

The Auditor-General
Audit Report No.56 2002-03
Performance Audit

Management of Specialist Information System Skills

Department of Defence

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of Australia 2003

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Canberra ACT
25 June 2003

Dear Mr President
Dear Mr Speaker

The Australian National Audit Office has undertaken a performance audit in the Department of Defence in accordance with the authority contained in the *Auditor-General Act 1997*. I present the report of this audit, and the accompanying brochure, to the Parliament. The report is titled *Management of Specialist Information System Skills*.

Following its tabling in Parliament, the report will be placed on the Australian National Audit Office's Homepage—<http://www.anao.gov.au>.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Oliver Winder', is positioned above the printed name.

Oliver Winder
Acting Auditor-General

The Honourable the President of the Senate
The Honourable the Speaker of the House of Representatives
Parliament House
Canberra ACT

AUDITING FOR AUSTRALIA

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Abbreviations

DC	Defence Committee
ADF	Australian Defence Force
ANAO	Australian National Audit Office
APS	Australian Public Service
CIS	Communication and Information Systems
CIO	Chief Information Officer
CSIG	Corporate Services and Infrastructure Group
DFR	Defence Force Recruiting
DFSS	Defence Force School of Signals
DIE	Defence Information Environment
DIEC	Defence Information Environment Committee
DMO	Defence Materiel Organisation
DPE	Defence Personnel Executive
DSPPR	Directorate of Strategic Personnel Planning and Research
DSTO	Defence Science and Technology Organisation
DWPE	Defence Workforce Planning Executive
ECN	Employment Category Number
HDPE	Head Defence Personnel Executive
ICT	Information and Communication Technology
ISB	Information Systems Branch
ISD	Information Systems Division
IT	Information Technology
IT&T	Information Technology and Telecommunication
JCPAA	Joint Committee of Public Accounts and Audit
OA	Occupational Analysis
PMKeyS	Personnel Management Key Solutions

Summary and Recommendations

Summary

Background

1. Defence seeks to develop 'the knowledge edge' to allow Australia to use its relatively small force to maximum effectiveness. The knowledge edge depends on effective exploitation of human intellectual capital, as well as on command and control structures and decision processes, coupled with appropriate information, information systems and associated infrastructure. Defence's military and administrative information systems combine to form the Defence Information Environment (DIE) and are known as knowledge systems.
2. Development of Defence's knowledge edge and the Defence information environment calls for a wide range of IT skills. These include systems development, acquisition and maintenance skills. The focus of IT specialists ranges from advanced, safety-critical, specialist military equipment and decision-support systems, to logistics and corporate systems that support this complex organisation, both in the office and in the field.
3. The ANAO's Audit Report No.11 *Knowledge System Equipment Acquisition Projects in Defence*, in 2000, commented on the need for skilled staff in all parts of the DIE. The Joint Committee of Public Accounts and Audit (JCPAA) subsequently reviewed the audit report. In its Report 383, in 2001, the JCPAA commented that its major concern about Defence's ability to develop a knowledge edge with adequate coherence, centred on Defence's ability to recruit, develop and retain skilled individuals needed in all parts of the DIE. The JCPAA recommended that the ANAO conduct a follow up audit of Defence's strategies for recruiting, developing and retaining skilled IT personnel. The ANAO agreed to do so.
4. The objective of the audit was to report to Parliament on the progress Defence has made since June 2001 in implementing appropriate strategies for recruiting, developing and retaining skilled IT personnel. The audit focused on management of specialist information system skills and did not examine skills needed by users of information systems, although the latter is also of obvious importance for overall performance.

Key findings and conclusions

5. Defence has acknowledged that recruitment and retention of personnel are among several mission-critical issues that have, for some years, involved duplicated effort, nugatory work and no clear whole-of-defence strategy to

address them. It has also acknowledged that recruitment and retention of sufficient numbers of ADF personnel, especially in key skill areas, is a significant area of risk and an emerging priority that must be monitored and adequately addressed if it is to deliver the performance expected of it by the Government. The proposed Defence People Plan is to provide vision and strategic guidance for Defence personnel policies, and specifically target recruitment and retention issues, but it has not yet been approved for implementation. Defence advised that a draft Plan would be available for consideration by the Defence People Committee in the latter half of 2003.

6. Defence is considering the report of its Defence Strategic Workforce Planning Review. It expects the report to have a major impact in shaping the new Defence Workforce Plan on a total workforce basis and in improving decision-support projections, risk analysis and solutions. In the absence of an overall strategy or plan for the Defence workforce, or its IT skilled component, individual groups in Defence have developed their own approaches to IT personnel issues, admittedly in an uncoordinated manner.

Defence Information Environment

7. Defence has sought to reposition its management of information systems to reflect the strategic direction for an information capability espoused in the 2000 Defence White Paper. In July 2001, Defence created the position of Chief Information Officer (CIO) with strategic responsibility for the DIE. The CIO became a member of the Defence Committee in July 2002. The CIO also chairs the remodelled Defence Information Environment Committee (DIEC). An expected outcome of this repositioning is improved coordination of information system development, leading to improved integration and interoperability of both information systems and the separate Groups that comprise the Defence organisation.

8. This new structure provides a better focus for the DIE Strategic Plan, which has suffered in the past from a lack of accountability for delivery of approved action. The Plan, approved by the DIEC in September 2002, lists a number of priority actions for the next two years. The initial Plan did not consider action to ensure the availability of appropriately skilled personnel to be a priority for the next two years, but Defence advises that workforce initiatives are being included in the current iteration of the Plan.

9. A scoping study commissioned by the former Chief Knowledge Officer was not completed but the newly appointed CIO initiated another review. Defence has not taken action on the report of that review to address skilling issues specifically. However, separate groups have undertaken reorganisation

reviews that are, to a degree, expected to improve the attractiveness of Defence as an employer of choice.

Defence Materiel Organisation

10. IT systems form an essential component of Defence capabilities. For example, Defence depends on IT skilled staff in the Defence Materiel Organisation (DMO) to help deliver and support those systems. DMO is developing strategies to measure its IT skills needs and attract and retain appropriately skilled staff. It has not yet concluded a process to identify factors that affect attraction and retention of skilled people. It is therefore too early to know whether the strategies will be successful.

11. A DMO initiative has been the conduct of a skills needs analysis. It targeted software engineering because that is the IT skill in which DMO has been vulnerable. Management Information Systems Division (MISD), a relatively new part of DMO that has an information systems development focus, plans to conduct a similar needs analysis.

12. DMO is revising the way it provides information systems to Defence. The new model of system development attempts to be more customer focused, with greater emphasis on earlier definition of requirements.

13. Information system skills are not the only skills being addressed in the DMO initiatives. DMO is attempting to put processes in place to address whatever skilling requirements arise. It is also looking to improve its retention of key skilled personnel by making itself a more attractive workplace professionally.

Infrastructure Support, Intelligence and Research

14. Information System Division (ISD), in the Corporate Services and Infrastructure Group, is restructuring its own area and is affected by the formation of National Operations Division for regional service delivery and also the market testing of Central Office IT functions. It had moved to engage professional service providers (PSPs) to ensure continuity of operations during a period of recruiting and retention difficulties. However, it does not consider that it has a shortage of IT skills at present.

15. The global downturn in IT has resulted in greater availability of the types of skilled IT professionals required. ISD is now seeking to increase staff numbers in a period of greater availability. During the restructure, there was no emphasis on workforce planning but Defence advise that its new organisational model focuses on strategic workforce planning processes. ISD's Information Services

Branch has a framework for identifying and meeting training needs, and a staff management plan, but these do not extend to the whole of ISD.

16. Intelligence and Security Group experienced difficulty in attracting and retaining skilled IT staff prior to 2000. The Group took a range of personnel initiatives to address the challenge of having sufficient skilled staff. Retention has improved over the last two years and is not now a pressing issue. The Group recognises that its strategies have yet to be tested in a high-demand market.

17. Similar to the experiences of other areas of Defence, the high demand for IT skills up to 2000 also caused difficulties for DSTO in retaining appropriate IT skilled staff. Current demand levels and the introduction of general retention strategies have contributed to improved stability in the numbers of such staff.

Australian Defence Force

18. The Australian Defence Force (ADF) is in an unusual employment situation because it 'grows' a workforce from its recruits. Defence monitors ADF employment categories, ear-marking any vulnerable groups as 'critical'. These are subject to particular attention by workforce planners. Six of the 15 trades in the ADF with an IT component are rated as critical.

19. In the ADF, although some IT specialisations were identified in the officer ranks, IT is considered a secondary skill-set, used to inform officers' work, rather than being the primary focus of their work. The main focus for IT is the IT related trades in the other ranks.

20. The ADF has difficulty recruiting members to technical trades that have an IT component. The entry-levels for these technical trades are quite high, where the ADF is competing with university and ADF officer entry.

21. Staff retention is problematic for ADF technical trades, such as IT. Internal studies have shown that there is no single factor that influences staff to leave the ADF. The studies have identified a range of influences on separation. Defence is attempting to measure the relative impact of these influences as a component of workforce planning.

Overall conclusion

22. It is difficult to accept that, given the major concern expressed by the JCPAA in 2001, Defence has not acted more swiftly to develop a strategy for IT skills in its workforce, but left individual groups to address the issue separately.

23. Defence has, however, made changes in its management and governance structures that, to a degree, are intended to improve its use of IT. Creation of the

position of CIO as a member of the Defence Committee is a significant strategic change from the previous Chief Knowledge Officer role that it replaced. The position unites responsibility for both administrative and operational information. Defence is attempting to standardise its computing platforms in order to provide consistency of operation in its separate, yet interdependent, groups. As part of strategic planning for the DIE, Defence is now developing workforce related initiatives.

24. Defence groups still have some IT skilling problems, though not to the same extent as in previous years. Each group in Defence has taken action to address its own skilling problems. As much of this action is still in the early stages of implementation, its effectiveness is yet to be realised. With the global IT industry in a downturn, availability of skilled people for some areas of IT has improved in the short term. As a consequence, Defence initiatives to address earlier staffing problems have not been fully tested. The proposed Defence People Plan and Defence Workforce Plan will assist in giving prominence and priority to recruitment and retention issues.

Defence response

25. In its general comments on the report, Defence indicated its support for improved and more comprehensive use of its personnel management system, PMKeyS, not only in relation to the broad workforce data, but also in relation to skills, capabilities and competencies of individual staff. The ANAO agrees that better workforce data would assist the analysis of issues raised in this report.

26. Defence also commented that the report refers to a lack of coordinated activity in relation to IT skills. Defence suggests that this may be more a factor of the diversity of technical skills in the profession rather than a shortcoming of the Defence Organisation. It said that the report recognises the diversity of skills but does not seem to acknowledge how the diversity may impact on the findings.

27. The ANAO recognises that the diversity of skills makes it difficult to coordinate recruitment, training and retention for all IT skilled positions in Defence. However, the ANAO would expect, at least, coordination of those activities across Defence for positions that have similar skill requirements as part of a 'clear whole-of-defence strategy' for recruitment and retention that Defence elsewhere has acknowledged is needed.

28. Defence agreed with the ANAO's four recommendations.

Recommendations

Set out below are the ANAO's recommendations, together with report paragraph references and an indication of the Defence response.

**Recommendation No.1
Para 2.18** The ANAO recommends that Defence include, in its DIE Strategic Plan's priority actions over the next two years, initiatives to address IT skilling of its information system specialist personnel.

Defence response: Agreed.

**Recommendation No.2
Para 3.16** The ANAO recommends that Defence consider including employment conditions developed from analysis of the survey of software engineers in a Defence Employees Certified Agreement.

Defence response: Agreed.

**Recommendation No.3
Para 5.31** The ANAO recommends that Defence implement a suitable process to ensure that the need for training in a new or changed IT skilling requirement is recognised when planning for the requirement and is given due priority.

Defence response: Agreed.

**Recommendation No.4
Para 5.50** The ANAO recommends that Defence, when negotiating contracts involving provision of IT systems, seek to ensure that Defence personnel have a role in maintaining those systems, thereby helping to maintain appropriate in-house IT skills, particularly where they may be needed in an operational environment.

Defence response: Agreed.

Audit Findings and Conclusions

1. Introduction

This chapter provides background information relevant to the audit and describes the context in which Defence planning for, and action on, IT skilling issues can be viewed.

Background

1.1 In its report on knowledge system equipment acquisition projects in Defence¹ in 2000 the ANAO commented as follows:

The Government's national defence policy identifies the highest capability development priority as 'the knowledge edge' to allow Australia to use its relatively small force to maximum effectiveness. The knowledge edge depends on effective exploitation of human intellectual capital, as well as on command and control structures and decision processes coupled with information, information systems and associated infrastructure. Defence's military and administrative information systems combine to form the Defence Information Environment (DIE) and are known as knowledge systems.

