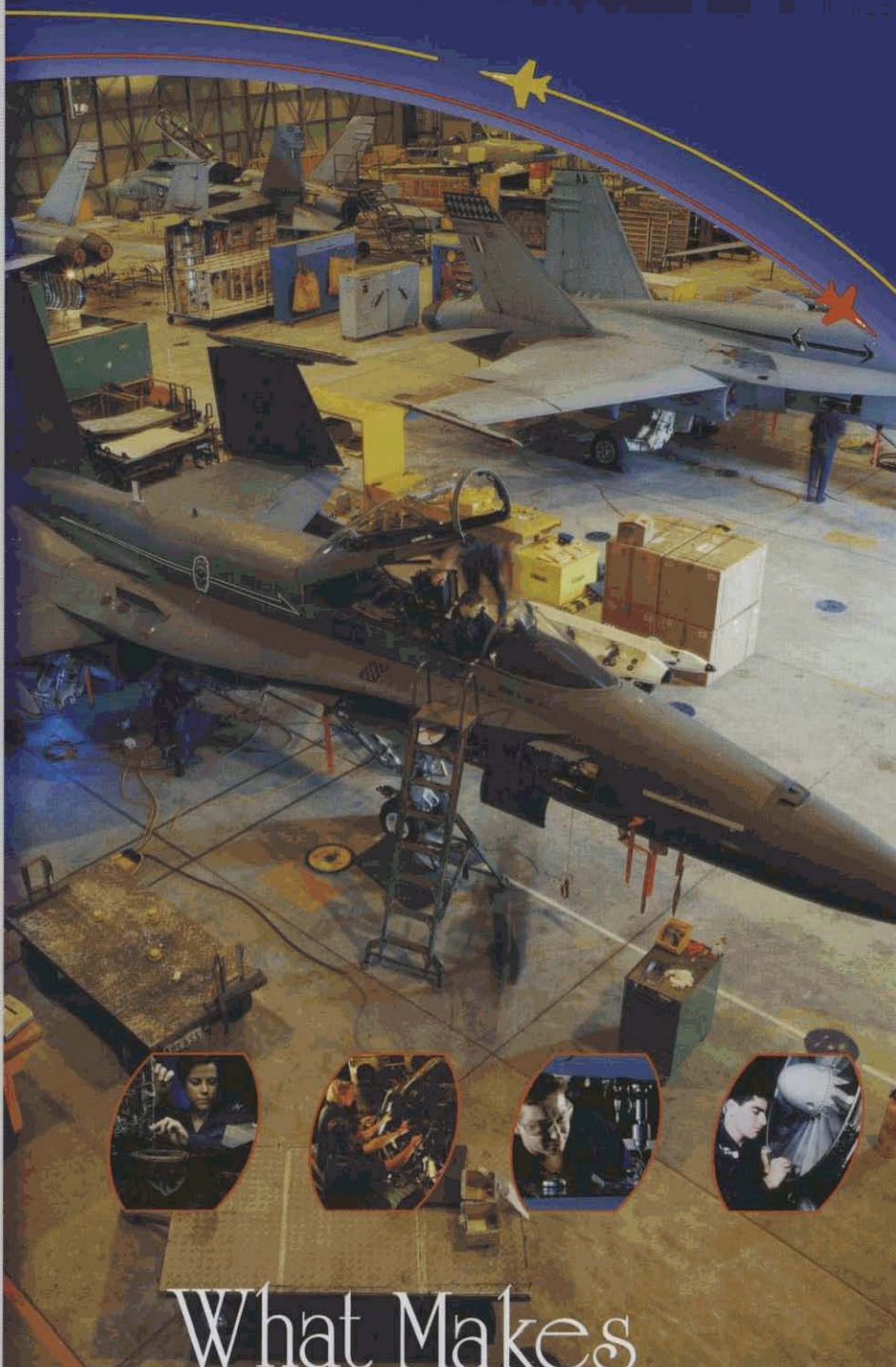




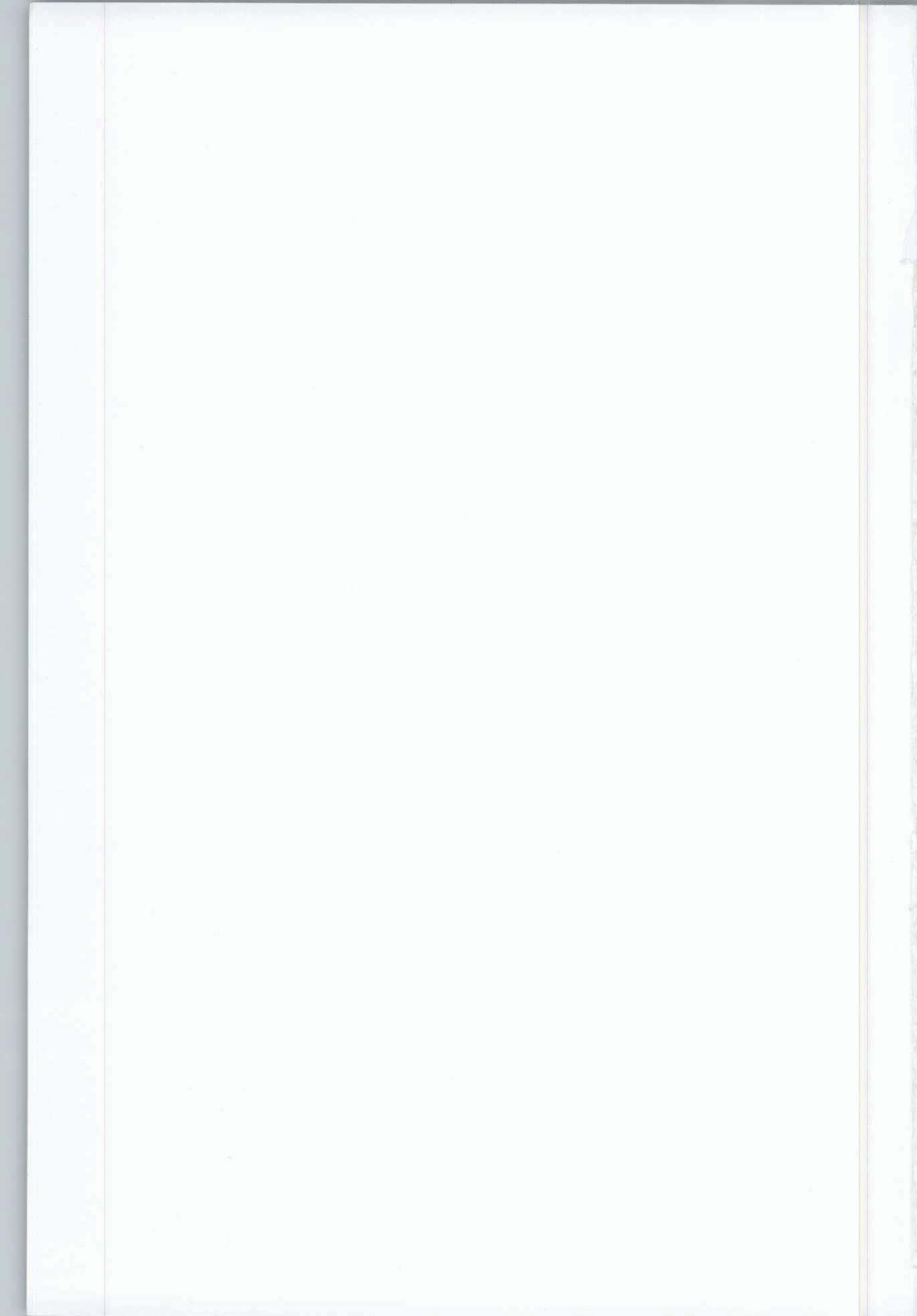
Chief of
Air Force
Aerospace
Fellow
2001



What Makes TECHO'S TICK?

The Human Factor in ADF Aviation Maintenance Capability

Jim Xinos



WHAT MAKES TECHO'S TICK?

THE HUMAN FACTOR IN ADF AVIATION MAINTENANCE CAPABILITY

JIM XINOS

2001 CHIEF OF AIR FORCE AEROSPACE FELLOW

**AEROSPACE CENTRE
RAAF BASE FAIRBAIRN**



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THE AEROSPACE CENTRE

The Aerospace Centre, formerly the Air Power Studies Centre, was established by the Royal Australian Air Force at RAAF Base Fairbairn in August 1989, at the direction of the then Chief of the Air Staff. Its function is to promote a greater understanding of the proper application of aerospace power within the Australian Defence Force and in the wider community. This is being achieved through a variety of methods, including development and revision of indigenous doctrine, the incorporation of that doctrine into all levels of RAAF training, and increasing the level of aerospace power awareness across the broadest possible spectrum. Comment on this publication or enquiry on any other aerospace power related topic is welcome and should be forwarded to:

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The time and effort that goes into any long-term research project is only really understood by one group outside of academic circles—the researcher's family. For this reason, my foremost acknowledgment must be to my wife Odette and sons Nikolas, Daniel and Ashley. My study required frequent travel but, whilst my body was often away, my mind was away far more so. I cannot thank my family enough for standing by me; putting up with my absences, lassitude and often inarticulate rambling.

