management plans to fill.

The inevitable results of all this have been exposed in the long series of audits of Major Project Reports and specific project performance audits over the years. No matter what Defence has done, or promised to do, no material improvement in project management has been evidenced. Certainly, the money spent on a maze of training initiatives, including Defence's Complex Project Management endeavour, has not shown any material improvement in performance.

The choice that faces Defence, and in turn this inquiry, is:

- To re-skill the Services and have them adopt proven project management methodologies, or
- Adopt the even more complex and chaotic methodologies inherent in the Complex Project Management approach and perpetuate project failures.

The College of Complex Project Managers and the Defence Materiel Organisation Competency Standard for Complex Project Managers (Ver. 2.0 September 2006) should be subject to performance audit to establish whether it is able to fulfil its promises, or will merely add to existing complexity.

B. *COMPLEX PROJECT MANAGEMENT AND STANDARD*

The Complex Project Management Standard "*Has as its gatekeeper achievement of traditional project management competencies"*. (Sect 1-Introduction). However, traditional project management is a tightly-integrated structure that places each element to be managed in its proper role and perspective, and co-ordinates and controls all project activities. This core function is nowhere to be seen in the Standard, and key elements of project management are not even recognised in the structure of the Standard, or its Definitions.

The Standard also introduces elements of chaos theory, whereas no sane project manager would even contemplate undertaking a project that contained such levels of chaos. 'Chaos' in this Standard seems more directed towards rubbing the wound of 'complexity' to scare the uninitiated into unwarranted action.

Furthermore, to redress the deficiencies perceived with traditional project management, the Standard requires nine new competency areas, each with specified competencies. These are summarised below:

Element	Activities	Underpinning Knowledge (Competencies)
1. Strategy and Project Management	52	56
2. Business Planning, Life Cycle Management, Reporting and Performance Measurement	46	47
3. Change and Journey	60	36
4. Innovation, Creativity and Working Smarter	39	23
5. Organisational Architecture	38	53
6. Systems Thinking and Integration	39	36
7. Leadership	42	34
8. Culture and Being Human	42	34
9. Probity and Governance	29	32
Total:	387	351
Special Attributes (Of the College)	63	N/A

That is, the Standard adds another 387 activities and 351 competencies in a strange mixture of activities which will only give rise to a further web of processes and so add to the existing 'complexity' and 'chaos' in Defence procurement.

The Standard shows a gross lack of clear thinking and lacks understanding of project management, traditional or otherwise (3), and should be subject to parliamentary review because of the high costs involved for no obvious return. A performance audit by the Australian National Audit Office would be appropriate.

References:

- Blanchard, Benjamin S, "*Logistics Engineering Management*" 4th Ed, 1992, and "*System Engineering Management"*, 1991. Key elements of project management , such as Configuration Management (the baseline against which all subsequent system and logistics management activities take place), Change Management and Life Cycle Costing, in project management (not contract administration) terms, Maintenance Analysis, Reliability/Maintainability/Availability (including Criticality) Analysis, and so on are not recognised appropriately in the Competency Standards for Complex Project Management, just as they were missing from DMO's processes.
- Refer the Senate Foreign Affairs, Defence and Trade References Committee Inquiry Into Procurement Procedures for Defence Capital Projects – Final Report August 2012. This report provides the most informed and accurate assessment of Defence/DMO problems to date.
- Good examples include the definition of Systemic Inquiry (iccpm.com/content/systemic-inquiry) and Strategy Visualisation (iccpm.com/content/strategy-visualisation). Both leave the reader baffled, not informed.