Defence is pursuing the knowledge edge by investing extensively in knowledge system acquisition projects. Approved and planned projects that will have a substantial impact on the DIE have a total estimated value of almost \$8.5 billion.

The most substantial risk to knowledge system projects may be those associated with development and retention of skilled individuals needed in all parts of the Defence Information Environment. ...

The ANAO recommends that Defence undertake formal workforce planning and management assessments of the Defence Information Environment workforce to ensure that training, postings, career prospects and professional development are carefully planned and that a holistic view is taken in relation to these matters.²

1.2 Defence accepted the recommendation, subject to the following qualification:

The management of Defence's Information Environment workforce is a complex issue. Workforce management arrangements for Defence Information Environment specialists cross the boundaries of responsibilities of the three Services and Public Service arrangements. The degree to which centralised control is required is unclear. Management issues concerning the Defence Information Environment workforce have parallels with a Defence initiative to develop a joint logistic education and training policy. Defence will adopt a similar approach to

¹ 'Defence' comprises the Department of Defence and the Australian Defence Force (Navy, Army and Air Force).

² Audit Report No.11 2000–01 *Knowledge System Equipment Acquisition Projects in Defence*, pp. 2, 56 and 57.

the information workforce. The Chief Knowledge Officer, with other stakeholders, will initiate a study of these issues to better determine the requirement for centralised workforce planning of information specialists. This study will improve the understanding of the implications of the current situation and identify strategies for improvement.³

1.3 The Joint Committee of Public Accounts and Audit (JCPAA) decided to review the audit report. In its submission to the JCPAA, Defence stated:

The establishment of a Chief Knowledge Officer on 1 July 2000 provided a central focus for Knowledge Systems capability development in Defence and the Chief Knowledge Officer, with other stakeholders, had initiated a scoping study with the aim of understanding the current situation with training and education of the Defence Information Environment workforce. The scoping study commenced in February 2001 and is planned to complete in June 2001. Further action will depend on the outcomes of the scoping study, however Defence recognises the importance of the people dimension and interaction with the Defence Information Environment.

Defence 2000 [the Defence White Paper] describes the way ahead for Defence to improve its information capabilities... Based on the *Defence 2000* guidance, the Chief Knowledge Officer is developing a Defence Knowledge Improvement Plan as a detailed guide for enhancement of the Defence Information Environment over the next ten years.⁴

1.4 In the report of its review, the JCPAA concluded as follows:

The major concern the Committee has about Defence's ability to develop a knowledge edge which has adequate coherence, centres on Defence's ability to recruit, develop and retain skilled individuals needed in all parts of the Defence information environment. The Committee believes it appropriate that ANAO conduct a follow-up after June 2001, when Defence's scoping exercise is completed and Defence will have developed strategies to assist its recruitment and retention of skilled personnel.

The Committee recommends that the ANAO conduct a follow-up audit into Defence's strategies for recruiting, developing and retaining skilled IT personnel.⁵

1.5 The ANAO accepted the recommendation. This report sets out findings from the audit.

³ *ibid.*, paragraph 4.54.

⁴ Department of Defence submission to the Joint Committee of Public Accounts and Audit (JCPAA) 2 March 2001.

⁵ JCPAA Report 383 *Review of Auditor-General's Reports 2000–2001 First Quarter*, June 2001, p. 69.

Developments since the audit report

1.6 The Defence White Paper, in December 2000, stated that recruiting and retaining sufficient skilled and experienced people will be one of the most significant challenges in building the ADF of the twenty-first century. It also said, with respect to information use:

Effective use of information is at the heart of Australia's defence capability. Accordingly, the Government plans substantial enhancements to intelligence, surveillance and communications capabilities; and command, logistics and business systems. Overall spending on the maintenance of information capabilities is planned to average around \$1.3 billion per year over the decade. The expected capital expenditure needed for the capability enhancements will total around \$1.9 billion over the decade. Additional personnel and operating costs amount to about \$630 million.⁶

1.7 *The Defence Plan*, in 2001, acknowledged that Defence recruitment and retention are among several mission-critical issues that have, for some years, involved duplicated effort, nugatory work and no clear whole-of-Defence strategy to address them. The Plan indicated that a new whole-of-Defence strategy map would assist in focusing resources on such issues.⁷

1.8 Defence conducted a personnel 'environment scan' in August 2001. It sought to identify internal and external personnel trends as a basis for future human resource policies. It therefore examined a broad range of factors and did not focus on particular sectors, trades or skills in Defence. It identified a need for ongoing research work and commented on the lack of a coordinated data collection effort to inform personnel policy areas across Defence. It indicated that PMKeyS, Defence's centralised personnel database, needs to cater for related research.

1.9 An update of the scan has been completed. The significance of national skills shortages has emerged as an issue in the update. This does not extend to identifying specific IT related shortages in Defence, but recognises national and State skills shortages identified by the Department of Employment and Workplace Relations' analysis mentioned below. The likely flow-on for Defence is a more detailed scrutiny of skills shortages via a comprehensive study of personnel supply in 2003, to be conducted by Defence's Directorate of Strategic Personnel Planning and Research.

⁶ *Defence 2000: Our Future Defence Force*, Defence Publishing Service, December 2000, pp. xii and xv.

⁷ Department of Defence, *The Defence Plan*, (first version), Foreword by the Secretary of Defence and the Chief of the Defence Force, 2001.

A workforce strategy

1.10 Defence initiated a strategic workforce planning review in December 2001. It focused on providing a long-term framework intended to place people at the heart of the capability development process. It was concerned with attraction, recruitment, employment, development, retention, transition and separation of Defence people to meet workforce requirements. It did not treat IT skills specifically but its strategic outlook would have an impact on planning for those particular skill requirements, as for all other requirements.

1.11 In summary, the report of the review, the Defence Strategic Workforce Planning Review, described the future as requiring increasingly different capabilities. This would place a greater emphasis on changes to education and training by Defence. The report also described a move towards a 'high-tech', communications-skilled workforce. The report indicated that, to obtain such skills, Defence would be competing with the Australian economy (that is, general industry in Australia would also be moving toward the higher technology end of the workforce).

1.12 Recommendations of the report focused on career management of the workforce. The report advocated greater cross-Group cooperation to strengthen workforce planning. Under this concept, one Group would take responsibility for coordinating workforce planning across Defence in critical workforce areas such as the Information Environment. Coordination would occur in close consultation with stakeholders. Defence advised that CIO provides an early model for this approach. The final report of the strategic review has been presented to the Secretary and CDF, and has been endorsed by the Defence Committee. It will assist in developing a Defence Workforce Plan aimed at linking total workforce requirements across Defence to capability.

1.13 The proposed Defence Workforce Plan will be relevant to a proposed Defence People Plan, mentioned in Defence's Portfolio Budget Statements (May 2002):

Defence faces a number of key areas of risk and emerging priorities which must be monitored and addressed if it is to deliver the performance expected of it by the Government. These include ... recruitment and retention of sufficient numbers of ADF personnel, especially in key skill areas. ...

In 2002–03, Defence will ... begin implementation of the Defence People Plan to provide vision and strategic guidance for Defence personnel policies, and specifically target recruitment and retention issues. ...

Defence's approach to its people will focus on five strategic people themes:

- Attracting—to make Defence an employer of choice;
- Recruiting—to recruit the right people;

- Developing—to develop our people to meet Defence and individual needs;
- Retaining—to create a climate where the people with the skills we need will want to stay in Defence; and
- Transitioning—to ensure that our people are supported when they leave Defence and that they are welcome back, including for part-time work.⁸

1.14 The Defence People Plan has not been approved for implementation. In the absence of an overall workforce strategy or plan, individual groups in Defence have developed their own approaches to IT personnel issues, admittedly in an uncoordinated manner. These are outlined in later chapters of this report.

IT in the broader context

1.15 In its report on Australian Government agency use of information and communication technology (ICT), the Government's Management Advisory Committee stated:

The success of ICT service delivery within the Commonwealth relies on staff having the knowledge and skills necessary to meet agencies' business requirements. Contract management is a key skill. The current competitiveness of the IT sector makes it difficult for agencies to retain the qualified staff they have. In addition, there is a perceived lack of suitably qualified or experienced employees in Australia. Recent experiences with government IT outsourcing have also encouraged staff to move to the private sector, further reducing the ICT skill pool across the Australian Public Service.⁹

What is IT?

1.16 The IT industry uses different terms to describe itself, according to the emphasis placed on a particular aspect. With the convergence of computing and telecommunications technologies, commentators may describe their subject as information technology and telecommunication (IT&T), information and communication technology (ICT) or simply IT. This report uses the term 'IT' in the broad sense, encompassing the other terms and covering both software as well as hardware. Industry references cited may use any of the above terms.

1.17 Within Defence, a broad range of functions comes within the scope of IT. The IT skills that Defence requires are necessarily wide-ranging and include systems development, acquisition and maintenance. The focus of IT specialists

⁸ *Portfolio Budget Statements 2002–03, Defence Portfolio Budget Related Paper Nos. 1.4A and 1.4C, May 2002, pp. 5, 9 and 103.*

⁹ *Australian Government Use of Information and Communications Technology: a new governance and investment framework, Management Advisory Committee, October 2002.*

ranges through high-risk, safety-critical, real-time military equipment, decision-support systems, logistics and business systems, to the infrastructure that supports this complex organisation, both in the office and in the field.

1.18 Defence, like other organisations, competes in the market for suitably skilled people. Its ability to attract and retain such people is therefore not completely within its control. The ANAO reviewed the industry environment to establish a context for assessing Defence's strategies to address IT staffing issues.

Department of Employment and Workplace Relations analysis

1.19 The Department of Employment and Workplace Relations (DEWR) analyses industry trends. Of particular interest are DEWR projections for Information and Communication Technology (ICT) skills.

1.20 DEWR recognises the dynamic nature of the ICT industry. DEWR stated that, 'Over 1500 ICT specialisations are in use in the Australian economy at present—360 are new in the past year, while other ICT skills have become obsolete.'¹⁰ This means that, in such a rapidly changing industry, currency of skills is fundamental to career success. Further, in such a vigorous industry environment, careers are self-driven, with little reliance on the employer.

1.21 DEWR also provides information on job prospects for a range of employment categories. In 2001 DEWR stated that the demand for ICT skilled workers reduced and the number of vacancies fell sharply. Despite this, a number of ICT skills remain in demand, particularly *e-commerce* and security specialisations, and there are shortages of programming skills in specific applications.¹¹

1.22 Of the occupational categories used by DEWR, those relevant to this audit are Computing and IT professionals, and Electrical and Electronic Trades. In these fields, the DEWR information of most relevance is the job growth for the five years to February 2002, projected job vacancies and job openings. These are summarised in Table 1.

1.23 Table 1 shows that there was high growth in the Computing and IT Professionals job-market. Conversely, the Electrical and Electronic Trades employment group declined over the previous five years. These trades are particularly relevant to the ADF, due to the direct link to technical trades. The findings of the DEWR analysis have been supported by the recent report from the Framework for the Future Steering Committee that identified an overall

¹⁰ Department of Employment and Workplace Relations, DEWR Outlook, June 2002. <www.workplace.gov.au/WP/CDA/files/WP/outlook2002.pdf> Sourced 5/12/2002.

¹¹ *ibid.*, p. 10.

contraction in demand for formal ICT skills in the economy over the last two years. Overall, the ICT industry market has stabilised but is set for future growth, with average to very good prospects expected.¹² This is significant for Defence as it means increased competition in this market, thereby increasing the risk of losing skilled IT personnel as well as increased recruitment difficulties.

Table 1
Australian IT Industry Projections

Occupational Group / sub-group	Job Growth 5 yrs to Feb 2002 (%)	Job Vacancies		Job Openings		Summary Prospects
		'000	%	'000	%	
Computing and IT Professionals	58.6	15.2	7.9	58.4	34.6	Very good
Computing and IT Support	15.6	2.7	9.2	10.6	40.9	Average
Total Computing and IT	51.1	17.9	8.0	69.0	35.4	Very good
Telecommunications and Electronics	-14.7	11.0	19.1	26.4	38.4	Good
Total Electrical and Electronic Trades	-8.7	19.9	11.8	64.0	33.6	Good

Note: Data on vacancies is presented as a percentage of employment and the number of employees recruited in the course of a full year. Job openings refer to employees who move out of the occupation, thus creating career opportunities.