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As mentioned, my study involved a great deal of travel. I was fortunate that some of that travel was to the UK and US, and I can't thank enough those people who facilitated my visits, ensuring I saw who I needed to and that I had somewhere to sleep and eat. For my UK leg, I thank Wing Commander Steve Drury at the High Commission for clearing the path, and Flight Lieutenant Paul Cochrane for running around and arranging all my visits, escorting me through some of them and introducing me to the wonderful curry, beer and pavement of St Ives. Of course I also thank the many people who made the time to talk with me during my visits. They are too numerous to mention individually, but they all deserve my sincere gratitude. I would particularly like to thank the lads and lasses of DARA St Athan who gave me a great last night in the UK and a colourful introduction to Cardiff's nightlife.

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should operate. Once again, the number of people I talked to during my time in the US is too great to mention each person individually, so I thank you all collectively—you know who you are.

Penultimately, I would like to thank all those people on the domestic front that gave their time to talk with me. I had the opportunity to spend valuable time with aviation maintenance, training, workforce planning and policy personnel within the Navy, Army and Air Force. I also had the opportunity to attend several seminars and conferences related to my study and talked to many of the delegates present.

Finally, I would like to thank all the great men and women whom I have had the privilege to serve along side over my military career. I trust that this paper says at least some of what you have been trying to say for many years, and share in your hope that finally someone will listen. In particular, I would like to thank my mentor and good mate Bob Phillips for his inspiration and confidence in my ability, and Asa Handy for his boundless energy, constant encouragement, mateship and for being my faithful sounding board.

Jim Xinos
Aerospace Centre
Canberra, 2001

*Dedicated to my father, Costa. More than simply a role model
—a shining example of leadership, dedication and integrity.*

FOREWORD

The extraordinary adventure and educational experience that was my Chief of Air Force Aerospace Fellowship year began at the Royal Australian Air Force Air Power Conference held in Canberra on 8–9 May 2000. I was privileged to listen to many excellent speakers over the two days of the conference, but one speaker in particular struck a chord in me that set in train a series of events that would see me travel a long way out of my comfort zone. Air Commodore John Blackburn's topic, *Knowledge in the Australian Theatre—Air Power: our People, their Knowledge*, inspired a journey that took me through the world of strategic and academic thought, across the minds of a multitude of talented and experienced people, and back to earth with a revitalised, but more importantly, informed vision of how the Air Force and the wider Australian Defence Force should, and could be.

Rather than iterate Air Commodore Blackburn's message in my own words, the following extract from his speech illustrates the commonality between his thoughts and my own at the time:

Our people are the Air Force. The platforms, weapons and support systems are the tools they use to achieve the commander's operational goals. Specifically it is the knowledge that our people have developed throughout their service that is the critical factor in our ability to employ air power effectively and to win the battles they may fight. It may be blindingly obvious, but sadly not well appreciated.

... Our consideration of the people aspects of capability has been rudimentary in some areas. To some involved in capability management ... the management of our people is something best left to the personnel staff.

... In my view, the retention of the right knowledge and the ability for subsequent generations of warfighters to build on that knowledge is the key to being an effective air force and to the delivery of air power in the joint context ... I am advocating that we improve our understanding of our people and their knowledge, and that we develop a way of improving the retention and sharing of that knowledge across the Air Force and the ADF.

... We have acquired platforms or capabilities without adequate regard for how we would generate and retain the knowledge necessary to employ them to best effect ... We are faced with the possibility of being equipped but not capable unless we make significant changes to the way we train and retain our people and their knowledge.

*... Whilst our approach to force development has matured significantly in recent years ... we still have some way to go when considering the people side of the capability equation... We seem to have assumed in many instances that the knowledge our people possess can be recreated in each new generation ... People resign or retire and we still **think** that we achieve the task.*

... Another issue we will have to face is whether, with a much reduced support arm, we will still have the necessary skills and knowledge to manage the support systems and associated contracts. For example, in some areas, our officer and airman engineering categories may not be sustainable following the commercialisation program.

... Budgetary pressures could result in further reductions in force numbers [and,] unfortunately, the fastest way to reduce costs is to cut people. If this is done rapidly to accrue savings in the shortest possible time, we will lose that knowledge we have spent considerable time and resources building. We must acknowledge this possibility in our future force planning and develop mitigation strategies to minimise the impact of lost skills and knowledge.

... The bottom line is that the knowledge pool as represented by our people is shrinking. This will adversely impact on our ability to deliver effective air power capability in the absence of hedging measures. We must ensure that the remaining people are allowed to employ their knowledge to best effect, and that we build our knowledge concepts on the future workforce demographic and not the past.

*... I believe we ... have good potential ... to promote the ideal of forward-looking people, technologically ambitious recruits and belief in a learning organisational culture. **We have the good quality people — we must allow them to participate and innovate** ... [We need] a re-examination of our culture and an understanding of the work environment and process changes necessary to facilitate such change.*

... Overall we do pretty well for a small air force — our track record is good. However, we have some problems in the way we manage our people and particularly the way we grow, employ and share our knowledge. The future promises to be more complex and ambiguous. With fewer numbers in uniform and potentially less relative technological advantage, we must get the best out of people if we are to win as warfighters. We need, therefore, to ask ourselves how we can get better at what we do and how we can change to meet the new demands of the future.¹

That is what I set about to achieve with my fellowship opportunity. I have studied hard, read widely and talked to more people than your average talk-show host. The issues I focussed on relate predominantly to the airman technical workforce, however they are pertinent to a far wider audience. What I have tried to articulate is what the majority of the military working populace **feel**; this has been no easy task. Therefore when reading this paper, try to think wider than the actual words on the pages to understand the context and intent of the message. What I espouse is not a plan for

¹ Air Commodore John Blackburn, 'Knowledge in the Australian Theatre—Air Power: our People, their Knowledge' in Keith Brent (ed.), *Air Power and Joint Forces*, Aerospace Centre, Canberra, 2000, pp. 153–70.

change, but rather a new philosophy for personnel management, with which I believe we can all make a difference and return the Australian Defence Force and its personnel to the position of pre-eminence, respectability and identity they once held.

At the end of his speech Air Commodore Blackburn made a final request that I echo in my quest to change Australian Defence Force aviation for the better:

So what does this mean for you? Your participation in the initiatives and ownership of the solutions will be critical if we are to succeed. When you get the opportunity, participate fully in the planning or in one of the initiatives. Remember that without you the plan is just a paper or a PowerPoint slide. With your involvement it becomes real. Then we will meet the challenges of the future and improve our warfighting capabilities.²

Jim Xinos
Aerospace Centre
Canberra, 2001

² Blackburn, 'Knowledge in the Australian Theatre', p. 169.

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Acronyms and Abbreviations

AAP	Australian Air Publication
AB	Able Seaman
ABAA	Assistant Base Armament Advisor
ABDR	Aircraft Battle Damage Repair
AC	Aircraftsman
ACW	Aircraftswoman
ADATECH	Advanced Aircraft Technician
ADAVTECH	Advanced Avionics Technician
ADF	Australian Defence Force
ADFP	Australian Defence Force Publication
AFHQ	Air Force Headquarters
AFITT	Aircraft Fitter
ANAO	Australian National Audit Office
AO	Area of Operations
APS	Australian Public Service
ASYSTECH	Aircraft Systems Technician
ATE	Automatic Test Equipment
ATECH	Aircraft Technician
AVFITT	Avionics Fitter
AVSYSTECH	Avionics Systems Technician
AVTECH	Avionics Technician
BDR	Battle Damage Repair
BIT	Built-in Test
BITE	Built-in Test Equipment
CA	Chief of Army
CAF	Chief of Air Force
CASA	Civil Aviation Safety Authority (of Australia)
CDF	Chief of Defence Force
CE	Constrained Establishment
CINC	Commander-in-Chief
CN	Chief of Navy
CPD	Chief of Defence Force Preparedness Directive
CPL	Corporal
CPO	Chief Petty Officer
CSP	Commercial Support Program
CTC	Competitive Tendering and Contracting
DFRDB	Defence Force Retirement and Death Benefits
DI(AF)	Defence Instruction (Air Force)
DI(G)	Defence Instruction (General)
DLM	Deeper Level Maintenance
DM	Deeper Maintenance
DMO	Defence Materiel Organisation
DoD	Department of Defence
DPA(AF)	Directorate of Personnel – Airmen (Air Force)
DPE	Defence Personnel Executive
DPO(AF)	Directorate of Personnel – Officers (Air Force)

