Chapter 5

Committee view and recommendations

Introduction

5.1 In recent years, the Department of Defence (Defence) has experienced a period of considerable uncertainty with a number of ministers with short tenures. This uncertainty has been exacerbated by government decisions to reduce the number of Defence civilian personnel, restrictions on recruitment, significant departmental restructures and uncertainty regarding major acquisition decisions. In particular, the relatively rapid tempo of Defence white papers processes (2009, 2013 and now 2016) has produced a series of overlapping policy directions. During this time Defence has also been conducting overseas operations including in Afghanistan and Iraq, as well as supporting domestic and international disaster relief operations (most recently to assist recovery following Cyclone Winston in Fiji).

5.2 In this frenetic environment, it is understandable that a clear focus could be lost in relation to longer term issues such as maintaining the physical science and engineering (PSE) capabilities of the Defence workforce. However, a series of reviews and reports over the last decade have delivered similar messages to Defence regarding the risks of a decline in its PSE workforce capabilities. This is a significant issue for Defence which has been developing for some time.

5.3 As highlighted in the committee's 2012 report into defence procurement practices, current situation cannot solely be attributed to on-going organisational reform or operational commitments. It is also a consequence of procurement policies which—since the mid 1990s—have increasingly outsourced services such as engineering support and increased the percentage of 'off-the-shelf' acquisition options exercised on a project by project basis.

5.4 Despite the number of reviews which have highlighted problems with the Defence management of PSE workforce, there have been no structural changes to procurement processes which take into account the contribution to defence capability made by suitable levels of competence and capacity in PSE staff across defence and industry from a whole-of-program perspective. There is a risk this cycle of down-skilling has become self-perpetuating with less staff within Defence having a suitable combination of qualifications and experience to act as the 'smart buyer' to identify and manage risk, leading to further 'off-the-shelf' acquisitions and an increasing reliance on our allies.

5.5 The First Principles Review (FPR) report noted that Defence has been subject to a large number of recent reviews of its operations. It stated that the 'sheer frequency of reviews over the past decade has meant that many were short-lived or simply

overtaken by the next review'. A consequence of this was that recommended changes 'were not allowed to bed in before another review began'.[1] Conscious of this state of affairs, the committee has targeted its recommendations in the context of Defence's existing obligations to 'bed in' the recommendations of the FPR report and the policy directions set by the Defence White Paper 2016.

5.6 The committee has been pleased to see that some of the concerns raised during the inquiry have been addressed in the Defence White Paper. However, it has been difficult for the committee to reconcile Defence's assurances that its PSE workforce 'is capable, meets the Government's requirements and is well placed to meet future challenges' with the other evidence received during the inquiry. This evidence included:

- the findings of previous reviews highlighting on-going issues, particularly with regard to the capabilities of the Defence engineering workforce;
- the declining capability to the Defence PSE workforce due to staffing reductions, recruitment restrictions and lack of workforce planning;
- reports of difficulties recruiting some specialist technical positions;
- redundancies offered and taken up by specialist PSE personnel in areas of major future acquisitions;
- descriptions of low morale in areas of the Defence PSE workforce; and
- an increasing reliance on contractors to undertake PSE responsibilities.

5.7 The committee has made recommendations in a number of key areas in relation to Defence's PSE workforce. These include:

- a commitment to maintain PSE capabilities in workforce planning;
- a strategic approach to PSE workforce professional development;
- examining a more flexible PSE workforce model;
- a commitment to keeping Defence science separate; and
- a review to facilitate collaboration in the PSE sector.

A commitment to maintain Defence's PSE workforce capabilities

5.8 The committee welcomes the Defence White Paper's focus on innovation and development of new technological capabilities for Defence. However, the committee notes that further burdens appear to have been placed on the Defence PSE workforce. The Defence White Paper provides for a Defence workforce of 18,200 (FTE) down from 22,300 in 2012. It also provides for 800 new APS positions in 'intelligence, space and cyber security capabilities' and 400 new positions in 'information technology support, simulation, support to Navy engineering and logistics, security,

1 FPR, p. 13.

force design and analysis, and strategic and international policy, including civilian policy officers posted overseas'. It notes that:

> These new APS positions in areas of high priority will be offset by ongoing reductions elsewhere in the APS workforce, including through the reform of service delivery areas of Defence's business, as part of the implementation of the Government's First Principles Review.[2]

5.9 Defence appears to have been given objectives which include reducing its workforce head count while increasing its engineering and scientific capabilities. This approach does not necessarily accord with the recommendation of the FPR that 'the focus on public service reductions as the primary efficiency mechanism for Defence cease'.[3] The committee does not agree that a strict staffing cap approach is the appropriate framework for decision-making regarding Defence's PSE workforce capabilities. The Defence White Paper's focus on innovation and new capabilities strengthens the case for the maintenance and development of an effective in-house Defence PSE workforce.

5.10 However, the committee received evidence that some Defence PSE workforce capabilities had been significantly reduced through lack of recruitment, a lack of investment in skills development and a lack of succession planning for those leaving Defence. A key concern is that Defence, in responding to a series of repeated efficiency measures from government, has permitted its in-house PSE capabilities to decline to critical levels.

5.11 In its review of the *Defence Annual Report 2013-14* the Defence Sub-Committee of the Joint Standing Committee on Foreign Affairs, Defence and Trade questioned whether Defence's job family approach was 'adequate for delivering people with the right skills to successfully undertake certain jobs and noted that there was a shortfall in people with task-specific competence'. It recommended that the 'Jobs Families Project be further developed to incorporate accurate assessments of both qualifications and experience that are required for a given role' and that 'Defence, in its implementation of the FPR 'develop its strategic planning and appointment process to ensure employees have task-specific competence for their role, and that opportunities are actively created for personnel to obtain this relevant experience'.[4]

5.12 The committee also questions whether the current 'job families' approach to workforce planning for the Defence PSE workforce. This issue seems particularly relevant to getting the right people into positions which require specialist skills, qualifications and professional experience in the areas of science, technology and engineering. While the FPR recommended Defence build a strategic workforce plan based on 'job families' there appears to be an ongoing risk that personnel with similar

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2 Defence White Paper 2016, p. 150.

3 FPR, p. 67.

4 Defence Sub-Committee of the Joint Standing Committee on Foreign Affairs, Defence and Trade, *Review of the Defence Annual Report 2013-14*, 2015, pp 16, 25.

backgrounds will be inaccurately categorised into broad groups. There also appears to be an insufficient emphasis in the 'job families' approach on assessing the previous professional experience required for a person to fill certain specialised and technical positions within Defence. The committee endorses the Defence Sub-Committee's finding and recommendation on this issue.

5.13 The committee is concerned at the extensive focus on 'job families' as opposed to competence (task specific qualifications and experience). A 'job-families' framework may be suitable for many management and administrative roles within a large organisation but it appears inadequate for many engineering or technical appointments that require knowledge and experience specific to the task. The relatively functional nature of Defence aerospace engineering is in some measure linked to the fact that the Director General of Technical Airworthiness (DGTA) has retained the right to grant, grant-with-conditions or refuse delegated engineering authority to officers regardless of their notional suitability for the role as determined by their job family. In the view of the committee this regulatory approach should be adopted more broadly within the Defence procurement and sustainment workforce with a nominated regulator to assess the competencies required in the role and the suitability of any given candidate to fill it.

5.14 The Defence White Paper 2016 has outlined an ambitious program of investment and major procurement. In this context, the committee is concerned that the mistakes of the past may be repeated. Having an experienced PSE workforce within Defence will be critical to ensuring that major strategic purchases are a success. Further, the gradual erosion of the technical and quality assurance PSE staff within Defence appears to be a skills gap which needs to be addressed.

5.15 In the view of the committee, following the completion of the workforce planning strategies arising from the FPR, Defence should identify critical areas in these two key parts of the Defence PSE workforce. Firstly, Defence needs to be effective at specifying its requirements and be capable of being a 'smart buyer'. Secondly, it must be a technically proficient owner and sustainer of its materiel. Defence should clearly articulate that it will recruit, retain and develop staff in these two areas of critical Defence PSE capability regardless of any broad FTE staffing target. In areas of Defence where critical specialist PSE skills are required, managers should be able to focus on recruiting and keeping the 'right staff' rather than just the 'right number' of staff.