Source: DEWR Outlook, June 2002. Department of Employment and Workplace Relations. <www.workplace.gov.au/WP/CDA/files/WP/outlook2002.pdf> as at 5/12/2002.

Industry studies

1.24 META Group is a global IT consulting firm that conducts industry research. It surveyed 500 companies in 40 geographic locations to develop its 2001 IT staffing and compensation guide.¹³ The guide stated that global IT personnel turnover had fallen from 11 per cent in 2000 to 10 per cent the following year. For the fourth successive year, retention was cited as the 'most serious problem facing IT organisations'.¹⁴

1.25 Concerns for IT personnel issues are mirrored in a similar study by Accenture, a management and technology consulting organisation. For its study of the 'digital economy', Accenture interviewed 500 executives worldwide on a range of IT skilling issues. It reported that two-thirds of executives interviewed considered that employee development would become significantly more important in the near future. Over half the interviewees named training and

¹² *Enabling Our Future: Framework for the information and communications technology industry*, Framework for the Future Steering Committee, April 2003.

¹³ META Group, *2001 IT Staffing and Compensation Guide: Human Capital Management Best Practice and Trends*, <www.metagroup.com/humancapital> (sourced 1 November 2002, p. 2).

¹⁴ *ibid.*, p. 2.

development as one of their top initiatives to improve human performance.¹⁵ Conversely, only one quarter of respondents stated that their company's growth and development program had changed. Accenture stated that training was often a one-off, or a quick fix, for an isolated issue.¹⁶ The Accenture study indicated a perceived need for training in industry, but unwillingness to act on this need.

Audit objective

1.26 The objective of the audit was to report to Parliament on the progress Defence has made since June 2001 in implementing appropriate strategies for recruiting, developing and retaining skilled IT personnel.

1.27 The ANAO derived audit criteria from the JCPAA's major concern (paragraph 1.4); CobIT¹⁷ management guidance; and the ANAO Better Practice Guide on Workforce Planning in the Australian Public Service.

1.28 A discussion paper setting out audit findings was provided to Defence in February 2003 and discussed with Defence in March. The ANAO provided Defence with the proposed report of the audit in April 2003. The audit was conducted in conformance with ANAO auditing standards and cost \$263 000.

Structure of this report

1.29 Chapter 2 discusses the Defence information environment, the position of Chief Information Officer and strategic changes for IT in Defence. Chapters 3 to 5 outline what is being done about IT skills issues by Defence Materiel Organisation; Information Systems Division, Intelligence and Security Group and Defence Science and Technology Organisation; and the ADF, respectively. Chapter 6 summarises the management strategies designed to address the needs identified.

¹⁵ Accenture, *The High Performance Workforce-Separating the Digital Economy's Winners from the Losers* www.accenture.com/xdoc/en/services/hp/hpne/High_Performance.pdf (sourced 1 November 2002, p. 15).

¹⁶ *ibid.*, p. 15.

¹⁷ Information Systems Audit and Control Foundation, *CobIT IT Governance Institute*, Illinois, 2000.

2. Defence Information Environment

This chapter discusses the Defence information environment, the position of Chief Information Officer, the Defence Information Environment Committee and strategic changes for IT in Defence.

IT skill needs

2.1 The Defence information environment (DIE) is a term used to describe all the aspects of the use of information in Defence, including the individuals and systems that deal with information. Defence recently refined its definition of the DIE (paragraph 2.11) to allow appropriate governance of this key capability.

2.2 Defence recognises that it has gaps in its information environment. It has identified systemic problems in its three major business systems—ROMAN finance system, Standard Defence Supply System (SDSS) and PMKeyS personnel system—that require redevelopment, integration and data integrity checking. To achieve its goal of properly functioning and integrated business systems, Defence needs significant IT skills, in addition to the other specific business expertise related to each function.

2.3 As described in paragraph 1.3, Defence's primary action in addressing its IT skilling issues was the scoping study commissioned by the then Chief Knowledge Officer (CKO). However, there was no specific corrective action on the findings in the study, as there was no final report.

2.4 A draft report of the scoping study, dated October 2001, observed that it was difficult to define the target DIE audience for IT related training and education because there was confusion over the definition of the DIE. It identified a broad range of activities in Defence that require IT skills and emphasised that such skills are diverse. The report highlighted the need for Defence to identify staff who require training in IT skills before providing the training. Trade training for IT skills in the ADF was considered reasonable.

2.5 The scoping study identified other challenges for Defence in its approach to IT. Governance of IT throughout Defence is a particular challenge, given its complexity, growth and rapid change. The study recognised that, at the time, significant steps were being taken to address this challenge. In addition to education and training, the study included recruitment and retention as major issues.

2.6 The position of CKO was replaced by the Chief Information Officer (CIO), who, in December 2001, commissioned an IT workforce planning review. The review reported that civilian IT workforce planning is largely non-existent,

although civilians form the bulk of the IT workforce. In contrast, it reported that the ADF's three Services have long had workforce planning infrastructures for their personnel and are starting to develop management categories for Communication and Information Systems (CIS) trades. The review also identified Defence initiatives that better positioned Defence to conduct IT workforce planning. The initiatives included the Strategic Workforce Planning Review, development of the Defence Matters Scorecard, the Defence Enterprise Architecture Framework, adoption of a standard project management method and formation of the Defence Force School of Signals (DFSS, discussed at paragraph 5.19).

2.7 The Defence Information Environment Committee (DIEC) considered the report of this review in July 2002. It noted that there was no coordinated Defence-wide risk assessment of the impact on capability of critical IT trades and the lack of formal IT workforce planning. It agreed that the DIE Strategic Plan is to articulate and define requirements for improving IT workforce planning arrangements, with comprehensive risk management strategies. It decided to request support from Defence Personnel Executive (DPE) to coordinate research, analysis, development of strategies and implementation of campaigns to improve access to an appropriate IT workforce in Defence.

Approach

2.8 Defence has given the CIO strategic responsibility for the DIE. The CIO reports directly to the Secretary of the Department and Chief of the Defence Force (CDF) and is accountable for completeness and coherence in planning for the DIE. CIO is tasked with establishing improved strategic direction as well as governance and coordination arrangements for development, operation and management of DIE capabilities.

2.9 The DIEC is a subcommittee of the Defence Committee. Its role is to advise the CIO, as coordinating capability manager for the DIE, on development and sustainment of the current DIE and design and development of the information environment that will support future decision-making in Defence.

2.10 Governance principles accepted by the DIEC recognise that Service Chiefs and Group Heads remain accountable to the Secretary and CDF for information management in their respective areas of responsibility, with the strategic direction and related policies established by the CIO, through the DIEC.

2.11 In September 2002, the DIEC agreed on the following broader definition of the DIE:

the aggregation of information, individuals and the systems in Defence that create, collect, process, disseminate or deny this information. It includes intelligence,

surveillance, communication, information warfare, electronic warfare (which includes self protection), command and headquarters systems and management (logistics and business) applications.¹⁸

2.12 The DIEC agreed, in September 2002, that the DIE Strategic Plan for 2002–03 and 2003–04 was ready to be promulgated, subject to some amendments to define initiatives and specify target dates and the Groups responsible for implementation. The DIEC saw it as an evolutionary plan that would benefit from additional details from the Groups involved. In line with revised governance arrangements, the DIEC intends to issue an annual plan that Group and Service Chiefs can incorporate in their business plans for the following financial year.

2.13 The DIEC proposes a new start for Defence under its new governance arrangements. The previous plan, the Defence Knowledge Improvement Strategic Plan, was developed in April 2001 under the authority of the then CKO. With Defence's restructure of responsibilities for its information capability, there was no accountability for achieving the goals of the previous plan. The DIEC has, however, instituted monthly reporting of progress against the new plan.

2.14 The DIEC has incorporated another element of the governance framework in the strategic plan. This is Defence's Balanced Scorecard, an initiative introduced, with the Defence Strategy Map, to link activities to the objectives of each strategy.¹⁹ Defence has indicated that, as this is a first attempt at using the Scorecard, changes should be expected as experience is developed. The plan will include measures and targets once the Scorecard matures. At present, however, Defence recognises that the Scorecard and Strategy Map suffer from various negative elements, such as lack of commitment, accountability, support, meaningful targets and performance measures.²⁰

2.15 The DIE Strategic Plan focuses on the architecture necessary to achieve the Defence White Paper vision of an Information Capability that supports the three Services. In addition, it highlights the need to improve information management.

2.16 The plan identifies two people-related strategic objectives. The first is the development of a workforce plan addressing DIE personnel. The second is that individuals have the (DIE) skills to perform their work. The plan includes priority actions for the next two years.

¹⁸ Minutes of DIEC meeting 10 September 2002.

¹⁹ See *Defence Annual Report 2001-02* pp. 8, 10 and 12.

²⁰ Way Forward Strategy Map—Briefing Pack, April 2003.

2.17 The ANAO notes that there is no action planned over the next two years to address IT skilling, although there have been ongoing problems associated with a lack of skilled IT personnel. An initiative for 2002–03, related to planning the DIE workforce, is to define who are DIE personnel. However, this has not been included in the list of priority actions. Defence advised that the second iteration of the plan is due for release and will further develop workforce related initiatives.

Recommendation No.1

2.18 The ANAO recommends that Defence include, in its DIE Strategic Plan's priority actions over the next two years, initiatives to address IT skilling of its information system specialist personnel.

Defence response

2.19 Agreed. The ANAO might note that the definition of 'priority initiative' in the DIE Plan (note that the term 'strategic' is no longer being used until a more complete longer term perspective can be developed) refers to initiatives the progress of which is reported formally to the DIE Sub-Committee and thus the DIEC. The DIEC is now using the term 'visible' to define such initiatives. Other initiatives still remain in the DIE Plan and continue to be actioned and have their progress reported. In actioning the first recommendation, the CIO intends to ensure that the initiatives involved are visible and that the DIEC monitors their progress.

ANAO comment:

2.20 Given the JCPAA's expectation that Defence would have developed strategies in 2001 to assist its recruitment and retention of IT skilled personnel, the ANAO would expect to see some urgency attached to the effort now being made to address the same issues some two years later.

Conclusion

2.21 Defence has sought to reposition its management of information systems to reflect the strategic direction for an information capability set out in the Defence White Paper. Created in July 2001, the CIO became a member of the Defence Committee in July 2002. The CIO also chairs the remodelled DIEC. An expected outcome of this repositioning is improved coordination of information system development, leading to improved integration and interoperability of both information systems and the separate Groups that comprise the Defence organisation.

2.22 This new structure provides a better focus for the DIE Strategic Plan, which has suffered in the past from a lack of accountability for delivery of approved action.

2.23 Defence did not complete the scoping study commissioned by the Chief Knowledge Officer but the newly appointed CIO initiated another review. Defence has not taken action on the resultant report to address skilling issues specifically.

3. Defence Materiel Organisation

This chapter discusses the role of information system specialists in DMO in providing through-life capability that meets Defence's needs.

IT skill needs

3.1 DMO is responsible for acquisition of capital equipment and systems and through-life support of materiel for the ADF. Formed in 2000, the DMO combined the former Defence Acquisition Organisation, Support Command Australia and part of National Support Division. The goal was to improve delivery of ADF materiel by integrating acquisition and through-life support activities into a whole-of-life capability management system.

3.2 In an address to the Defence Watch Seminar in 2001, the then Secretary of Defence stated:

Since the 1970s, successive reviews of Defence acquisition have identified too many Defence major capital acquisition projects as failing to achieve budget, schedule or technical requirements. In addition, through-life support needs and costs are seldom optimised and are generally inadequately assessed prior to equipment delivery. These failings have arisen due to poor requirements definition and project planning, cumbersome and bureaucratic acquisition processes, and a lack of appropriately skilled staff.

In January 2000, the Under Secretary Defence Materiel commissioned a review of major capital acquisition processes in order to recommend a comprehensive reform program to redress these shortcomings. On 22 June 2000, Minister Moore agreed to implement the proposed reforms and to establish the Defence Materiel Organisation.²¹

3.3 DMO has five operating systems divisions that are responsible for contributing to capability development and definition of new major and minor investment proposals; acquisition of materiel elements of approved capability investments, their introduction into service and in-service support; and their disposal when life-of-type has been reached. Systems Program Offices in the divisions are the focal point for procurement, delivery, in-service and support.