DRP	Defence Reform Program
EO	Explosive Ordnance
FEG	Force Element Group
FSGT	Flight Sergeant
HQTC-AF	Headquarters Training Command – Air Force
IDC	Inter-Departmental Committee
IDF	Initial Deployment Force
IHO	In-House Option
ILM	Intermediate Level Maintenance
LAC	Leading Aircraftsman
LACW	Leading Aircraftswoman
LCPL	Lance Corporal
LS	Leading Seaman
MSBS	Military Superannuation and Benefits Scheme
NDT	Non-Destructive Testing
NDTTECH	Non-Destructive Testing Technician
NFF	No Fault Found
OJT	On-the-Job Training
OLM	Operational Level Maintenance
OLOC	Operational Level of Capability
OM	Operational Maintenance
PLOC	Present Level of Capability
PO	Petty Officer
PTE	Private
QRF	Quick Reaction Force
RAAF	Royal Australian Air Force
RAAFSTT	RAAF School of Technical Training
RADS	RAAF School of Radio
RAN	Royal Australian Navy
RofE	Rate of Effort
RTU	Recruit Training Unit
SGT	Sergeant
SMN	Seaman
SPO	System Program Office
SSGT	Staff Sergeant
STC	Strike Command (RAF)
SYSTECH	Systems Technician
TAFE	(School of) Technical and Further Education
TECHAPP	Technologist Apprentice
TTR	Technical Trades Restructure
UK	United Kingdom
US	United States
WO	Warrant Officer
WO1	Warrant Officer Class 1
WO2	Warrant Officer Class 2
WOFF	Warrant Officer
WS	Weapons Specialist
WSES	Weapon System Employment Streamer

Introduction

The [Armed Forces are] ... not like a limited liability company, to be reconstructed from week to week as the money fluctuates. It is not an inanimate thing like a house, to be pulled down or enlarged or structurally altered at the caprice of the tenant or owner; it is a living thing. If it is bullied, it sulks; if it is unhappy, it pines; if it is harried it gets feverish; if it is sufficiently disturbed, it will wither and dwindle and almost die; and when it comes to this last serious condition, it is only revived by lots of time and lots of money.¹

Pilots without maintainers are just pedestrians with sunglasses and a cool jacket.²

INTRODUCTION

The Australian Defence Force (ADF) is losing its technical trades personnel. This is a problem because people, together with equipment, form the pillars that support Australia's defence capability. It is capability, together with national will, that creates Australia's defence posture—a deterrent vital to Australia's national defence policy. No enterprise can remain effective for very long without enough trained and experienced people. Not only do people ensure that the ADF can support the range of capabilities it currently possesses, they are vital in ensuring that the ADF workforce remains structurally sound—it is people who lead and manage people. If we continue then to allow the exodus of personnel, who depart with much of the leadership, skills and experience the ADF needs to maintain, how can it hope to sustain its capabilities? The time has come for a new philosophy for personnel management.

AIM

This paper seeks to provide an answer to the ADF's problem of skills and experience retention. It does so by espousing a new philosophy based on the individual needs of specific work groups, and focuses on one group within the ADF as an example—aviation technicians. By examining the relationship between people and capability, determining the need for an intrinsic aviation technical maintenance capability in the ADF, and discussing the major defence reforms of the past decade that have most affected that capability, this paper aims to shed a great deal of light on why defence recruiting and retention rates are poor and why there is an ever widening skill and experience gap in the aviation technical workforce.

¹ Winston Churchill, *Daily Mail*, London, 1904.

² Author unknown.

Chapters dedicated to the discussion of recruitment and retention help to examine these issues more deeply and lead to a range of conclusions identifying the root causes and a series of recommendations on how they might be resolved.

SCOPE

RAAF aviation tradesmen, or aircraft tradesmen as they are also referred to, account for over 39 per cent of the RAAF permanent non-commissioned workforce and 28 per cent of all permanent Air Force personnel.³ They represent a significantly large portion of the permanent Air Force, and therefore a significant capability in themselves. The addition of Army aviation tradesmen (590 personnel⁴) and Navy aviation tradesmen (300 personnel⁵) amounts to a total of 4577 aviation tradesmen in the ADF. As mentioned previously, the aim of this paper is to be achieved by focussing on the individual needs of specific work groups. Therefore, only a subset of the total ADF aviation technical workforce will be represented in the discussions in most cases. This portion will generally be limited to the RAAF Aircraft and Avionics trade groups (3339 personnel), with the other Services and trades used in comparative examples or to illustrate particular points as required.

Whilst this paper focuses predominantly on RAAF aviation technicians, it is important to note that the problems identified are not confined to this specific group of musterings, or indeed the RAAF, alone. All three Services in the Australian Defence Force face the same problems in regard to maintaining skilled and experienced personnel across most trade groups. The British, American and Canadian armed forces also feel the impact of reduced personnel and consequently a reduction in overall experience. At an industry level, the aerospace industry worldwide faces similar skill and experience retention problems.

PHILOSOPHY

To ensure that the ADF possesses the technical skill base its air power capability requires and that this skill base is both efficient and, more importantly, effective, these skills must be clearly and unambiguously linked to capability. However, to ensure that the ADF maintains the required skill base, the ADF must develop a personnel management philosophy to support its own needs—not simply adopt the philosophies of other organisations—and provide a robust framework to support its philosophy in order to attract, nurture and retain its people. Put another way, linking specific skill

³ Based on 3687 personnel (interview with FSGT Stuart Donaldson, Technical Workforce Development, 10 October 2001) out of 9361 permanent non-commissioned and 13,194 total permanent Air Force personnel. Barry Nunn, Peter Kennedy and Les Cupper, *Review of Australian Defence Force Remuneration*, Commonwealth of Australia, Canberra, 2001, p. 5.

⁴ Defence Personnel Executive – Directorate of Workforce Planning and Establishments, <http://defclus01.cbr.defence.gov.au/DPEDWPE>, accessed 28 September 2001.

⁵ Defence Personnel Executive – Directorate of Workforce Planning and Establishments, <http://defclus01.cbr.defence.gov.au/DPEDWPE>, accessed 28 September 2001.

requirements to capabilities may ensure that all of the ADF's capabilities are adequately supported. However, this does not guarantee the flexibility or long-term viability of that support. Strategically, therefore, it may be more beneficial in the longer term to create a capable, sustainable and ultimately flexible technical workforce that is essentially independent of any specific capability, can support all current capabilities and can adapt quickly to support any new capabilities as quickly as they can be acquired.

The key to restoring ADF technical skills and experience is to change the philosophy by which the ADF determines and manages its force structure. In order to ensure its technical trades are sustainable, and that a level of technical mastery is maintained, the ADF must better understand its people and what they do. By fully appreciating what it takes to be, and means to be, a skilled technician, and by understanding what they are truly capable of, the ADF can begin to develop not only the technical work force it needs to support operations, but one that is suitable and viable for the long term. This philosophy applies equally to all musterings, trades, specialisations, Services and Defence Forces.

DEFINITIONS

Definitions for most of the terminology used in this paper can be found in the Glossary of Terms.

Capability

Having regard to strategic circumstances, the ADF is maintaining and developing a range of military capabilities to provide for Australia's security. Military capabilities are a combination of the right equipment and infrastructure and the people with the requisite professional training and operating skills. If any of these principle elements is deficient or altogether absent, the ADF's capability to defend Australia is lessened.¹

INTRODUCTION

'People are capability' is a phrase often heard in recent rhetoric pertaining to personnel management. Despite its obvious agenda to improve morale and make the workforce feel more valued, the phrase recognises a connection between the capability of the ADF to perform its required roles and the personnel involved in insuring that capability. But who truly understands the contribution people make to a defence force's, or any organisation's, capabilities? How do the performance, expertise and attitude of individuals, teams and functional groups affect capability?

This chapter discusses what is meant by the term *capability* and describes the contribution people make to ensuring the ADF maintains the capabilities required to contribute to the security of Australia and its strategic interests. It also looks at operational flexibility and its dependence on some level of latency in the ADF. In an era of outsourcing, the question of why Defence maintains an intrinsic maintenance capability is answered in terms of a brief history of how the RAAF recognised the need for such a capability, and a discussion of some of the problems associated with a dependence on civilians in an area of operations. This is followed by a brief description of the current policies that require such a capability to be maintained. The question of outsourcing capability is discussed in more detail in Chapter 2.

CAPABILITY UNDER FIRE

As it enters the 21st Century, the Australian Defence Force is becoming increasingly aware that its capabilities are being sorely tested by poor recruitment and retention rates across most of its musterings and specialisations. This situation is compounded by aging aircraft and support equipment fleets, and highly restrictive budget allocations, and the ADF is rapidly reaching the point where it will simply have to ask the Australian Government what tasks it is willing to have the ADF cease performing.

¹ Australian Defence Force, *Serving Australia: The Australian Defence Force in the Twenty-First Century*, Personnel Policy Strategy Review Team, Defence Centre Canberra, 1995, p. 56, para 3.8.

'Can-do' Attitude

Some would argue that this question should have been asked of the Government well before now. Budgetary, personnel and equipment limitations are nothing new to the ADF. In fact they are a way of life to most that serve the nation in the armed forces. Yet the serviceman is not, and has never been, one to say 'I can't do it'. It is a mark of the tenacity, resourcefulness, commitment and courage of Australian servicemen that the ADF has managed to maintain its capability to perform its required roles thus far. Government and internal pressure to 'do more with less', 'work smarter not harder' and ensure operational availability of systems and equipment have reinforced this 'can-do' attitude.