Recommendation 1

5.16 The committee recommends that the Department of Defence commit to maintaining its physical science and engineering workforce capabilities in key areas to allow it to be both a 'smart buyer' and a technically proficient owner of materiel.

Recommendation 2

5.17 The committee recommends that the Department of Defence create a role, with appropriate subject matter expertise, analogous to the Director General of Technical Airworthiness, as a regulator to assess the competencies required for specific procurement and sustainment positions and the suitability of candidates to meet those competencies.

A strategic approach to PSE workforce professional development

5.18 Defence must ensure that it has sufficient flexibility in its workforce planning approaches so that its personnel not only possess the required qualifications, but also have the appropriate professional experience to undertake the tasks they are required to perform. Defence should be proactively seeking to create opportunities for its PSE workforce for competency development through its procurement and sustainment programs and other relationships. The current Integrated Investment Program does not appear to clearly link PSE workforce capabilities with major Defence acquisitions and sustainment decisions.

5.19 The new Defence Industry Policy Statement includes the creation of a Sovereign Industrial Capability Assessment Framework to improve the identification and management of the sovereign industrial capabilities that develop and support ADF capabilities. This framework will be collaboratively developed by Defence and the Centre for Defence Industry Capability (CDIC) and inform the Defence Industry Capability Plan which will identify the sovereign industrial capabilities that are required to be maintained and supported in Australia.[5]

5.20 The committee considers there are opportunities in this process for Defence to strategically develop the skills, expertise and experience of its PSE personnel within its relationships with the broader defence industry. The Sovereign Industrial Capability Assessment Framework that forensically examines the sovereign need for industry qualifications and skills should also be applied to Defence PSE workforce.

5.21 This process should directly impact on procurement decisions so as to use acquisition and support contracts to maintain the required level of competence in Australia's workforce spanning both industry and defence. As an extension to this, the Defence Industry Capability Plan and Defence Workforce Plan should be coordinated to facilitate PSE workforce movement between Defence and industry to foster expertise and 'hands-on' practical experience. This could be via a posting cycle or involve discharge and re-engagement with Defence after a period within industry. Either option would see Defence enhance its ability to meet the FPR directive to develop a workforce with the expertise to be a smart-buyer, making well-informed procurement and sustainment decisions.

5 Defence Industry Policy Statement 2016, p. 23.

5.22 The Defence Industry Capability Plan should facilitate PSE workforce movement between Defence and industry to foster expertise and 'hands-on' practical experience. For example, this approach should provide opportunities for Defence PSE personnel to gain experience with prime contractors to enable them to return to Defence with the expertise to make well-informed procurement and sustainment decisions.

Recommendation 3

5.23 The committee recommends that the Department of Defence take a strategic approach to the professional development of its physical science and engineering workforce as part of the Defence Industry Capability Plan.

A more flexible PSE workforce model

5.24 One recent area of reform for Defence has been on delivering a flexible 'total workforce model' with an increased range of full-time and part-time service categories and options for permanent and reserve ADF personnel. Project Suakin has been aimed at enhancing the opportunities for ADF members to serve as their circumstances change across their working life.[6]

5.25 The committee considers there may be opportunities for similar reforms in relation to the Defence PSE workforce. The need for more flexible arrangements to allow personnel with relevant scientific and engineering expertise to move out of Defence, gain experience in the private sector, and then return was highlighted during the inquiry. The importance of fostering junior Defence PSE personnel to develop their qualifications and training was also stressed. Many also highlighted the absence of clear career paths for some categories of PSE Defence personnel and a lack of succession planning as an ageing workforce nears retirement.

5.26 These interlinked and overlapping workforce issues suggest a complement to Project Suakin should be considered. The committee recommends that Defence consider reforms to provide enhanced workforce arrangements to the existing PSE workforce. The focus should be on establishing an employment framework that encourages mobility amongst academia and the broader research community as well as the defence industry. Creating a framework of incentives for skilled personnel to join and stay with the department should also be a priority.

Recommendation 4

5.27 The committee recommends that the Department of Defence undertake an assessment of workforce models to encourage more flexible and attractive arrangements for its critical physical science and engineering workforce.