3.4 Information systems form a significant part of most materiel acquisition projects. Most major capital projects are software intensive. These are the projects most at risk. A risk assessment for Defence in 2001 rated the likelihood of failure of major capital equipment acquisition projects, inadequate contract management, and ineffective IT systems (not delivered and/or not integrated)

²¹ Hawke, A. *One Year On*, address to the Defence Watch Seminar, February 2001.

as very high for the three years 2001–04.²² The nature of the software incorporated in major projects covers a large spectrum from safety-critical, software-intensive, real-time systems through to non-safety-critical, non-real-time information systems. DMO therefore depends on a range of IT skills. One specific set is known as software engineering and is required especially for the high-risk end of the spectrum. There is a global shortage of such skills. The Under Secretary Defence Materiel commented recently on difficulties in attracting and retaining some key skills, particularly aerospace engineers and software engineers.²³ DMO has 127 staff in IT-classified positions and 55 software engineers spread over its operating divisions.

3.5 As one of its strategies for assessing its workforce requirements, DMO conducted a training needs analysis survey in 1998 to assess the level and quantum of such skills necessary to achieve its capability development targets.

3.6 With external assistance, DMO also conducted a pilot study of workforce planning that examined software engineering as one of three job roles selected. It found that, of the three roles examined, the greatest growth was likely to be in software engineering; that the experience levels required for the job would shift upwards; and that the dependence on graduate recruitment was inappropriate to fill the demand. It identified a gap in the software engineering skills levels of its staff, with a likely shortage of around 110 such staff over the next three years.

3.7 DMO's Management Information Systems Division (MISD) is responsible for the non-safety-critical, non-real-time materiel information systems. Created in July 2002, MISD brings together a disparate workforce and currently manages 42 information system projects valued at some \$98 million. The projects range from inventory management, warehousing and distribution, engineering and maintenance to finance and procurement. In its dual role of defining IT capability requirements on behalf of the ADF and delivering those systems, MISD has an ongoing need for business analysis and IT project management skills. One of the expected benefits of the new structure is improved retention, based on better alignment of skills to tasks, as well as better career path opportunities.

Approach

3.8 The DMO reform program²⁴ is addressing software skills issues through its people reform agenda and software acquisition reform agenda. DMO is

²² Audit Report No.24 2001–02 *Status Reporting of Major Defence Acquisition Projects* p. 26.

²³ Senate Foreign Affairs, Defence and Trade References Committee, Hansard 7 February 2003, p. 374: Mr Roche—I can see some attractions in terms of giving me some flexibility on the remuneration front, because I do have difficulties in attracting and retaining some key skills, particularly aerospace engineers and software engineers.

²⁴ See *Portfolio Budget Statements 2002–03: Defence Portfolio*, Budget Related Paper Nos. 1.4A and 1.4C p.98.

revising the way it provides information systems to Defence. The new model of system development attempts to be more customer focused, with greater emphasis on earlier definition of requirements. DMO considers that real-time safety-critical systems represent the greatest risk in the information system spectrum and is therefore focusing on that area of IT skills.

3.9 DMO has identified education and training opportunities to bring its staff up to the level recognised as necessary for its proper functioning. It collaborated with the US Defense Acquisition University to obtain a software acquisition management course. This is an interim measure until it develops training and education programs based on the training needs analysis mentioned above. For the assurance aspect of the acquisition role, DMO tailored a program from the US Department of Defense into what it called the Australian Professional Software Development Program.

3.10 Such an approach would help address a training and skills issue raised in the ANAO's report on test and evaluation of major Defence equipment acquisition. Recommendation No.5 of that report concerned adequate training and skills for personnel responsible for safety-critical system.²⁵

3.11 MISD proposes to conduct a training needs analysis similar to that of 1998 and expects to extend the DMO workforce planning pilot study to its own workforce.

3.12 Information system skills are not the only skills being addressed in the DMO initiatives. DMO is attempting to address whatever skilling requirements arise. As part of its development of process modelling, DMO includes information on skills required to perform key processes. This work will help identify skill requirements for each career stream and as the proposed project profiling activity has matured will allow competency levels to be determined. DMO is also looking to improve its retention of key skilled personnel by making itself a more attractive workplace professionally. It is developing career-streaming activities for many of its strategically significant skill areas. This initiative involves developing scenario plans to be used to develop workforce plans that reflect the needs of DMO. A career streaming study of software engineers is planned but, due to a lack of priority for resources, will not be conducted in the next six months.

²⁵ Audit Report No.30 2001-02, *Test and Evaluation of Major Defence Equipment Acquisitions*, January 2002, p. 114:

Recommendation No.5: The ANAO recommends that Defence aim to ensure that its personnel responsible for safety-critical system development, acquisition, maintenance and test and evaluation, have training and skills adequate for their responsibilities. Defence response: Disagreed. The recommendation is impossibly wide and compliance would be difficult to assess.

3.13 DMO is testing a decision support system to help identify the factors that affect staff retention. It selected the system after the success of a trial undertaken by DPE (see paragraph 6.2). DMO expects to extend use of the decision support system to other key skills, including other IT skills.

3.14 In January 2003, DMO initiated a national survey of Defence software engineers as part of its Software Acquisition Reform Program. The survey is part of its investigation of staffing issues associated with the recruitment and retention of software engineers to support the DMO's software intensive programs. For purposes of market comparison, DMO is also surveying software engineers employed in industry. It intends to use the survey data as the basis for making its employment conditions more attractive to such key staff.

3.15 DMO considers that it is important that employment conditions provide appropriate differentiation between high level information system skills, such as software engineers, and the more common IT skills. The ANAO suggests that a way to provide such differentiation, and to attract appropriately skilled staff, would be to codify employment conditions in the next Defence Employees Certified Agreement, as DSTO has done (see paragraph 4.20). The ANAO recognises that this is a wider issue than employment conditions for software engineers alone, and therefore would need careful consideration.

Recommendation No.2

3.16 The ANAO recommends that Defence consider including employment conditions developed from analysis of the survey of software engineers in a Defence Employees Certified Agreement.

Defence response

3.17 Agreed. Defence is happy to consider the ANAO's recommendation, in consultation with all Defence Groups, during the current period of consultation prior to the drafting of the next Defence Employees Certified Agreement in August 2003. The current Agreement (2002–03) expires on 31 December 2003.

Conclusion

3.18 IT systems form an essential component of Defence capabilities. Defence depends on DMO's IT skilled people to help deliver and support those IT systems. DMO is taking action to develop strategies to measure its IT skills needs and address the issues of attracting and retaining appropriately skilled staff. It has not yet concluded the identification process, which includes identifying factors that affect attraction and retention of skilled people. It is therefore too early to know whether the strategies will be successful.

4. Infrastructure Support, Intelligence and Research

This chapter discusses the IT skills issues faced by Information Systems Division, Intelligence and Security Group and Defence Science and Technology Organisation.

Information Systems Division

IT skill needs

4.1 Information Systems Division (ISD), in the Corporate Services and Infrastructure Group (CSIG), has the bulk of Defence's conventional IT specialists, that is, those who provide administrative computing infrastructure support. It presently has some 1080 civilian staff and 180 Service personnel. Most are based in Canberra. Because of ADF deployments overseas, the number of Service personnel posted to ISD is at a minimum. The 180 Service personnel posted to ISD at present occupy a small proportion of the 467 positions earmarked for uniformed personnel.

4.2 ISD also utilises the skills of contractors and consultants. Consultants are brought in to assist the policies, proposals or activities of Defence management. They are not involved in day-to-day operation or development of systems and so are not part of the IT skills base. Contractors are employed in IT functions and are known as professional services providers (PSP). There is no integrated database to record the use of contractors. A monthly search of the finance system is required to obtain visibility of contractor employment. A search conducted during the audit revealed that 266 contractors are employed in IT positions in ISD.

4.3 ISD had moved toward PSPs to ensure continuity of operations during the period of recruiting and retention difficulties. However, it does not consider that it has a shortage of IT skills at present. The global downturn in IT has resulted in greater availability of the types of skilled IT professionals required. It is now seeking to increase staff numbers in a period of greater availability. ISD is also seeking to save about \$4 million per year by converting the bulk of its contract IT staff to APS positions. The skills seen to be scarce are leadership and management, which need to be combined with technical skills so as to manage IT projects effectively.

Approach

4.4 ISD reviewed its organisational structure last year. Part of the review was based on benchmarking with targeted IT&T organisations. The review focused

on developing a structure to support its service delivery and did not examine staff skills. Its recommendations on restructuring were accepted by the ISD Executive in June 2002 and implementation began in July. There was no emphasis on workforce planning. The restructuring focused more on function and process than on the skills of the staff. Defence advised that ISD's new organisational model focuses on strategic workforce planning processes and that implementation of the review will include the introduction of position profiles that identify the core capabilities and qualifications required.

4.5 The personnel management function supporting ISD changed recently. ISD's operational area, Information Services Branch (ISB), had its own support group that dealt with recruitment and training. It was developing a workforce plan in conjunction with the regional operational sites. The plan included linking skills sets and competencies to positions, as well as identifying training received. It was to be extended to the rest of ISD. Establishment of the National Operations Division, which has taken over responsibility for regional service delivery, seems to have reduced the effectiveness of this initiative.

4.6 In addition, the People, Policy and Finance (PP&F) Branch, in CSIG is now supplying the staff management function for ISD, although the transition from ISB is not yet complete. CSIG has been developing links with other institutions to improve its attraction and retention of IT personnel. It has joined with an ACT Government initiative to provide ACT IT cadetships; with the Department of Employment and Workplace Relations to provide sponsored indigenous cadetships; and with Griffith University to provide online cadetships. PP&F Branch referred to Defence's Balanced Scorecard initiative and indicated that it is only in the early stages of using the Scorecard to monitor staff contribution to results sought by Government and that no useful information is available yet.

4.7 ISD maintains that availability of IT skills is not a problem and does not have a management plan that supports maintenance of the IT skills required to deliver its services. ISB has a staff management plan for 2002–03. ISB is also developing a skills identification and career support system to promote appropriate training linked to personnel needs. The IS-CADF (Information Systems—Competency And Development Framework) is designed to record competencies to enable personnel to access job competencies to ensure skills alignment, and to assess skilling requirements for job changes. This initiative seems to be limited to ISB personnel. ISD needs to ensure that the system is capable of integration with PMKeyS, Defence's personnel management system.

4.8 The IT&T Market Testing team conducted a risk assessment of the possible outsourcing of Defence's IT infrastructure services, which could potentially

impact on staffing of ISD. The team identified a risk to sustaining IT&T skills of Service personnel normally stationed in ISD. It is seeking to embed a number of positions for Service personnel in any contract arrangements that might be made as a result of the market testing.

Intelligence and Security Group

IT skill needs

4.9 Defence's Intelligence and Security Group provides intelligence collection and analysis to support the planning and conduct of ADF operations, defence policy-making and planning, capability development and wider Government decision-making. Defence acknowledges that its ability to preserve its capability edge in intelligence collection and analysis is critically dependent on, among other things, the availability of skilled and experienced personnel to support ongoing operations. It recognises that recruitment and retention of skilled people will remain a key challenge.²⁶

4.10 The Group's activities are not publicly disclosed.

4.11 The Group has, by its nature, specialist IT and other skill needs separate from those elsewhere in Defence. The Group has some 260 staff with a range of IT related skills.

Approach

4.12 The Deputy Secretary Intelligence and Security advised the ANAO that the Group obtained external assistance to review its staffing. The reviews highlighted retention of technical, IT and engineering staff as an issue to be addressed. In response to this issue, the Group adopted a range of strategies that focus on staff recruitment and retention.

4.13 The Group has a graduate recruitment program specially targeted at IT and engineering graduates and also runs both cadet and vacation programs for engineering and IT students.

4.14 The Group introduced broad-banding arrangements in January 2001 to provide greater flexibility in recognising the advances in skills of its technical workforce. IT staff now have a better-defined career path that matches their skills development and ability to undertake more complex work. In response to identified needs of the specialist workforce, it has adopted policies on part-time work and return to work provisions that are more family friendly.

²⁶ *Portfolio Budget Statements 2002–03: Defence Portfolio, Budget Related Paper Nos 1.4A and 1.4C* p. 54.

4.15 Staff turnover data indicates improved retention in both 2001 and 2002, leading to a conclusion that the initiatives have been successful. The Group's executive notes, however, that external challenges experienced prior to 2000 are not now as great and that the new strategies have not been tested in high-demand markets.

4.16 The Group is also seeking external assistance to develop a strategic approach to people management. This would need to be consistent with Defence-wide developments in strategic workforce planning and coordinated personnel systems.