However, this can only go so far and last for so long. Eventually the effort required to maintain capability becomes unsustainable. Cracks start to appear in the fabric of the organisation—many of which are covered up, in the initial stages, as a result of a fear of failure. Those cracks gradually expand or merge to form holes and—often after considerable delay—commanders are finally forced to admit that they have a problem. By this stage the capability is often not much more than a conceptual shell, devoid of any structural rigidity.

The resurrection of a capability is then an enormously complex and expensive task—often costing far in excess of the estimated (unfunded) costs of proper maintenance of the capability in the first place. The resources required to revive the capability have to be sourced from other areas—often areas that are facing, or are close to facing, a similar predicament. Therefore the loss of resources accelerates the 'donor' area's advancement towards the same fate, and a downward spiral begins.

Of course the only resource that can actually do something about the problem is people. In the first instance, it is the experience and knowledge of the ADF's people that can best forecast when a problem is beginning to present itself. Secondly, by having experienced and knowledgeable people empowered to contribute effectively to the resolution process, the ADF can formulate a holistic range of solutions that take into account the effects of change on the entire organisation or the affected portion.

WHAT IS CAPABILITY?

The Macquarie Concise Dictionary defines capability as 'a quality, ability, etc., that can be developed or used'.² Capability, in the military context, has a more specific meaning. 'Military capability is the combination of force structure and preparedness through which a nation exercises combat power.'³ ADF Capabilities represent the force that can be applied against an adversary at any given time. Preparedness itself is a combination of readiness and sustainability, recognising the need to be able to

² *The Macquarie Concise Dictionary, Third Edition*, The Macquarie Library, New South Wales, 1998, p. 162, definition 3.

³ AAP 1000, *The Air Power Manual*, 3rd edn, Air Power Studies Centre, Canberra, 1998, p. 12.

sustain defence capability as well as the ability to employ that capability in a timely manner.

Therefore the relationship can be represented as:

$$\text{CAPABILITY} = \text{FORCE STRUCTURE} + \text{READINESS} + \text{SUSTAINABILITY}$$

WHAT IS THE CONNECTION BETWEEN PERSONNEL AND CAPABILITY?

The connection between personnel and capability is generally represented by the equation:

$$\text{CAPABILITY} = \text{PEOPLE} + \text{EQUIPMENT}$$

Taking the previous equation and applying the algebraic principle of substitution, the following equation can be produced:

$$\text{FORCE STRUCTURE} + \text{READINESS} + \text{SUSTAINABILITY} = \text{PEOPLE} + \text{EQUIPMENT}$$

What this equation recognises, is that each element of capability—Force Structure, Readiness and Sustainability—is a product of the combination of people and equipment. The elements can therefore be further deconstructed to describe in more detail the contribution people make to each.

Force Structure

Force structure can be defined as the size, organisation, and technical and operational characteristics of a force-in-being.⁴ Government policy, strategy, and equipment and manpower limitations are taken into account, to configure a military organisation to undertake its assigned roles.⁵ Force structure includes the composition and distribution of hardware (aircraft, facilities and supporting equipment) and personnel (operators, maintainers and support personnel), and the management infrastructure that ensures the force structure remains robust, flexible and capable.

Examples of the management infrastructure that supports the personnel component of force structure include systems to manage training, career development, personal development, performance appraisal, promotions, rewards and remuneration. These systems also have a place in ensuring the readiness and sustainability of the force structure.

⁴ AAP 1000, *The Air Power Manual*, p. 12.

⁵ Ian MacFarling, *Air Power Terminology*, 2nd edn, Aerospace Centre, Canberra, 2001, p. 56.

Readiness

Readiness is the ability of a defence force to undertake operations in a timely manner, that is, being ready for a contingency.⁶ The high cost and long lead-times associated with the procurement of modern weapons require armed forces to be prepared to fight with the people and equipment they have available at any given time. '... Most professional armed services stress [readiness], either explicitly or implicitly, as a principle of war. It covers the weapons systems and their logistics support, and the personnel and their training and education.'⁷

Sustainability

Sustainability can be defined as '... the ability to maintain an operation for a long period of time'.⁸ However, the term sustainability pertains to more than just the conduct of operations. In order to be able to sustain operations, the armed force itself must be sustainable, the supplies and supply lines to that force must be sustainable, and the will of both the force and the nation must endure. External to operations, it is the sustainability of the force itself that is the key issue affecting the ADF's ability to prepare for, conduct and sustain effective operations.

The relationship between personnel and capability is an extremely complex one, and any project that affects one element is most likely to have an effect on the other elements. Commanders, project and personnel managers, and perhaps most importantly, politicians and finance managers, need to understand the roles people play in the maintenance of ADF capability. When the importance of personnel and their ubiquitous involvement in the myriad of factors upon which capability depends are fully understood, the term 'cost of capability' takes on a very different light.

OPERATIONAL LEVEL OF CAPABILITY

Operational Level of Capability (OLOC) is defined for a Combat Unit as what it can do at wartime rates of effort, and what resources it requires for deployment and sustainment. OLOC represents the highest state of preparedness, and in peacetime very few, if any Units will be maintained at OLOC as this is expensive and would unnecessarily waste resources. How much the Present Level of Capability (PLOC) of units will be maintained below OLOC will depend upon their specific role, the strategic situation and an assessment of risk. The OLOC concept is outlined in Australian Defence Force Publication 4 (ADFP 4).

The Chief of Defence Force Preparedness Directive (CPD) specifies the Readiness States for the various ADF units. The CPD reflects current strategic circumstances and could change at relatively short-notice.

⁶ AAP 1000, *The Air Power Manual*, p. 12.

⁷ MacFarling, *Air Power Terminology*, pp. 102-3.

⁸ MacFarling, *Air Power Terminology*, p. 128.

Typical conflicts of the late 20th Century have had short-warning times of 18 months or less. In respect of the capital-intensive parts of a military force, these conflicts have been very much 'come as you are' wars as there has been insufficient time to acquire additional major items of capital equipment. Also important, there has been insufficient time to train additional 'long-training time' personnel — the operators and technicians necessary to operate, repair and maintain sophisticated and high technology equipment in the Navy, Army and Air Force.

For Australia entering the 21st Century, with no identified major territorial threats but an environment characterised by instability and uncertainty, the 'come as you are' model continues to be valid. This could mean that there are insufficient 'long-training time' personnel to operate and maintain existing equipment at wartime rates of effort.

OPERATIONAL FLEXIBILITY

Prior to outsourcing, Support Units staffed by military personnel could carry out the following tasks if staffed to establishment:⁹

- Surge to support Combat and Combat Support Units, increasing their readiness from PLOC to OLOC and sustaining it if necessary on deployment.
- Augment personnel deficiencies in Combat or Combat Support Units and substitute logistic personnel as required.
- Provide a rotation pool of personnel for Combat or Combat Support Units, offering respite from extended, high rate of effort deployments.
- Provide selected personnel for initial deployment or specialist tasks in the Area of Operations (AO). Examples of this include RAAF Expeditionary Combat Support Squadrons and Battle Damage Repair (BDR) Teams.
- Be available if required for use in base security duties, aid to the civilian community and ceremonial occasions.

The latent ability of a Support Unit to substitute trained uniformed personnel with elements of a deployed force is a function of the number of uniformed personnel in its workforce.

LATENCY

The Macquarie Concise Dictionary defines latent as 'hidden; concealed; present but not visible or apparent: *latent ability*'.¹⁰ Latency resides in most capital equipment

⁹ The ability of former military logistic units to surge and sustain, in part was a function of excess capacity in normal peacetime conditions as unit establishments were deliberately linked to performance in contingency situations. This excess capacity was shed when the units were reorganised along commercial lines prior to market testing under the Commercial Support Program.

used by the ADF, which can be operated much more intensively in wartime than during routine peacetime activities. To be fully exploited this latency is normally complemented by increased numbers of trained combat personnel and logistic support. Together they represent latent capability. Latency can apply to both the quantity and quality of resources.¹¹

Maintaining latent capability in the defence force or other emergency services is normal practice. How much latent capability to maintain is a matter of judgment dependent upon an assessment of threats, risks and response times. In respect of trained people, particularly the use of uniformed personnel for support functions, latency is related to underemployment, overtraining and flexibility.