6 Project Suakin, available at: http://www.defence.gov.au/suakin/ (accessed 26 February 2016).

Keeping Defence science and technology separate

5.28 While the Australian Government did not agree with the recommendation of the FPR that the then DSTO become part of the new CASG, it did not completely close off this proposal. The Defence White Paper also indicated that the Australian Government 'will further consider this recommendation'.[7] Rather than leave this issue unresolved, the Australian Government should clarify that it does not intend to proceed with this recommendation in the future.

5.29 There are both practical and symbolic benefits to maintaining a clearly separate identity for the science and technology group within Defence. Evidence during the inquiry highlighted the potential problems if DSTG was overly focused on its role in providing technical risk assessments and operational support to the detriment of its other responsibilities and functions.[8] For example, Dr Davies from ASPI identified a risk that 'tasking Defence science with becoming a technical advisor will detract from its core defence research effort'.[9] This risk would be further exacerbated if DSTG were integrated within CASG.

5.30 In the view of the committee, DSTG should not be the prime agency responsible for technical risk assessments (given the engineering and certification nature of much of such work) but rather be tasked to providing advice on specific technologies which may the subject of a technical risk assessment being undertaken by Defence. The Defence Test and Evaluation Organisation would be a more appropriate agency to conduct risk assessments, coordinating input from suitably qualified and experienced engineers, operational staff and scientists as required.

5.31 DSTG's PSE workforce has an established position within the Australian research community, together with an international profile. This recognised position has been highlighted in the research leadership role for DSTG outlined in the Defence White Paper including through the Next Generation Technologies Fund. This will invest $730 million to 2025-26 'to better position Defence to respond to strategic challenges and develop the next generation of game-changing capabilities'.[10] In this context, maintaining a separate identity and a clear delineation of responsibilities for DSTG is preferable.

Recommendation 5

5.32 The committee recommends that the Australian Government clarify that the Defence Science and Technology Group will not be integrated into the Capability, Sustainable and Acquisition Group.

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7 Defence White Paper 2016, p. 166.

8 For example, Mr Callinan and Mr Gray, *Submission 16*, pp 12-13.

9 *Submission 19*, p. 2.

10 Defence White Paper 2016, p. 112; Defence Industry Policy Statement, p. 32.

Recommendation 6

5.33 The committee recommends that the Department of Defence ensure that the roles and responsibilities of the Defence Science and Technology Group are directed to its areas of competence, rather than to technical risk assessments.

Facilitating collaboration

5.34 Some contributors to the inquiry recommended Australia examine the advantages of a counterpart to the US Defence Advanced Research Projects Agency (DARPA). The Defence White Paper's establishment of a virtual Defence Innovation Hub and the Next Generation Technologies Fund to be led by DSTG appears to be a move in this direction. However, the committee notes that DARPA has a number of specific characteristics which allow it to be both flexible in its approach to innovation and disciplined in its focus on pragmatically useful research.

5.35 The evidence received during the inquiry repeatedly highlighted the opportunities for better collaboration between DSTG, publicly funded research organisations, academia and industry. The committee is pleased these particular issues have been picked up in the Defence White Paper, including through the 'new virtual Defence Innovation Hub, with funding of around $640 million across the decade to 2025–26':

> The Hub will enhance the ability of Defence, the Commonwealth Scientific and Industrial Research Organisation, academia and key industry partners to work collaboratively to accelerate the transfer of innovative technologies into Defence capability. The Hub will be managed by Defence to focus innovation activities on priority capability development requirements, some of which require high levels of security classification.[11]

5.36 There was evidence during the inquiry that relevant employment frameworks, and other conditions such as security clearances, could be a significant obstacle to cooperation and involvement in defence projects by academia and industry. In particular, Mr Callinan and Mr Gray made the point that Australia's allies are more advanced in the processes and infrastructure to facilitate contributors from outside the defence organisation to 'enable them to divide their time between working on their day jobs and working in secure environments to the benefit of their nation's security'.[12] In the view of the committee, Defence should assess if it can do better at facilitating collaboration as these new initiatives are established.

Recommendation 7

5.37 The committee recommends that the Department of Defence, in establishing the Defence Innovation Hub and the Next Generation Technology Fund review the obstacles to public research agencies, academia and industry personnel participating in research and development initiatives.

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11 Defence White Paper 2016, p. 112.

12 *Submission 16*, p. 7.

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