Defence Science and Technology Organisation

IT skill needs

4.17 The role of the Defence Science and Technology Organisation (DSTO) is to provide expert, impartial and innovative application of science and technology that is best suited to Australia's defence and security needs. DSTO research focuses on:

- investigating future developments in technology which show promise for defence applications;
- ensuring that Australia is an informed buyer of equipment;
- developing new defence capabilities; and
- enhancing existing capabilities by increasing operational performance and reducing the costs of ownership.

4.18 DSTO operates a computer network that is separate from Defence's other computer networks. DSTO's 74 information system staff provide infrastructure and administrative computing support to that network and to DSTO's 2300 personnel. There are also 900 professional staff with IT and related skills spread throughout DSTO's Divisions, some of whom provide information system design and development support to the research effort.

Approach

4.19 Because each division has a distinct research focus, it handles its own recruiting, at the same time participating in DSTO's graduate recruitment program. Where IT skills are in high demand, DSTO has contracted with an external agency to provide both PSPs and recruitment services. Other initiatives to attract potential recruits include employing university students during their vacation and industry-based learning.

4.20 In its approach to retention of skilled staff, DSTO uses the Defence Employees Certified Agreement to provide attractive working conditions. It has also developed ongoing training programs to support the development of its staff. In addition, the 'pathways program' provides a five-year orientation program intended to strengthen its employees understanding of their role in, and commitment to, DSTO. These initiatives are available to all staff and are not limited to those with IT skills.

4.21 Like other areas of Defence, DSTO experienced difficulties in retaining appropriate IT skilled staff due to the high demand for IT skills up to 2000. Current demand levels and the introduction of general retention strategies described above have contributed to improved retention of such staff. DSTO reports that total staff turnover in the past year, at less than 10 per cent, was less than the turnover rate in comparable private industry. DSTO indicated that the turnover rate for its IT staff varied according to the role of the IT personnel, being higher for the more generic IT functions and lower for research oriented IT personnel, averaging out at about the same level as for all DSTO staff.

Conclusion

4.22 ISD is restructuring its own area while being involved in, and affected by, the formation of National Operations Division for regional service delivery and market testing of Central Office IT functions. It had moved to engage PSPs to ensure continuity of operations during the period of recruiting and retention difficulties. However, it does not consider that it has a shortage of IT skills at present. The global downturn in IT has resulted in greater availability of the types of skilled IT professionals required. It is now seeking to increase staff numbers in a period of greater availability. During the restructure, there was no emphasis on workforce planning. The restructuring focused more on function and process than on the skills of the staff. Defence advise that its new organisational model focuses on strategic workforce planning processes. Within ISD, ISB has produced a framework for identifying and meeting training needs and has a HR Plan. These two initiatives do not extend to the whole of ISD.

4.23 The Intelligence and Security Group experienced difficulty in attracting and retaining skilled IT staff prior to 2000. The Group took a range of personnel initiatives to address the challenge of having sufficient skilled staff. Retention has improved over the last two years and is not now a pressing issue. The Group recognises that its strategies have yet to be tested in a high-demand market.

4.24 Similar to the experiences of other areas of Defence, the high demand for IT skills up to 2000 also caused difficulties for DSTO in retaining appropriate IT skilled staff. Current demand levels, and introduction of general retention strategies, have contributed to improved stability in the numbers of such staff.

5. Australian Defence Force

This chapter discusses the IT skilling issues that the ADF faces and the steps being taken to address the issues.

IT in the ADF

5.1 The ADF, which comprises the three Services, is in an unusual employment situation because it 'grows' a workforce from its recruits. The ADF requires IT skills at an operational level in the field. Employment categories that include IT skills therefore exist primarily in ranks other than officer ranks. Such skills are often intermixed with electro-technical skills.

5.2 There were only two identifiable IT related streams for officers: one in Army and the other in Air Force. Although Navy does not have an exclusive IT stream for officers, training in IT disciplines is available and is delivered as part of the Principal Warfare Officer training syllabus and the Communications and Information Systems Officer Course. There are 76 officers in this category.

5.3 The IT stream for Army officers is in the Royal Australian Signals Corps. In this group, IT is a secondary skill-set used to inform the officer's work, rather than being the primary skill-set of the work. Officer recruits in that Corps complete a bachelor's degree course in engineering or IT. This group consists of 330 officers, with 15 new recruits joining them in 2003.

5.4 The Air Force does not have a specific IT stream for officers. However, certain members within various employment groups may sub-specialise in IT. For example, Electronics Officers complete a bachelor's degree in either IT or engineering. As of April 2003, this category had 414 members. Due to the nature of their employment, some members may develop extensive IT skill-sets, but these are not specifically tracked. Air Force noted that an IT employment category for officers was considered a number of years ago, but this would not be feasible now as most IT staff are not Service personnel.

Trades in the ADF with an IT component

5.5 Table 2 presents data on ADF employment groups with an identified IT component, and the respective number of members. It indicates which trade groups are 'critical'.

5.6 Trades in which numbers are difficult to maintain may be tagged 'critical'. A number of IT related trades in the ADF have been identified as critical. However, not all critical trades are IT related. For instance, Defence has identified

a shortage of skilled people in electro-technical trades throughout Australia and is having difficulty recruiting and retaining personnel in those trades. Table 2 indicates that not all IT related trades are critical.

5.7 For Navy sailor ranks, 12 categories are regarded as critical, but only two of these are IT. For Army, eight critical trades have been identified for other ranks, four of these falling into the IT category. Air Force has two ‘employment categories of concern’ (refer paragraph 5.9 for explanation of this terminology)—Signals Operator and Communication Electronic Technician.

Table 2
Employment categories in the ADF with an IT component

Service	Category	Description	Establishment
Army	ECN 180	Technician Multimedia (Illustrator Reprographics)	47
	ECN 256*	Operator Command Support Systems	241
	ECN 266	Operator Specialist Communications	639
	ECN 273	Operator Electronic Warfare	207
	ECN 405*	Technician Telecommunications Systems	262
	ECN 419*	Technician Electronic Radar	23
	ECN 420*	Technician Electronic Telecommunications	118
	ECN 422	Technician Systems	111
Navy	ET*	Electronic Technician	1255
	ATV	Aviation Technician—Total trade	708
		—Avionics Stream	320
	CIS*	Communication Information Systems	697
Air Force	SIGSOP	Signals Operator	220
	Avionics	Avionics	1639
	CISCON	Communication Information Systems Controller	378
	CE Tech.	Communication Electronic Technician	563
	ELECTR.	Electronics—Officer	423

* denotes a critical trade.

ECN = Employment Category Number.

CIS is a newly formed category. See Paragraph 5.19.

Source: DFR.

5.8 The definition of ‘critical’ varies among the Services. Several factors are used to measure and rate trade status: current personnel asset, recruiting achievement, training capacity and separation rates. Navy regards a trade as critical if the target numbers cannot be achieved within five years, even with maximum training throughput. In Army, a critical trade category is one in which the current level of personnel and Army’s inability to recruit, train or retain personnel in the category significantly impacts on Army’s ability to deliver capability.

5.9 Air Force prefers to use the term ‘employment categories of concern’ as it sees all employment groups as ‘critical’ to achieving capability. These are determined to be of concern following a ‘Health Brief’, which considers recruiting, separation and training numbers. Categories are of concern if any of these factors, or a combination of them, adversely affect capability. Air Force considers it continues to meet capability demands despite the existence of employment categories of concern.

5.10 To assist in identifying critical trades, the Directorate of Defence Workforce Planning and Establishments (DWPE) develops five-year projections, by rank, of staffing requirement and expected numbers. See Appendix 1 for the DWPE projections for the critical trades with an IT component.

Recruiting

Defence Force Recruiting Organisation

5.11 The ADF begins the early stages of a member’s Service life with a cross-Service approach. Defence Force Recruiting (DFR) recruits for each of the three Services but has no involvement in setting required numbers.

5.12 DWPE uses modelling to determine proposed recruiting target numbers. The Services, including their category sponsors and career management agencies and DFR, are consulted on capacity, availability and recruitment strategy issues. The Board of Management for ADF recruiting then reviews the throughput plan, including demographics and funding. Through this liaison, personnel requirements can be managed to maximise training throughput and streamline training. The Services make the final determination of target numbers.

5.13 Defence recognises that recruitment for technical trades, such as IT, is highly competitive. In many cases the required aptitude and grades are comparable with university or ADF officer entry levels. Further, given the high recruiting standards, only one in four applicants is approved for these trades.

5.14 Table 3 sets out recruiting targets and achievements for ADF IT related trades in recent years. The Table indicates the difficulty for DFR in consistently achieving targets for technical trades. Small numbers in these trade groups mean that marginal shortfalls have a significant impact on the employment category’s sustainability.

Table 3**DFR Recruiting Targets and Achievements for Trades with an IT component**

Year	1999–00		2000–01		2001–02		2002–03	
Trade	Target	Achieved	Target	Achieved	Target	Achieved	Target	Achieved#
NAVY TOTAL	1330	744	1449	1142	1561	1397	1517	507
ET*–Electronic Technician	200	58	200	116	250	177	289	74
ATV–Aviation Technician	58	31	59	43	60	76	43	15
CIS*–Communication Information Systems	92	72	63	63	96	93	112	30
ARMY TOTAL	2188	1872	3083	2437	2361	2495	1892	798
ECN 180 –Technician Multimedia	N/A	N/A	9	6	6	5	0	0
ECN 256 * –Operator Command Support	20	26	55	79	47	58	50	19
ECN 266 –Operator Specialist Comms	77	61	105	70	97	114	70	32
ECN 273 –Operator Electronic Warfare	53	50	30	34	32	29	42	24
ECN 405* – Telecommunications Systems Technician	48	31	54	31	50	45	72	13
ECN 420* – Technician Electronic Telecommunications	32	18	2	1	14	11	53	2
AIR FORCE TOTAL	939	828	1049	987	1262	1181	N/A	408
SIGSOP–Signals Operator	30	23	28	15	40	42	61	22
Avionics	120	119	169	167	205	216	150	72
CISCON–Communication Information Systems Controller	33	32	40	40	56	53	33	18
CE Tech–Communication Electronic Technician	27	20	39	33	69	73	69	27

Part year only; results as at 9 December 2002

* - Indicates a critical trade.

ECN = Employment Category Number.

ECN 420 includes ECN 419 Technician Electronic Radar and ECN 422 Technician Electronic Systems.

Air Force data as at 1 December 2002.

Source: DFR.

Balanced recruiting

5.15 ‘Balanced recruiting’ aims to achieve particular category recruiting targets in an overall recruiting target and assists in achieving a balanced and functional

workforce. An unbalanced structure would adversely affect average funded strength, with complex ramifications.

5.16 The effect of unbalanced recruiting can be seen in a recent report by the Auditor General of Canada on recruitment and retention of military personnel.²⁷ The report stated that the Canadian Defence Force has a shortage of people with technical skills and that unbalanced recruiting has exacerbated the problem.²⁸ The report stated that, because of the ceiling on personnel and the limited number of recruits the Canadian Forces can accept, enrolling recruits into an overfilled occupation can be at the expense of an under-filled occupation.²⁹ Over-subscription of field engineers, communications researchers, cooks and stewards impacted on the numbers of dentists, doctors, land communications information system technicians, fire control system technicians and airfield engineers.³⁰ This demonstrates the importance of managing recruiting numbers in employment categories to provide a balanced workforce, thus ensuring maximum operability, and force readiness.

5.17 Defence recently outsourced recruiting functions for the ADF. A new organisation, Defence Force Recruiting (DFR), will include personnel from Defence and the contract agency. It is to be operational nationally from July 2003.

5.18 The ADF has developed strategies to manage recruiting targets in this outsourced arrangement. When Defence identifies critical trades, it intends to initiate research and then target critical trade recruiting, including the use of incentives.

Training

Joint Training

5.19 Training has long been a single-Service responsibility but this is changing because of a new focus on interoperability among the Services and standardisation of training. Defence opened a joint training facility for communication and information systems (CIS), known as the Defence Force School of Signals (DFSS), at Watsonia, Victoria in 2002. Managed by Army, it undertakes communications training for each of the three Services. Navy continues to undertake its CIS trade training at HMAS *Cerberus*, effectively as a

²⁷ Office of the Auditor General of Canada, *April 2002 Report*, Chapter 5 - National Defence, Recruitment and Retention of Military Personnel, <www.oag-bvg.gc.ca/dominio/reports.nsf/html/0205ce.html>(sourced 10 October 2002).

²⁸ *Ibid.*, 5.22–5.28.

²⁹ *ibid.*, 5.49.