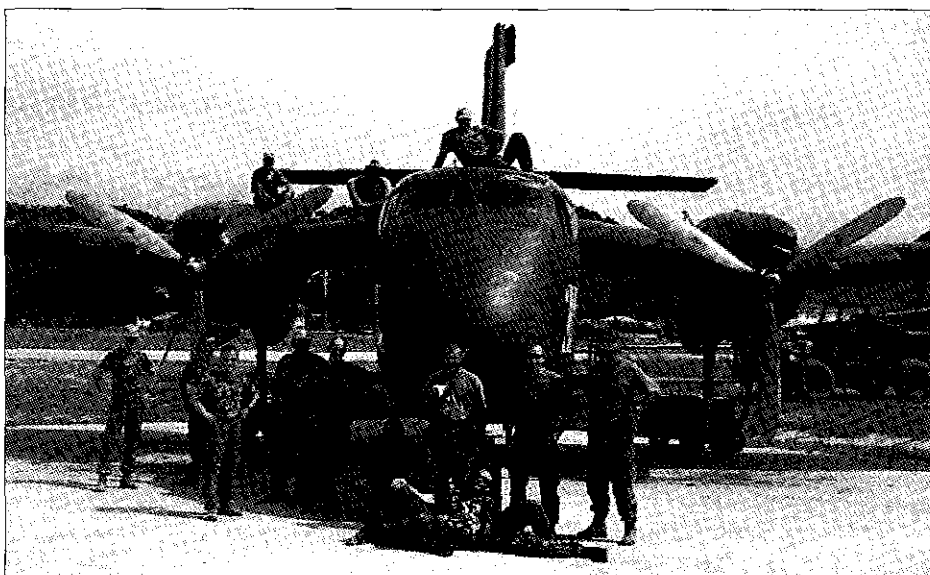


Figure 1.1 Caribou maintenance team in East Timor.¹²

Latency flows from the flexibility, versatility and adaptability of trained military personnel. Uniformed personnel in the support force are physically and medically fit. They are culturally attuned to deployment and separation from their families, and to maintaining periods at high states of readiness. They all have basic military skills as well as their technical or administrative skills and some have specific military skills. Some members will be multi-skilled to operate a variety of equipment and fulfil a number of roles. As well as being available for deployments and direct support some

¹⁰ *The Macquarie Concise Dictionary*, p. 639.

¹¹ Michael J. Rawlinson, *An Evaluation of the Capability Outcomes of the Outsourcing of Defence Support Activities*, National Support Division, 29 January 2000, p. 8.

¹² Photograph from DEFWEB Image Gallery, <http://defweb.cbr.defence.gov.au/home/gallery.htm>.

may be directly substituted for combat force members. When they are in a rear area logistics, engineering or maintenance role they can be substituted for deployed personnel in direct support (ie. rotation), or may be embedded in support organisations with the intention that they will be withdrawn for initial deployments. Their latency can therefore contribute to either readiness or sustainability.

The issue of the sacrifice of latency as a result of outsourcing defence functions is discussed further in Chapter 2.

WHY DOES THE ADF HAVE AN INTRINSIC MAINTENANCE CAPABILITY?

Not just the personnel who fly the aircraft comprising the operational element of the service must be competent in their task, or be prepared to pay a penalty of the most drastic kind, but the members of the ground-crews who prepare, maintain and support the effort in the air must be able to fully respond to the technical demands of any situation.¹³

Realising the Need

Since the Middle Ages, and up until the 20th Century, a reliance of armed forces on contractor owned and operated logistic support was generally the norm. This changed during the two World Wars as mechanised warfare saw a swing to government and military operated logistic support for combat forces.

Before the Second World War, the RAAF maintained only a limited capacity for training its technical tradesmen. The training that existed dealt primarily with the conversion of civilian trade qualifications to aircraft specific skills. This continued to apply during the war despite the increased demand for tradesmen resulting from the raising of aviation units on a far larger scale. Whilst the aircraft themselves remained fairly simple in construction, this situation adequately supported the requirement. The aviation industry was relatively small and undeveloped, and the pool of qualified tradesmen was large enough that the air force and civil companies could usually meet their needs without resorting to a training program of their own.¹⁴

In 1925, the Chief of Air Staff (Wing Commander Richard Williams) detailed a plan for the development of the RAAF over the following decade. He expressed some concern about the ability of the RAAF to continue to rely on obtaining a sufficient number of appropriately experienced civilian tradesmen. 'If this proves ... to be the

¹³ C.D. Coulthard-Clark, *From the Ground Up: the training of RAAF technical ground staff 1948–1993*, Air Power Studies Centre, Canberra, 1997, p. 5.

¹⁴ Coulthard-Clark, *From the Ground Up*, p. 1.

case,' Williams observed, 'then the question of establishing training schools will have to be considered. The latter are in operation in England with remarkable success.'¹⁵

Williams was alluding to the Royal Air Force apprenticeship scheme instituted by Chief of Air Staff, Air Chief Marshal Sir Hugh Trenchard, in 1920. In his plan for the new scheme, which was presented to the British Cabinet in late 1919, Trenchard pointed out that '... demobilisation had removed most of the RAF's best mechanics, and there was a need to ensure the thorough instruction of their replacements if efficiency was to be achieved in the future'.¹⁶ Despite this warning, the RAAF did not follow the British example after its formation. It wasn't until after World War II, when the RAAF experienced the full effects of draw-down itself, that it acknowledged a need to train and sustain its own maintenance staff. The RAAF's strength had plummeted to below 20 per cent of its war-time level against a draw-down target of around 50 per cent, and RAAF planners were forced to consider new strategies to recruit, train and retain personnel.¹⁷ The formation of a specialist Technical Branch in 1946, and the subsequent establishment of the RAAF apprentice training scheme, was an acknowledgment by the Air Board of the dependence of air operations on technically sound decisions.¹⁸ What ensued was a revolution in RAAF technical training and technical management.



Figure 1.2 Mechanics installing an engine in an Avro Trainer.¹⁹

¹⁵ Memorandum regarding the 'Air Defence of Australia' dated 21 April 1925, in Coulthard-Clark, *From the Ground Up*, p. 2.

¹⁶ Coulthard-Clark, *From the Ground Up*, p. 3.

¹⁷ Coulthard-Clark, *From the Ground Up*, p. 12.

¹⁸ Alan Stephens, *Power Plus Attitude*, AGPS, Canberra, 1992, p. 107.

¹⁹ Photograph courtesy of RAAF Museum, Point Cook.

Trenchard's was perhaps the earliest realisation that defence requirements for skilled, experienced aircraft technicians could not be borne by the civilian infrastructure. The civil aviation industry trained for its own needs, as did other technical institutions, and none trained its technical staff to the levels demanded by the RAAF nor prepared them for a working environment such as the military experience. This situation has not changed significantly in the 21st Century, however the pool of potential recruits has diminished as will be described in Chapter 6, and there is *far greater competition* for those that become available. The RAAF must therefore ensure it can sustain its own population of technicians rather than relying on external supply.

Civilians in the Area of Operations

Whilst in peacetime some maintenance activities are similar in nature to those conducted by civilian enterprises, the more operational the working environment the less civilian contractors can be expected to be able to support Defence Force maintenance. In an operational environment there is an obligation under the Geneva Convention to ensure that civilians are not put in harms way. For armed forces to operate effectively they must have control of the air environment.²⁰ Considering the air forces that ensure control of the air rely totally on airbases and airfields as a base for operations, maintenance and resupply, these airbases are major centres of gravity.²¹ As such in an area of operations civilian contractors are highly likely to be in harms way. Therefore employing civilian support staff in an area of operations could be considered in breach of the Geneva Convention.

Even if this were not the case, civilian personnel could not legally take up arms to protect themselves, so military personnel would be required to provide some level of protection for them. As will be discussed in Chapters 2 and 3, as more military positions are civilianised, outsourced or made redundant, there will be fewer military personnel available to provide this protection. The ADF has already discovered that it is difficult to sustain a high level of base security at most of its installations, due to a lack of uniformed personnel.

It is therefore essential that the ADF has an intrinsic aircraft maintenance capability on the grounds that it must ensure it has access to an adequate number of *appropriately trained, skilled and experienced* technical staff to ensure capability is maintained. It is impractical, and probably illegal, to rely on civilian tradesmen to provide operational and contingency maintenance and battle damage repair in an area of operations.

²⁰ '[Control of the air] is the ability to use the third dimension and the surface below it, without being threatened or attacked by an opponent's air power. It is, without doubt, the prerequisite for successful military operations, both in attack and defence.', in MacFarling, *Air Power Terminology*, p. 30.

²¹ 'A military centre of gravity is a vital element whose loss would cause significant difficulties. A base—particularly a forward operating base—is a centre of gravity in air operations. If it were lost or damaged, and air operations consequently impeded, then the war could be lost. For this reason, airfields are important targets for enemy action and should be well protected.', in MacFarling, *Air Power Terminology*, p. 21.

CONCLUSION

ADF maintenance policy states 'the maintenance requirement is to ensure the availability of technical equipment which satisfies operational objectives'.²² During peacetime, safety, cost-effectiveness and asset preservation are emphasised. During a contingency however, the maximisation of availability and mission generation become the imperatives. Contingency maintenance, battle damage repair (BDR) and turn-around times become the focus of maintenance and, therefore, non-essential maintenance is not performed and cost minimisation becomes less of an issue. The extent by which peacetime requirements are relaxed depends on the urgency of the situation and is relative to national security.²³

Government and ADF policies emphasise the need for the ADF to maintain a technological advantage in Australia's region of strategic interest. The maintenance of advanced technology capabilities requires the retention of essential skills and capabilities in Australia to ensure equipment remains supportable at all times.²⁴ Whilst this can be achieved by either a civilian or military workforce in peacetime, the employment of civilians in an active area of operations imposes a liability that Defence, due to legal, moral and financial uncertainties, are not sure how to handle. The long lead-times required to train and skill technicians, set against the potential for any conflict to have only a short warning time, means that the ADF must maintain a cadre of highly skilled, experienced personnel to maintain its high technology, complex equipment.