³⁰ *ibid.*, 5.48.

second campus of the DFSS. Trades that are to be trained as a part of the DFSS initiative are:

- Navy CIS —Communication Information Systems
- Air Force CISCON—Communication Information Systems Controller
- Army ECN 346—Operator Bearer
- Army ECN 256—Operator Command Support System
- Army ECN 266—Radio Operator
- Army ECN 405—Electronic Technician.

5.20 Joint training is intended to promote standardisation of training across the Services. Defence also expects intangible benefits, such as improved Service interoperability.

Civilian accreditation

5.21 The Accenture study on the digital economy (see paragraph 1.25) stated that the opportunity to improve skills was an important retention and loyalty issue for IT personnel. Defence identified the same issue in IT related trades in the Army (see paragraph 5.46), as indicated in the *Army Critical Trades Survey Report*.³¹

5.22 Defence's accreditation as a Quality Endorsed Training Organisation (QETO) provides links to national standards and civilian competencies. Through joint training, these benefits can be reaped across the Services.

5.23 In the ADF, civilian accreditation assures members of the validity of their skills. As a QETO, Defence can issue nationally recognised qualifications. Army, as manager of the DFSS, combined with QETO status, can provide civilian accredited qualifications to communication trades across the ADF, and members are assured that their ADF skills are readily transferable and valid in the wider community. The opportunity for skills improvement, and the validity of these skills in the broader workforce, is a strategic retention initiative.

Navy CIS training

5.24 Formed in 1998, the CIS trade category combines the legacy trades of Radio Operator and Signalmen with a new skilling component that reflects the convergence of communications and information systems technologies. Navy planned alignment training to ensure that members have the additional skill-sets for the new trade. The training is being conducted at the Communications School at HMAS *Cerberus*.

³¹ DSPPR, *Army Critical Trades Survey Report*, DSPPR Research Report 17/2002 October 2002.

5.25 The skilling alignment of the two legacy trades was due for completion by December 2002 but this did not occur. Navy has increased class sizes to increase training throughput and, taking in to account natural attrition, expects to achieve alignment by December 2004.

5.26 Currently, Communication School classes at HMAS *Cerberus* are overfilled to cope with the training obligation arising from creation of the CIS trade. The School is running in excess of capacity to align training of the legacy trades and, concurrently, train new recruits directly into the CIS trade. Table 4 indicates HMAS *Cerberus*' Communication School capacity, current load and training requirement.

5.27 The required number to be trained at the intermediate level (Table 4) indicates the number of radio operators and signalmen yet to be trained. This group does not include new members to the trade who have completed their basic training and on-the-job competency logs (140 members as at 19 December 2002). New members must compete with signalmen and radio operators for positions in the intermediate class. Selection for these positions is aptitude-based.

Table 4

CIS School Training Load and Obligation (no. of personnel)

	Training Capacity	Current No. being trained	Required No. to be trained
Basic Training	96	112	144
Intermediate (4 months)	64	60 #	115
Advanced (4 months)	16	20	All senior sailors have been aligned (see paragraph 5.24).

–66 positions proposed for 2003, increasing to 72 for 2004.

Source: Communication School, HMAS *Cerberus*.

5.28 A substantial training demand, such as that which arose on creation of the CIS trade, has implications for operability, as a substantial number of members are unavailable for postings due to training obligations. Any new skilling requirement needs to be carefully managed, to minimise downtime in bringing new skills online, and to avoid overcrowding in training centres.

Back-skilling

5.29 The ADF regularly upgrades its operating systems to remain current with technology. On occasions, these systems are brought online prior to training being provided. The relevant training centre is subsequently required to up-skill ADF members to the new requirement. This is called 'back-skilling'. A new skilling requirement could result from a range of causes: a new capability; a system upgrade; or through other circumstances, such as with the CIS trade.

5.30 Back-skilling is problematic for training institutions, due to the short time scales involved. The problem is accentuated if a need for training is not fully recognised in planning for a new requirement. This can result in the training package being incomplete when the system is brought online, with adverse effects on the entire training schedule. The training package, and the ability for the centre to provide the training, needs to be confirmed prior to implementation of a new requirement.

Recommendation No.3

5.31 The ANAO recommends that Defence implement a suitable process to ensure that the need for training in a new or changed IT skilling requirement is recognised when planning for the requirement and is given due priority.

Defence response

5.32 Agreed. Whole of life costing is a concept being applied to major capital in Defence and it is appropriate to apply this principle to IT projects.

Training validation

5.33 Across the ADF a standard validation system is used to test and adapt training. The system is designed to ensure flexibility in the training regime and the continuing validation and adaptation of training to workforce need. The goal of this system is to verify that training is suitable and appropriately timed to the needs of the workplace. Validation involves surveying ex-trainees and their supervisors to ensure training was appropriate, and that the members demonstrate application of the skills learnt.

5.34 An initiative of the Services has been the joint sponsoring of an Occupational Analysis (OA) of the CIS, Electronic Warfare and Aviation streams. Each of those streams has a significant stake in IT skills. An OA review tests skill-sets and their validity to the workplace. The Directorate of Strategic Personnel Planning and Research (DSPPR) will undertake the OA. The OA will provide transparency of workplace skill-sets, which will then be compared with trade training to ensure training is appropriate and timely. Defence also expects the OA to contribute to strategic workforce planning. Results of the OA are expected in May and August 2003.

5.35 Such an analysis of skilling requirements is particularly relevant to IT trades, an environment subject to rapid technological change. The analysis will feed back into the DFSS to facilitate appropriate training. Appropriateness of training verifies that skills learnt are relevant to the workplace, and that member expectations of workplace skills are realistic and current, an important retention issue.

5.36 The ADF expects that results of the OA will demonstrate that a trade structure review of the three streams is required, noting that there is a separate, formal industrial process under the guidance of the tri-Service Employment Category Review Committee, which operates on a five-year rotating program. Such a review would update trade-required skill-sets to ensure skill currency. Because the latest review of that kind was conducted in 1998, there is a perceived need to revise the skill-sets.

Retention

Industry context

5.37 Retention of personnel in IT related trades is particularly problematic because of competition from industry. However, the ADF recognises that retention of such personnel is less of a problem than it was three years ago. This is attributed to the downturn in the IT industry globally since the 'Dot Com downfall', and the excess of IT trained people in the employment marketplace since Y2K. However, retention is still a problem because of other influences.

5.38 A recent ANAO report followed up an earlier report on retention of military personnel. In its conclusion to the follow-up report, the ANAO made the following general comments:

The separation rate for the ADF in 2001–02 was 11.43 per cent from a full-time force of some 51 400 members. This was the lowest rate for nearly five years. ...Defence has previously acknowledged that identified retention problems relate to specific combinations of trade, rank, location and Service. ...

The Government's Defence White Paper, in 2000, stated that Defence will use retention to shape its future workforce and that this would require a sophisticated approach that identifies the experience profile needed and then active management to achieve that profile. To give effect to this approach, Defence stated in May 2002 that, in 2002–03, it would begin implementing the Defence People Plan, which would provide vision and strategic guidance for Defence personnel policies, and specifically target recruitment and retention issues. The Plan has not yet been approved for implementation and is to be considered by the Defence People Committee in 2003. When implemented, the Plan should assist in resolving issues raised in the original audit report. ...

In recent years, several reviews have highlighted the need for Defence to reform its personnel management. In response to these reviews, Defence has implemented a range of strategic personnel initiatives that target retention. The number of reviews that have raised retention as a matter to be addressed indicates a continuing need for Defence to prioritise efforts in this area.³²

³² Audit Report No.31 2002–03 *Retention of Military Personnel—Follow-up audit* (tabled 5 March 2003).

5.39 As indicated at paragraph 1.14, the Defence People Plan has not yet been implemented. The reviews mentioned above are summarised in Appendix 1 to the ANAO report.

Demographic Issues

5.40 Retention of young personnel is a particular issue for the ADF. Many young members complete their Initial Period of Service, typically six years for technical trades, and then leave the ADF to seek employment in private industry. Thomas Schindlmayr, of the Demography Program of The Australian National University, related the ADF's retention problem to the '30 Syndrome', which concerns a change in community attitudes to work, with individuals taking responsibility for managing their own career, and changing employers to suit their needs.³³ The ANAO sees the flexible and dynamic nature of the IT environment as accentuating this attitudinal change. This situation creates difficulty for the ADF in 'growing' a workforce for the higher ranks, particularly in high demand fields such as IT.

Table 5

The Ten Strongest Reasons for Leaving the ADF For Respondents with 6–10 Years' Service

Reason for Leaving	Rank 2000	Rank 2001
To make a career change while young enough	1	1
Better career prospects in civilian life	2	2
Lack of job satisfaction	3	3
Low morale in my work environment	8	4
Little reward for what would be considered overtime	4	5
In the civilian workforce		
Lack of control over life	11	6
Desire for less separation from family	5	7
A desire for more challenging work	7	8
Insufficient opportunities for career development	6	9
Desire to stay in one place	9	10

Source: *Australian Defence Force Exit Survey Report*, June 2002.

5.41 An internal report cited the primary reason for leaving the ADF, among personnel with 6–10 years of service, in 2000 and 2001 was 'to make a career

³³ Schindlmayr, Thomas, *HR Monthly*, '30 Not Out', November 2002, pp. 45–46.

change while young enough'.³⁴ See Table 5. This information is useful when considering another internal report regarding retention issues.³⁵ The report included 'The Top 15 Most Important Personnel Initiatives for the ADF'. See Table 6.

5.42 Tables 5 and 6 indicate that a range of issues interplay in discussions of retention and separation. The issues can be categorised as 'push' and 'pull' factors. 'Push' factors are influences, such as job dissatisfaction, that push Service personnel to leave the ADF. Conversely, 'pull' factors are those external influences that pull Service personnel into other employment; for example, remuneration in industry. Thus an analysis of both push and pull factors is required in management of critical trades.

Table 6

The Top 15 Most Important Personnel Initiatives for the ADF

Rank	Item	Mean Importance Rating
1	Better equipment to perform your operational duties.	4.21
2	How important is the geographic location of your posting to you?	4.11
3	Knowing your expected geographical location for the next five years.	4.11
4	More equipment to perform your operational duties.	4.04
5	Knowing your long-term career plan.	4.02
6	Pay Increase to compensate for longer working hours.	3.97
7	More effective administrative support.	3.96
8	Remote locality leave and travel entitlements.	3.92
9	Equitable access to subsidised accommodation regardless of family status.	3.9
10	Greater locational stability when dependants are in senior school.	3.89
11	Equal treatment for members with and members without dependants in terms of access to leave and travel.	3.85
12	Housing allocation based on need rather than rank.	3.82
13	An increase in personal time for family and lifestyle issues.	3.82
14	The ability to take leave when desired.	3.8
15	Additional remuneration for postings in remote locations.	3.77

Rating: 1 equals 'Not at all Important'
5 equals 'Extremely Important'.

Source: DSPPR Research Report 10/2002.

³⁴ DSPPR, *Australian Defence Force Exit Survey Report—Reasons for Leaving*, DSPPR Research Report 4/2002, June 2002, p. 15.

³⁵ DSPPR, *An Analysis of the Topical Issue Section of 'Your Say' Survey, November 2001*, DSPPR Research Report 10/2002, May 2002.

Outsourcing / civilianisation

Outsourcing and retention

5.43 In discussions with the ANAO, Service personnel indicated that they felt that outsourcing and civilianisation of former ADF positions was to the detriment of the ADF. These negative views on outsourcing arose from concerns about maintenance of skills, lack of job satisfaction, access to equipment-specific training, workplace boredom and implications for operability.

5.44 Service personnel commonly suggested outsourcing as a driving factor for separation. Tables 5 and 7 indicate some correlation between arguments advanced against outsourcing, and retention initiatives and separation issues.

5.45 Outsourcing was also linked to concerns about remuneration. In mixed outsourced/civilian work environments in Defence, ADF members observe contractors and civilians performing duties similar to their own, on a different pay scale, and this raises issues regarding comparative remuneration. Outsourcing and civilianisation can thus be causally linked to members' concerns about pay scales and conditions, which are factors affecting separation.

Outsourcing and IT

5.46 Changes in work environment and duties caused by outsourcing and civilianisation are anecdotally linked to issues such as low morale, job satisfaction and perceptions of career prospects in industry. This is supported by a DSPPR report, *Army Critical Trades Survey Report*.³⁶ Table 7, derived from that report, indicates retention issues for two critical trades in Army with an IT component. Navy has also identified that, whether civilian contractors are available to work in an operational theatre and the lack of sufficient opportunities for CIS category personnel to maintain skills while posted ashore, as issues of concern.

5.47 IT related trades are particularly affected by outsourcing as they commonly have a maintenance role. This effect can be seen in Table 7: the top retention issues for two critical trades in Army with an IT component. The top retention issue for ECN 256 members was 'greater opportunities to maintain trade skills when in barracks'.³⁷ Other issues concerned improved ongoing trade training opportunities, a greater in-barracks role, and less civilianisation. ECN 405 members were also concerned about improved training, but remuneration comparable with that in civilian employment was rated as the top retention issue.

³⁶ DSPPR *Army Critical Trades Survey Report*, DSPPR Research Report 17/2002, October 2002.

³⁷ *Ibid.*, p. 26.

Table 7**Retention Issues for Army's employment categories ECN 256 and ECN 405**

	Top Ten Retention Issues for ECN 256 –Operator Command Support System	Top Ten Retention Issues for ECN 405 –Technician Telecommunication Systems
1	Greater opportunities to maintain trade skills when in barracks	Pay levels in trade be comparable to what you could be earning in civilian employment, given your qualifications and experience
2	Improved ongoing advanced trade training opportunities (eg. more internal and external training)	Improved ongoing advanced trade training opportunities (eg. more internal and external training)
3	Improved civilian recognition of trade qualification	Improved civilian recognition of trade qualification
4	A greater in-barrack trade role for my ECN	For Darwin—Increased remote locality leave travel allowance
5	Less civilianisation of trade role / functions	Pay levels across all trades be related to the levels of training received
6	Pay levels in trade be comparable to what you could be earning in civilian employment, given your qualifications and experience	More up-to-date trade tools / equipment
7	More up-to-date trade tools / equipment	Individual posting preferences having more influence
8	More interesting or trade relevant work	Better trade tools / equipment
9	Better trade tools / equipment	Higher allowances for living in Darwin
10	Higher allowances for living in Darwin	More overseas deployment opportunities in my trade

ECN = Employment Category Number.

Source: DSPPR Research Report 17/2002, October 2002.

Outsourcing equipment maintenance

5.48 Outsourcing by the ADF may include a maintenance role by equipment suppliers. For example, the role of ECN 420-Technician Electronic Telecommunications was reduced when the RAVEN Telecommunications System was brought on line. ECN 420 is typically responsible for maintenance of electronic telecommunication systems, but the supplier of the RAVEN system has undertaken this role with respect to that system. This has left trained ADF technicians with what they describe as a role of 'tagging and bagging' faulty components for repair by the supplier.

5.49 Providing for Defence personnel to assist in maintaining outsourced IT systems could help ensure that in-house personnel maintain skills needed to support field operability (where contract staff may not be available). It could also help in countering adverse factors that some personnel associate with outsourcing and civilianisation in the ADF. Such factors relate to low morale, uninteresting work, inadequate training and reduced scope for advancement. It is recognised that contract negotiation is a complex process that considers

competing issues such as warranties, use of modular, commercial off-the-shelf systems and access to advanced skills, but retaining operational skills is also a factor that needs to be considered.

Recommendation No.4

5.50 The ANAO recommends that Defence, when negotiating contracts involving provision of IT systems, seek to ensure that Defence personnel have a role in maintaining those systems, thereby helping to maintain appropriate in-house IT skills, particularly where they may be needed in an operational environment.

Defence response

5.51 Agreed. Defence acknowledges systems/application specific skills are a necessary part of operational support requirements.

Conclusion

5.52 The ADF is in an unusual employment situation because it 'grows' a workforce from its recruits. Defence monitors ADF employment categories, earmarking any vulnerable groups as 'critical'. These are subject to particular attention by workforce planners. Six of the 15 trades in the ADF with an IT component are rated as critical.

5.53 In the ADF, although some IT specialisations were identified in the officer ranks, IT is considered a secondary skill-set, used to inform officers' work, rather than being the primary focus of their work. The main focus for IT is the IT related trades in the other ranks.

5.54 The ADF has difficulty recruiting sufficient members to technical trades that have an IT component. The entry-levels for these technical trades are high, where the ADF is competing with university and ADF officer entry.

5.55 Staff retention is problematic for ADF technical trades, such as IT. Internal studies have shown that there is no single factor that influences staff to leave the ADF. The studies have identified a range of influences on separation. Defence is attempting to measure the relative impact of these influences as a component of workforce planning.

6. Management Strategies

This chapter summarises individual Defence Groups' strategies and initiatives that attempt to address problems of attracting and retaining appropriately skilled IT, and other, personnel. Many of these strategies are still in the developmental stages and yet to be implemented and tested.

Defence workforce planning

6.1 Defence Personnel Executive (DPE) is preparing a new Defence Workforce Plan (DWP) to replace the plan dated February 2002 (see paragraph 1.12). To help this, submissions have been sought from all Groups in Defence. The ADF response includes Service-specific submissions that include strategies for managing critical trades. Release of the DWP has been delayed from February to June 2003, in part to accommodate findings and recommendations of the report of the Defence Strategic Workforce Planning Review. Defence expects the report to have a major impact in shaping the DWP on a total workforce basis and in improving decision-support projections, risk analysis and solutions.

Human Resource Decision Support System

6.2 Notable among Defence initiatives to assist in Defence workforce planning, and managing critical trades, is the Human Resource Decision Support System (HR DSS), which has been developed in collaboration with an outside agency and DSPPR. Adapted from a marketing environment to the field of human resources, the HR DSS utilises survey information to model workforce trends against changes, both internally and externally.

6.3 HR DSS has already been used to assist in workforce decisions regarding Air Force pilots. A survey of pilots provided a range of conditions of service and industry scenarios. Pilots stated their expected term of service, based on these conditions. From this was created a system to predict workforce behaviour against a range of variables. For example, separation rates for Air Force pilots above the rank of Flight Lieutenant can be predicted in a period of strong industry demand for such pilots. Internal factors can then be brought to bear to indicate changes that could be made to reduce the separation rate, for example, pay rises, retention bonuses and increasing flying hours.

6.4 DSPPR has stated that it will extend the use of the HR DSS to critical trades. Defence expects to measure the influence of different initiatives and provide transparency in its decision-making.

Training initiatives

Joint training

6.5 The DFSS (paragraph 5.19) is a major initiative contributing to interoperability among the Services. Intermingling of Service personnel in a training environment can provide valuable insight into, and understanding of, Service specific operational issues. As such, the joint school is expected to enhance interoperability and ADF solidarity.

Civilian accreditation

6.6 Standardisation of training is given potency by Defence's accreditation as a Quality Endorsed Training Organisation (QETO) (paragraph 5.22), enabling it to self-manage training accreditation and issue nationally-recognised qualifications. A QETO provides links to National standards and civilian competencies. Through Joint Training, these benefits can be reaped across the Services.

6.7 Standardisation of training, particularly to civilian competencies, provides members with assurance of skill currency and relevance in the civilian workforce. Skill currency and training are important retention incentives, particularly in IT employment categories. Establishment of the DFSS can thus help as a retention initiative.

6.8 The Accenture industry study (paragraph 1.25) indicated that an important retention and loyalty issue for IT personnel was currency and validity of skills. The same situation applies for the ADF, as indicated in *Army Critical Trades Survey Report*,³⁸ and the retention issues for Army's employment categories ECN 256 and ECN 405. Thus, civilian accreditation contributes to retention in the ADF if members are confident of the validity of their skills.

Occupational analysis and trade structure review

6.9 The Occupational Analysis (OA) of the CIS, Electronic Warfare and Aviation streams (paragraph 5.34) should assure the ADF members concerned of the validity of their skill-sets to the workplace. The OA can be seen as a strategic effort to align members' expectations with workplace need, potentially contributing to improved retention.

6.10 After the OA, a trade structure review is expected (paragraph 5.36). The need for such a review is particularly pressing, given the critical status of many IT trades in Defence. The OA, together with a trade structure review, would be

³⁸ DSPPR Research Report 17/2002 October 2002.

significant in assuring ADF members of skill currency. Thus the OA and the review can be seen as strategic initiatives for IT members.

Career management and remuneration

6.11 The Career Management Policy area in DPE and the single Service career management areas endeavour to produce people-friendly policies. They aim to improve work conditions and make Defence a more attractive employer. Retention is a spin-off effect of such policies. Policies are not trade-specific but serve as an indirect mode of improving retention in IT trades.

6.12 Defence has established a Directorate of Retention Policy in DPE to develop policies, processes and procedures to minimise the separation of members of all components of the ADF and civilian personnel.

Defence Force Remuneration Tribunal

6.13 The three Services have technical trades pay cases due to be reviewed by the Defence Force Remuneration Tribunal. This is part of a broader drive by the ADF to better align wages with the high level of skills and training required in technical employment groups.

Tracking and recording IT skills and specialisations

6.14 The Defence-wide personnel management system, PMKeyS, is still experiencing implementation problems. Because of this, some personnel are reluctant to use it. There are also concerns about its data integrity, but much of this can be attributed to inconsistencies in data from numerous legacy systems. DPE is taking action to improve data quality.

6.15 PMKeyS has a field to record personnel competencies and a sub-field to record proficiencies to create a structured system to record training. This functionality was the last module to be developed, and was not included in the initial PMKeyS training package. As a result, personnel received no training on this functionality and are reluctant to use it. Local databases are being developed to try to obtain the required functionality.

6.16 The scant information available on competencies and proficiencies creates difficulty in tracking and recording these aspects of the workforce. The problem is accentuated in the IT environment, due to reliance on competency-based employment.

6.17 The structured nature of ADF training, and its link with remuneration, provides a framework that is readily transferable to a tiered pay-based system

to record training. The framework has eased the ADF's transition to the competency functionality of PMKeyS. By contrast, the civilian workforce in Defence, having an unstructured training approach, is having difficulty in fully utilising this function.

6.18 Currently, PMKeyS is not used to record the employment of outside contractors. Input of this information seems to have been overlooked, and there is little or no transparency of the use of contractors, especially in filling vacant positions.

6.19 There is also inadequate visibility of contractors, due to the contractual arrangement. In some areas, such as DMO and I&S Group, companies are contracted to provide a service, and the actual number of their personnel involved is immaterial. This creates complexity in determining the number of vacant positions and skill gaps in the Defence workforce.

6.20 To ensure maximum operability and avoid stovepipe systems, personnel systems need to be aligned with PMKeyS.

Defence response

6.21 The report acknowledges that PMKeyS has untapped capability. Defence would support improved and more comprehensive use of PMKeyS, not only in relation to the broad workforce data, but also in relation to skills/capabilities/competencies of individual staff. Having that data available combined with the position profiling exercise currently under way in Defence would assist greatly efforts to plan the Defence workforce. The collection of competency data for civilian staff would need to be supported by adequate departmental policy, noting that previous attempts to collect such data have had limited success.

Measuring the Defence workforce

Exit surveys

6.22 The ANAO's 2000 report on retention of military personnel recommended that Defence develop and implement a system for ensuring that it has a good understanding of the key factors that motivate ADF members to remain in the Services in the short and long terms and a sound ongoing knowledge of members' view of those factors.³⁹

6.23 To address this recommendation, Defence conducts Attitude Surveys and Exit Surveys. Exit Surveys have been conducted in the ADF for the past three years, and are scheduled for the civilian workforce in 2003. DSPPR noted that

³⁹ Audit Report No.35 1999–2000 *Retention of Military Personnel*, Recommendation No.8, paragraph 5.25.

Exit Surveys and Attitude Surveys returned comparable responses, verifying the accuracy of the information.

6.24 The Defence Committee recognises the value of Attitude Surveys, which are permanently on the agenda for DSPPR. ‘Your Say’ surveys also provide insights into perceptions and beliefs of ADF and civilian personnel on a range of issues such as leadership capabilities of senior officers and leaders.

6.25 Return rates for Exit Surveys are low, at about 30 per cent, although DSPPR considers this a good return rate. Due to the low return rates, and the subsequently small sample, surveys are conducted only on larger occupational groups.

Employer of choice

6.26 A study of employment in Australia was conducted in 2000–01 to produce a listing entitled *Employer of Choice*.⁴⁰ The study investigated the methodology of people practices to determine an employer of choice, by industry classification.

6.27 Defence has used the study findings to analyse and compare its own people practices. The framework was used to update the *Environmental Scan 2020*. The update, *ADF Personnel Triangle Scan Update* is due for release shortly.

Defence Census 2003

6.28 The next Defence Census, in 2003, will seek to quantify the demographics of the Defence workforce. This data can be compared with data from the previous Defence Census in 1999. The comparison will aid Defence personnel management in setting strategies to recruit and retain skilled personnel.