The Australian Government and ADF leaders recognise the tradition of excellence in the ADF based on the professionalism of its maintenance personnel. However Government policies require that Defence maximise the potential of Australian industry to support its activities. As has been discussed, this can not be done extensively in many areas due to the high level of risk associated with the employment of civilians. Government policies also acknowledge that there is a requirement to ensure Australian industries are able to support the maintenance effort, and has the expectation that the maintenance support received from industry is based on the same standard of professionalism as has been exhibited by the ADF.

Some argue that the ADF has gone too far in civilianising its support functions and subsequently capability has been compromised. The following chapter discusses the effects of major reforms that have significantly restructured the ADF over the past ten years, in particular the Commercial Support Program (CSP) and the Defence Reform Program (DRP). It addresses the affects of outsourcing, downsizing and civilianisation on capability and personnel.

²² Defence Instruction (General) LOG 08-8, *Maintenance Policy*, 21 March 1996, p. 2.

²³ DI(G) LOG 08-8, *Maintenance Policy*, p. 2.

²⁴ DI(G) LOG 08-8, *Maintenance Policy*, p. 2.

Outsourcing Capability

Almost any government task, even core functions such as police and the military, can and have been contracted out in the past. For example, whilst the First Fleet was publicly operated, the Second Fleet was privately operated. The incentive to cut costs was reflected in greatly increased mortality among convicts.¹

INTRODUCTION

Any Defence operational or support function that is performed by ADF personnel can be considered an ADF capability. Therefore, if any of these functions are outsourced to civilian industry, that capability can be seen as lost to the ADF. However, the capability is not lost to Defence. From a National Power perspective, as long as the outsourcing of Defence functions does not result in any overall loss of national defensive capability, there should be no problem.

This chapter discusses the impact of outsourcing on Defence capability. It considers the quality and cost effectiveness of outsourcing, the risk associated with outsourcing some functions and the loss of flexibility resulting from lost latency. Finally, a case study is presented to illustrate these arguments.

BACKGROUND

Contracting out maintenance work to private companies is not new in Defence. Navy has traditionally maintained the fleet in Government or private dockyards, and since the 1950s about 30 per cent of RAAF's deeper maintenance work has been contracted out.² From the late 1980s, reforms affecting the Defence Force and Defence Industry have flowed from a long series of reports and reviews. Major reports include the Cooksey reports,³ Wrigley report,⁴ Interdepartmental Committee report on the

¹ Paraphrased from John Quiggin, *Great Expectations: microeconomic reform and Australia*, Allen and Unwin, Sydney, 1996, p. 173.

² Michael J. Rawlinson, *An Evaluation of the Capability Outcomes of the Outsourcing of Defence Support Activities*, National Support Division, 29 January 2000, p. 15.

³ Robert J. Cooksey, *Review of Australia's Defence Exports and Defence Industry: report to the Minister for Defence*, AGPS, Canberra, 1986; Robert J. Cooksey, *Review of Australia's Defence Facilities: report to the Minister for Defence*, AGPS, Canberra, 1988.

⁴ Alan K. Wrigley, *The Defence Force and the Community: A partnership in Australia's defence*, AGPS, Canberra, 1990.

Wrigley review,⁵ Force Structure Review,⁶ Defence Logistics Redevelopment Project, Defence Regional Support Review, Price Report,⁷ Defence Efficiency Review⁸ and Defence Reform Program, Defence and Industry Strategic Policy Statement,⁹ and the ongoing Financial Improvement Cycle.

The main focus in implementation has been on economic efficiency and saving resources. Aspects have included asset sales, role & task definition, standardisation, rationalisation, organisation re-engineering, civilianisation, privatisation, performance measurement, continuous improvement and outsourcing to commercial organisations. Proceeding concurrently with these reforms, there has been a revolution in information technology, which has eliminated many clerical jobs associated with information processing in administration, personnel and logistics. Meanwhile, the amount of information being processed has increased significantly.

Outsourcing Recommended—The Wrigley Report

Although synonymous with ongoing reform within Defence, the Wrigley report has been seen as the most influential report in respect of outsourcing. Wrigley focused on capability and proposed that capability could be increased by outsourcing the ADF's quasi-civilian support roles and investing the savings in the combat force, in particular by greatly expanding reserves. Wrigley's 'savings' were mainly related to latency foregone. His outlook was holistic, involving greater community involvement, encompassing national capability in support and with a 'total force' philosophy fully embracing permanent and reserve forces.¹⁰

Outsourcing and the Wrigley (IDC) Review

An Interdepartmental Committee (IDC) examined Wrigley's recommendations. The IDC broadly agreed with Wrigley's outsourcing recommendations, but was more attune to anticipated efficiency gains. It did not favour his complementary 'militia' proposals to significantly increase both combat and combat support components of the Reserves.¹¹ The Wrigley (IDC) Review's recommendations were endorsed by

⁵ Interdepartmental Committee on the Wrigley Review, *The Defence Force and the Community: report of the Interdepartmental Committee (IDC) on the Wrigley review*, AGPS, Canberra, 1991.

⁶ Australian Department of Defence, *Force Structure Review: report to the Minister for Defence*, Department of Defence, Canberra, May 1991.

⁷ Roger Price, *Defence Policy and Industry: report to the Minister for Defence*, AGPS, Canberra, 1992.

⁸ Defence Efficiency Review (Australia), *Future Directions for the Management of Australia's Defence*, Directorate of Publishing and Visual Communications, Canberra, 1997.

⁹ Department of Defence (Australia), *Defence and Industry: Strategic Policy Statement*, Defence Publishing and Visual Communications, Canberra, 1998.

¹⁰ Wrigley, *The Defence Force and the Community*, 1990.

¹¹ Wrigley proposed increasing Reserve numbers by 25,000 to 52,000. The Ready Reserve concept endorsed by the Wrigley (IDC) was for an additional 'Ready Reserve' of 4000 (replacing 3000 from the Army's combat force).

government, and formed the basis for outsourcing under the Commercial Support Program (CSP).¹²

The IDC report made some critical assumptions in respect of outsourcing. The IDC believed that the level of commercialisation being recommended would not adversely effect readiness and expansion potential if sufficient positions were retained in order to maintain rotation and sustainability requirements.¹³ Once it was established that a function could be commercialised without impairing preparedness, the next step was to determine whether industry could undertake the task more effectively and efficiently than the ADF. The IDC was broadly satisfied that such capability existed in the areas of interest at the time.

The IDC further advised that in assessing the ability of industry to provide the service to the required quality, reliability and timeliness, care would need to be taken when the civilian supplier enjoyed a monopoly position. In some cases the loss of a Defence capacity could leave the ADF vulnerable if the monopoly supplier closed down, lost interest in the ADF contract or changed its pricing policy.¹⁴

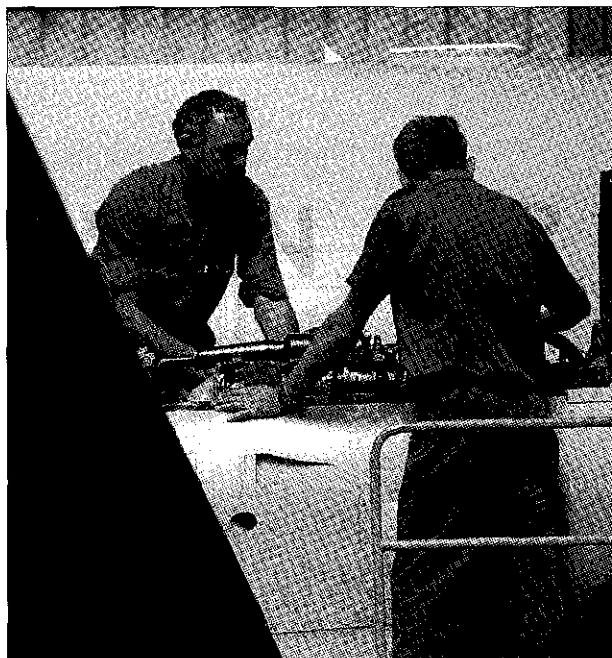


Figure 2.1 Contractor support of P3C Orion maintenance.¹⁵

¹² Interdepartmental Committee, *The Defence Force and the Community*, 1991.

¹³ Interdepartmental Committee, *The Defence Force and the Community*, pp. 8–9.

¹⁴ Interdepartmental Committee, *The Defence Force and the Community*, p. 9.

¹⁵ Photograph from DEFWEB Image Gallery, <http://defweb.cbr.defence.gov.au/home/gallery.htm>.