Conclusion

6.29 In the absence of an overall workforce strategy or plan, individual Defence Groups have undertaken a range of initiatives as part of their separate strategies that attempt to address problems of attracting and retaining appropriately skilled IT personnel. Many of these strategies are still in the developmental stages and yet to be implemented and tested.

⁴⁰ Hewitt, *Employer of Choice*, <www.hewittasia.com/hewitt/ap/e-news/pno1/aus_1.htm> (sourced 19 January 2003).

6.30 Defence is considering the report of its Defence Strategic Workforce Planning Review. It expects the report to have a major impact in shaping the new Defence Workforce Plan on a total workforce basis and in improving decision-support projections, risk analysis and solutions.

Canberra ACT
25 June 2003



Oliver Winder
Acting Auditor-General

Appendices

Appendix 1

Projections for Critical Trades with an IT component

Positions versus Asset—Projections for Critical Trades

These tables show DWPE's projections of the number of ADF members expected (asset) compared with the number of positions required for a particular rank.

Army

ECN 256—Operator Command Support Systems

		PTE	LCPL	CPL	SGT	WO2	WO1	TOTAL
Positions required		94	13	90	50	28	6	281
Asset	2002–03	122	13	40	32	20	6	233
	2003–04	130	13	45	31	22	6	247
	2004–05	134	13	50	32	23	6	258
	2005–06	131	13	53	35	24	6	262
	2006–07	132	13	52	38	26	6	267
Separation Rate		18.78%	22.18%	22.58%	21.67%	20.82%	25.62%	19.72%

ECN 405—Technician Telecommunications Systems

		PTE	LCPL	CPL	SGT	WO2	WO1	TOTAL
Positions required		116	13	115	73	46	13	376
Asset	2002–03	102	13	62	51	41	13	282
	2003–04	91	13	58	47	44	13	266
	2004–05	116	13	54	42	46	13	284
	2005–06	144	13	59	39	45	13	313
	2006–07	159	13	69	39	44	13	337
Separation Rate		16.60%	19.92%	19.39%	12.08%	16.46%	35.22%	17.13%

ECN 420—Technician Electronic Telecommunications

		PTE	LCPL	CPL	SGT	TOTAL
Positions required		45	5	36	21	107
Asset	2002–03	25	5	28	21	79
	2003–04	9	5	22	21	57
	2004–05	10	2	17	20	49
	2005–06	40	3	12	19	74
	2006–07	52	5	15	16	88
Separation Rate		12.61%	15.98%	14.27%	9.98%	12.73%

ECN 419—Technician Elect. Radar

		PTE	LCPL	CPL	SGT	TOTAL
Positions required		11	0	11	7	29
Asset	2002–03	6	0	7	12	25
	2003–04	8	0	9	8	25
	2004–05	9	0	8	7	24
	2005–06	9	0	8	7	24
	2006–07	11	0	9	7	27
Separation Rate		7.41%	37.14%	6.53%	3.49%	7.32%

Notes:

ECN—Employment Category Number

PTE—Private LCPL—Lance Corporal

CPL—Corporal SGT—Sergeant

WO2—Warrant Officer Class 2.

Positions are February 2004 end–state.

Positions include a pro–rata share of non–trade positions, which each trade are required to fill.

Asset is as at end June.

Separation rate is three year average (1998–99 to 2000–01).

Data is for full–time Army only.

Navy

Communication Information Systems—CIS

Rank Yr	AB Req.	AB Asset	LS Req.	LS Asset	PO Req.	PO Asset	CPO Req.	CPO Asset	WO Req.	WO Asset
2002–03	346	257	174	174	103	91	59	56	14	16
2003–04	346	270	191	186	103	91	59	59	14	13
2004–05	346	286	191	191	103	94	59	58	14	13
2005–06	346	292	191	191	103	97	59	58	14	13
2006–07	346	297	191	191	103	98	59	59	14	13
2007–08	345	302	191	190	103	101	59	59	14	13
Separation Rate	12.10%		13.00%		6.70%		17.60%		22.70%	

Electronic Technician—ET

Rank Yr	AB Req.	AB Asset	LS Req.	LS Asset	PO Req.	PO Asset	CPO Req.	CPO Asset	WO Req.	WO Asset
2002–03	497	305	413	369	200	172	138	138	25	27
2003–04	497	342	416	344	200	164	138	136	26	25
2004–05	497	442	427	333	200	156	138	132	26	26
2005–06	497	519	425	347	200	148	138	128	26	25
2006–07	497	550	425	375	200	144	138	123	26	25
Separation Rate	11.3%		15.6%		11.7%		12.8%		28.9%	

Notes:

AB—Able seaman LS—Leading Seaman
 PO—Petty Officer CPO—Chief Petty Officer
 WO—Warrant Officer.

Source for all tables in this Appendix: DWPE.

Appendix 2

Previous Performance Audits in Defence

Set out below are the titles of the ANAO's previous performance audit reports on Defence tabled in the Parliament in the last five financial years.

Audit Report No.2 1998–99 Commercial Support Program

Audit Report No.17 1998–99 Acquisition of Aerospace Simulators

Audit Report No.41 1998–99 General Service Vehicle Fleet

Audit Report No.44 1998–99 Naval Aviation Force

Audit Report No.46 1998–99 Redress of Grievances in the Australian Defence Force

Audit Report No.13 1999–2000 Management of Major Equipment Acquisition Projects

Audit Report No.26 1999–2000 Army Individual Readiness Notice

Audit Report No.35 1999–2000 Retention of Military Personnel

Audit Report No.37 1999–2000 Defence Estate Project Delivery

Audit Report No.40 1999–2000 Tactical Fighter Operations

Audit Report No.41 1999–2000 Commonwealth Emergency Management Arrangements

Audit Report No.45 1999–2000 Commonwealth Foreign Exchange Risk Management Practices

Audit Report No.50 1999–2000 Management Audit Branch—follow-up

Audit Report No.3 2000–2001 Environmental Management of Commonwealth Land—follow-up

Audit Report No.8 2000–2001 Amphibious Transport Ship Project

Audit Report No.11 2000–2001 Knowledge System Equipment Acquisition Projects in Defence

Audit Report No.22 2000–2001 Fraud Control in Defence

Audit Report No.26 2000–2001 Defence Estate Facilities Operations

Audit Report No.32 2000–2001 Defence Cooperation Program

Audit Report No.33 2000–2001 Australian Defence Force Reserves

Audit Report No.41 2000–2001 Causes and Consequences of Personnel Postings in the ADF

Audit Report No.51 2000–2001 Australian Defence Force Health Services—follow-up

Audit Report No.16 2001–2002 Defence Reform Program—Management and Outcomes

Audit Report No.24 2001–2002 Status Reporting of Major Defence Equipment Projects

Audit Report No.30 2001–2002 Test and Evaluation of Major Defence Equipment Acquisitions

Audit Report No.38 2001–2002 Management of ADF Deployments to East Timor

Audit Report No.44 2001–2002 Australian Defence Force Fuel Management

Audit Report No.58 2001–2002 Defence Property Management

Audit Report No.3 2002–2003 Facilities Management at HMAS Cerberus

Audit Report No.30 2002–2003 Defence Ordnance Safety and Suitability for Service

Audit Report No.31 2002–2003 Retention of Military Personnel—follow-up

Audit Report No.39 2002–2003 Navy Operational Readiness

Audit Report No.46 2002–2003 Australian Industry Involvement Program

Audit Report No.51 2002–2003 Defence Housing and Relocation Services.

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Series Titles

Audit Report No.1 Performance Audit
Information Technology at the Department of Health and Ageing
Department of Health and Ageing

Audit Report No.2 Performance Audit
Grants Management
Aboriginal and Torres Strait Islander Commission

Audit Report No.3 Performance Audit
Facilities Management at HMAS Cerberus
Department of Defence

Audit Report No.4 Audit Activity Report
Audit Activity Report: January to June 2002
Summary of Outcomes

Audit Report No.5 Performance Audit
The Strategic Partnership Agreement between the Department of Health and Ageing and the Health Insurance Commission
Department of Health and Ageing and the Health Insurance Commission

Audit Report No.6 Performance Audit
Fraud Control Arrangements in the Department of Veterans' Affairs

Audit Report No.7 Performance Audit
Client Service in the Child Support Agency Follow-up Audit
Department of Family and Community Services

Audit Report No.8 Business Support Process Audit
The Senate Order for Department and Agency Contracts (September 2002)

Audit Report No.9 Performance Audit
Centrelink's Balanced Scorecard

Audit Report No.10 Performance Audit
Management of International Financial Commitments
Department of the Treasury

Audit Report No.11 Performance Audit
Medicare Customer Service Delivery
Health Insurance Commission

Audit Report No.12 Performance Audit
Management of the Innovation Investment Fund Program
Department of Industry, Tourism and Resources
Industry Research and Development Board

Audit Report No.13 Information Support Services
Benchmarking the Internal Audit Function Follow-on Report

- Audit Report No.14 Performance Audit
Health Group IT Outsourcing Tender Process
Department of Finance and Administration
- Audit Report No.15 Performance Audit
The Aboriginal and Torres Strait Islander Health Program Follow-up Audit
Department of Health and Ageing
- Audit Report No.16 Business Support Process Audit
The Administration of Grants (Post-Approval) in Small to Medium Organisations
- Audit Report No.17 Performance Audit
Age Pension Entitlements
Department of Family and Community Services
Centrelink
- Audit Report No.18 Business Support Process Audit
Management of Trust Monies
- Audit Report No.19 Performance Audit
The Australian Taxation Office's Management of its Relationship with Tax Practitioners
Australian Taxation Office
- Audit Report No.20 Performance Audit
Employee Entitlements Support Schemes
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- Audit Report No.21 Performance Audit
Performance Information in the Australian Health Care Agreements
Department of Health and Ageing
- Audit Report No.22 Business Support Process Audit
*Payment of Accounts and Goods and Services Tax Administration
in Small Commonwealth Agencies*
- Audit Report No.23 Protective Security Audit
Physical Security Arrangements in Commonwealth Agencies
- Audit Report No.24 Performance Audit
Energy Efficiency in Commonwealth Operations—Follow-up Audit
- Audit Report No.25 Financial Statement Audit
*Audits of the Financial Statements of Commonwealth Entities
for the Period Ended 30 June 2002*
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- Audit Report No.26 Performance Audit
Aviation Security in Australia
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- Audit Report No.27 Performance Audit
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Audit Report No.28 Performance Audit
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Audit Report No.30 Performance Audit
Defence Ordnance Safety and Suitability for Service
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Audit Report No.31 Performance Audit
Retention of Military Personnel Follow-up Audit
Department of Defence

Audit Report No.32 Business Support Process Audit
The Senate Order for Departmental and Agency Contracts (Spring 2002 Compliance)

Audit Report No.33 Performance Audit
Management of e-Business in the Department of Education, Science and Training

Audit Report No.34 Performance Audit
Pest and Disease Emergency Management Follow-up Audit
Department of Agriculture, Fisheries and Forestry—Australia

Audit Report No.35 Performance Audit
Fraud Control Arrangements in the Australian Customs Service

Audit Report No.36 Performance Audit
Monitoring of Industry Development Commitments under the IT Outsourcing Initiative
Department of Communications, Information Technology and the Arts

Audit Report No.37 Performance Audit
Passport Services
Department of Foreign Affairs and Trade

Audit Report No.38 Performance Audit
Referrals, Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999

Audit Report No.39 Performance Audit
Navy Operational Readiness
Department of Defence

Audit Report No.40 Performance Audit
R & D Tax Concession
Department of Industry, Tourism and Resources, the Industry Research and Development Board and the Australian Taxation Office

Audit Report No.41 Performance Audit
Annual Reporting on Ecologically Sustainable Development

Audit Report No.42 Performance Audit
Managing Residential Aged Care Accreditation
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Audit Report No.43 Performance Audit
The Sale of Sydney (Kingsford Smith) Airport

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Review of the Parenting Payment Single Program
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Reporting of Financial Statements and Audit Reports in Annual Reports

Audit Report No.46 Performance Audit
Australian Industry Involvement Program
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Audit Report No.47 Performance Audit
Implementation and Management of the Indigenous Employment Policy
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Audit Report No.48 Performance Audit
Indigenous Land Corporation—Operations and Performance Follow-up Audit
Department of Immigration and Multicultural and Indigenous Affairs

Audit Report No.49 Performance Audit
Management of the Navigation Aids Network
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Audit Report No.50 Information Support Services
Managing People for Business Outcomes, Year Two
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Audit Report No.51 Performance Audit
Defence Housing and Relocation Services
Department of Defence

Audit Report No.52 Performance Audit
Absence Management in the Australian Public Service

Audit Report No.53 Performance Audit
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