National Support Agenda

Emanating from the Price Report was the holistic consideration of national capability. The relationship between Defence and industry was further developed in the Defence and Industry Strategic Policy Statement that enunciated a 'total defence' concept in which industry was an integral part of the nation's defence capability.¹⁶ This idea was developed into the 'whole-of-nation' approach of the National Support Agenda, which seeks to maximise National Capability by exploiting the potential synergy that exists between Defence and industry. This extends to the involvement of contractors and relevant industry in contingency planning, and removing impediments to contractor support augmenting organic support in an Area of Operations, should this be appropriate.

Outsourcing has an important role under the 'whole-of-nation' National Support philosophy. Outsourcing potentially offers an increase in efficiency in support functions, together with the likelihood that the greater involvement of industry will serve to unlock synergies with civilian logistic capacities that will increase National Capability. For example, where support contracts are won by internationally competitive companies, ongoing improvements in operating procedures and techniques, reflecting 'world's best practice', should quickly flow through to the Defence support part of their business.

EXTENT OF DEFENCE SUPPORT OUTSOURCING

Outsourcing of Defence support that had previously been provided 'in-house' by military personnel or defence civilians has evolved under the Commercial Support Program (CSP) and Defence Reform Program (DRP). The aim of the CSP is to ensure that non-core support services and products are provided to core Defence activities in the most cost-effective manner.¹⁷ The central objective is to transfer support activities to the civil sector where operationally feasible, practicable and cost-effective. CSP has involved competition by tenderers, including in-house options. Where in-house options (IHOs) win contracts, the difference is that the operation is now carried out on a commercial basis with a focus on achieving peacetime contract criteria.

Realised Savings

The intention of government has been to transfer savings made in support services to increase combat capability. Aside from double counting and other difficulties in attributing savings to programs, and despite the differences between pre-CSP activity

¹⁶ Department of Defence, *Defence and Industry*, 1998.

¹⁷ Australian National Audit Office, *Commercial Support Program: Department of Defence*, Australian National Audit Office, Canberra, 1998.

costs and the anticipated costs of the winning tender, aggregate savings have sometimes been difficult to identify.¹⁸

This follows as transaction costs have often been exceptionally high, on both an *accounting and opportunity cost* basis. Transaction costs are incurred across programs and are not revealed in the pre/post or IHO/Tender comparison as they stand outside the calculation. Nevertheless they are contained within the Defence Budget. However, these initial transaction costs, are not just 'transaction costs' but 'transition costs of changing to a new way of doing business', and should include any additional cost of downsizing. As such in an economic sense, they should be amortised over a number of years. Other ongoing costs relate to the new way of doing business, and should also be included in the overall calculation. For example, the cost of training staff in contract management, the cost of monitoring and managing the new contracts, together with the cost of the new functions required to manage the needs of any military personnel embedded in a contractor's workforce.

Another factor that blurs the assessment of cost-effectiveness is the use of counterfactual data. A statement of productivity benefit since the introduction of reform, that ignores the rate of improvement before the reform's introduction, is counterfactual in that it exaggerates the benefits. Considering that many military functions were the subject of business process re-engineering and other efficiency reviews before they were outsourced under the CSP, the data that does exist to measure savings is likely to be counterfactual.

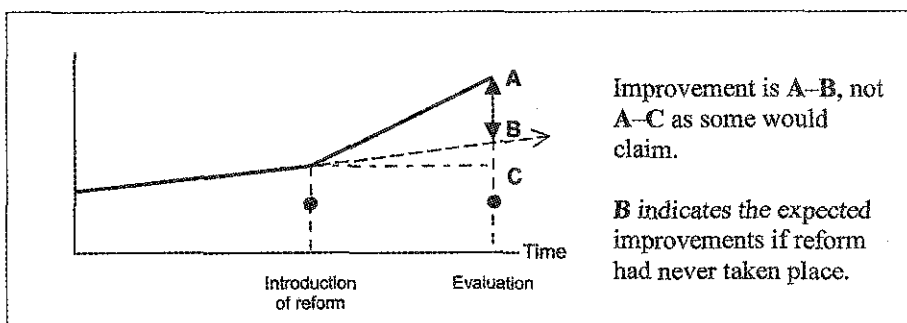


Figure 2.2 Counterfactual Data.¹⁹

Hypothetically, and in reality for some early CSP cases, the costs of the process far exceeded the costs of the savings estimated by outsourcing over the period of the initial contract. The Australian National Audit Office (ANAO) concluded that the CSP program had contributed to more cost-effective provision of Defence support services. However, the ANAO considered that '... the exact savings being achieved

¹⁸ Rawlinson, *Capability Outcomes of Outsourcing*, pp. 17-8.

¹⁹ John Quiggin, *Great Expectations: microeconomic reform and Australia*, Allen and Unwin, Sydney, 1996, pp. 202-3.

cannot be adequately quantified because of difficulties in tracking costs both before and after CSP and changes in the allocation of tasks during the CSP process'.²⁰

Expanded Scope

With core functions defined as combat, combat-related and functions of State; the scope of CSP has been progressively broadened under DRP to encompass all 'non-core' support functions.

QUALITY PRODUCT

A report released by the Industry Commission in 1995 summarised a number of Australian and overseas studies on the effect of Competitive Tendering and Contracting (CTC)²¹ on service quality.²² The foreign studies were unanimous in finding that quality reductions predominate. The Australian studies were split, with half citing quality reductions and the rest producing mixed results. In his 1996–97 annual report, the Commonwealth Ombudsman observed that there had been a rise in complaints directly related to quality issues and illegality of agency's actions as a result of outsourcing. Of more concern to the Ombudsman however, was the apparent lack of accountability these outsourced agencies had to the public and Parliament.²³ (This latter point stems from the acceptance of commercial confidentiality as a part of CTC and has weakened considerably the public accountability previously possible through Auditors General.)

Anecdotal evidence of a decline in service 'standards' as a result of the CSP is present throughout Defence.²⁴ However the term 'standards' is a misnomer in that it alludes to a common frame of reference between the military organisation previously performing the function and the contractor performing that function now. This is simply not the case; which explains much of the perceived (and actual) degradation in performance. Outsourcing programs put in place will not have the same results in every environment due to differences in the environments.²⁵ Whilst many outsourced Defence functions are conducted at the same locations they were when uniformed

²⁰ Australian National Audit Office, *Commercial Support Program*, p. 10.

²¹ CTC programs permit in-house options to be considered in competition with external bids. Outsourcing does not permit an in-house option. The Defence Commercial Support Program generally, but not always, permits in-house options to bid.

²² Industry Commission, *Draft Report on Competitive Tendering and Contracting by Public Sector Agencies*, AGPS, Melbourne, 1995.

²³ 1996–7 Commonwealth Ombudsman's Annual Report, in James D. Hunter and G. Richard Gates, 'Outsourcing: "functional", "fashionable" or "foolish"?' in Griffin, Garard (ed.), *Management Theory and Practice: moving to a new era*, Macmillan, Melbourne, 1998, p. 134.

²⁴ A series of private interviews and group seminars conducted over an eight month period between the author and maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

²⁵ James D. Hunter and G. Richard Gates, 'Outsourcing: "functional", "fashionable" or "foolish"?' in Griffin, Garard (ed.), *Management Theory and Practice: moving to a new era*, Macmillan, Melbourne, 1998, p. 138.

people performed them, the culture of the working environment and that of the workers themselves is very different. Some managers seem to not understand this.

THE CULTURAL DIVIDE

One simple way to describe the difference in the working environments is to look at why ADF personnel, through their culture and ethos, are different to mainstream Australian society. The Review of Australian Defence Force Remuneration (the *Nunn Review*), released in October 2001, describes the ADF as ‘... a most unusual occupational group in the Australian community’.²⁶ This echoes the sentiments of the Defence Force Retirement and Death Benefits (DFRDB) Scheme Review Committee who, in 1990, noted that three things in particular define ADF personnel as being significantly different from other members of the workforce.²⁷ These are the liability to engage in combat operations, the lack of a contractual relationship with the Commonwealth²⁸ and their subjection to discipline that ordinary employees are not.²⁹ The DFRDB Scheme review committee included in its report an excellent and comprehensive description of the main characteristics of military service, which is valid today and is likely to be enduring. The description was based on a letter submitted to the committee by the then Acting Chief of the Defence Force, Vice Admiral M.W. Hudson, and is worthy of reproduction once again in this paper:

The main characteristics of military service are:

- liability for combat operations
- a military discipline code
- a regimented way of life
- long and irregular working hours
- statutory retiring ages well below the community norms
- high standards of physical fitness
- frequent relocation
- separation from family.

²⁶ Barry Nunn, Peter Kennedy and Les Cupper, *Review of Australian Defence Force Remuneration*, Commonwealth of Australia, Canberra, 2001, p. 27.

²⁷ Report of the Defence Force Retirement and Death Benefits Scheme Review Committee, in Nunn, Kennedy and Cupper, *Review of Australian Defence Force Remuneration*, pp. 37–9.

²⁸ ADF members are not employees at law and do not come under the auspices of the Industrial Relations Act 1988. Additionally, ADF members have no rights to be represented collectively, engage in collective action or negotiate their terms and conditions.

²⁹ ADF members are subject to both the civil legal code and a separate disciplinary code—the Defence Force Disciplinary Act 1902 (DFDA).

The principal distinguishing feature of military service is the liability for combat operations. This liability is both compulsory and continuous. No other employment group has a similar liability. Other special features flow from this liability.

ADF members are subject to both the civil legal code and a separate Defence Force disciplinary code. The disciplinary code supports the command structures necessary for the effective conduct of combat operations and training. The Defence Force disciplinary code imposes restrictions on personal conduct; it demands different standards from those generally acceptable within the community; and it impinges on the individual's family life and leisure time.

The disciplinary code also impacts on the ADF collectively. For example, ADF members are precluded from engaging in industrial action. The creation of the Defence Force Remuneration Tribunal to determine pay and allowances for the ADF is recognition of the ADF's unusual industrial situation.

Another industrial aspect of ADF service is the liability to work long and irregular hours. Operational tasks, assistance to the civil community and training activities cannot be tied to set hours. The requirement to work extra hours is unpredictable and often arises at short notice. More importantly, ADF members are obliged to work whatever hours are demanded to complete an assigned task. No overtime is payable but some allowances, particularly Service Allowance, recognise the disability and provide compensation.

Allied to the long working hours is separation from families. The periods of separation can be considerable, particularly for members in operational units. Separation causes stress to both members and families.

Another major cause of stress is the necessity to post members at regular intervals to meet ADF manning requirements. Not only do postings involve geographic relocation, sometimes to relatively unattractive places, but also employment in positions demanding acquisition and utilisation of new or different skills. The limited capacity to laterally recruit exacerbates the posting frequency and employment in unfamiliar environments. Family life in particular can be adversely affected; for example, with respect to spouses' employment opportunities and the quality and continuity of children's education.

Operational tasks and training for combat are demanding activities. Technology in many cases reduces physical effort but ADF service requires that members maintain a high standard of physical and mental fitness. The consequence of failure to satisfy the ADF standard is severe. A member is discharged from military service where any medical condition precludes effective ADF employment.

The demands of ADF service also lead to statutory retiring ages which are considerably lower than the community norm. While most ADF personnel can serve to age 55 some officer categories are compulsorily retired at ages between 45 and 50. Because alternative employment opportunities become increasingly limited after about age 40 most ADF members resign prior to attaining statutory retiring age. This suits current ADF personnel management practices.

Of the major characteristics of military service the liability for combat and the military discipline code are, of course, peculiar to the Defence Force. Other characteristics of military service are derived from or related to these characteristics. Some of these characteristics do occur also in other occupations but only individually. It is the cumulative impact of all the features which constitutes the special nature of the ADF and which distinguishes it from other occupations.

The special nature of military service makes necessary conditions of service which are designed to make proper provision for the interests of ADF members. (Report of Defence Force Retirement and Death Benefits Scheme Review Committee, p. 11).³⁰

Having acknowledged that military personnel and civilian employees have different frames of reference, it is easy to see how the same can be said of their respective managers. Therefore, what military managers perceive to be a reduction in service quality is not likely to be seen the same way through the eyes of their civilian counterparts. Early analysis of CTC assumed similarities between large public and private enterprises, but newer approaches take for granted the superior efficiency of the private sector.³¹ The public sector is now seen to have the role of purchasing services rather than providing them. This implies that public services can be defined, and their delivery can be monitored sufficiently to make the roles of purchaser and provider distinct and separate.

³⁰ Nunn, Kennedy and Cupper, *Review of Australian Defence Force Remuneration*, pp. 36–7.

³¹ Quiggin, *Great Expectations*, pp. 174–5.

OUTSOURCING RISK

The Department of Defence has similarly taken for granted that the private sector can perform functions and provide services more efficiently than ADF organisations. However, the ADF has never been able to accurately define the outputs from and inputs to its various elements, let alone the interdependence between each element and the others. The ADF has also found measuring its own performance a difficult, if not impossible task, because of the many intangibles involved. Finally, the interdependence between Defence elements makes it impossible to accurately distinguish between the 'customer' and 'supplier'. It is difficult to understand, therefore, how Defence has managed to separate various functions within the ADF and contract them out; but it is very easy to understand why the efficiencies sought have not been achieved and how effectiveness and, perhaps, capability are likely to have suffered. If the services previously provided, or the quality requirements, are not adequately stipulated in the contract, it is reasonable to assume that the minimum quality will be provided.³²

Contracting out is desirable if the risk is easily monitored and controlled by the contractor, and performance is easily observable and can be legally enforced.³³ As stated previously, performance measurement in Defence is not an easy thing. Many aspects of military functions are intangible and are therefore impossible to articulate in a contract. In Defence maintenance contracts, the risk of failure to achieve a required level of performance is borne by the ADF. Regardless of whether the contractor or Defence bring about a performance failure, any impact on capability is something only the ADF can mitigate. The worst that can happen to the contractor if the fault lies with them (and the ambiguity of Defence contracts often makes this difficult to prove) is a financial penalty. The risk of outsourcing aircraft maintenance, or any other function for that matter, increases dramatically the more instrumental that function is in maintaining Defence capability. Considering that the majority of aircraft maintenance—both within Defence and outsourced—is performed as efficiently as possible, with minimised spares holdings and streamlined processes, there is little room for error. Any delay in production or supply is likely to have a direct bearing on capability. Therefore the outsourcing of aircraft maintenance can justifiably be considered undesirable.

LATENCY

Latency, as described in Chapter 1, resides in most capital equipment used by the ADF that can be operated much more intensively in wartime than during routine peacetime activities. To be fully exploited this latency normally requires a

³² Quiggin, *Great Expectations*, p. 179.

³³ Quiggin, *Great Expectations*, pp. 176–7.

complementary increase in numbers of trained combat personnel and logistic support. Together they represent latent capability.³⁴

Whilst maintaining latent capability in the defence force or other emergency services is normal practice, latency costs money. Just how much latent capability to maintain is therefore a matter of balance and judgement.

Latency flows from the flexibility, versatility and adaptability of trained military personnel. They all have basic military skills as well as their technical or administrative skills and some have specific military skills. As well as being available to be used in deployments and direct support some may be directly substituted for combat force members. Their latency can therefore contribute to either readiness or sustainability.

Every time a uniformed person is replaced or substituted with a civilian, there is a presumption of a loss of latency. Latency costs money. The substitution of 'just-in-time' for 'just-in-case' (latent capability) can be particularly appealing as it reduces recurring costs and shifts any increase of expenditure into the future. From a preparedness point of view, providing there is sufficient time to make the future recruiting and training investment before it is needed, the latency foregone represents a genuine saving. Where personnel who operate or maintain high technology equipment have long-training times and are multi-skilled, physically fit and deployable, the risk may be unacceptably high.³⁵

The cost of latency is a combination of:³⁶

- the differences between the personnel costs of military and civilian staff;
- the costs of ongoing military training and the costs of the time required for maintenance of military skills and physical and medical fitness;
- the costs associated with postings, including the direct and opportunity costs of retraining at the new unit; and
- the costs of multi-skilling in logistics/maintenance disciplines.

The essence of modern industrial practice is the elimination of latency and excess capacity by lean production and production support techniques designed to minimise inventories, and therefore inventory investment, by the 'just-in-time' delivery of component parts. Similar approaches are applied in service industries. Unless latency is deliberately, and explicitly built in to the specification of activities to be market

³⁴ Rawlinson, *Capability Outcomes of Outsourcing*, p. 8.

³⁵ Rawlinson, *Capability Outcomes of Outsourcing*, p. 9.

³⁶ Rawlinson, *Capability Outcomes of Outsourcing*, pp. 9–10.

tested, all tenders, including in-house options will exhibit a business oriented approach to the exclusion of contingency requirements.³⁷

A muddled perception commonly associated with the Commercial Support Program is that savings are derived solely from gains in efficiency that are reached under the threat of competition when activities are subject to market testing. In the majority of cases this is only partially true, as:

$$\text{SAVINGS} = \text{EFFICIENCY GAINS} + \text{LATENCY FOREGONE}$$

In many cases the bulk of savings can be attributed to the latency foregone in changing to a commercial approach. This loss of latency may not be serious at all, and on a capability basis may be a legitimate saving. Too much latency clearly involves waste. On the other hand, the latency foregone may represent a significant reduction in capability, the retention of which should have been included in the original specification. The focus must be on the most efficient means of achieving the required capability, not on making the greatest savings in peacetime operating costs.

Another concern has been the rapid pace of the CSP. Often, military positions disestablished under the CSP lie vacant waiting for civilians to take them up. In early 2001 the then Chief of Air Force, Air Marshal Errol McCormack, noted that after a decade of continual reform the RAAF's uniformed strength reduced by 44 per cent to 13,000. The 10,000 disestablished positions were to be taken up by civilians under CSP, however, this has been slow to occur and there are actually some 2500 personnel covering the gaps whilst also doing their assigned work. The RAAF is, therefore, paying twice to outsource its own staff, and many of the individuals involved are working upwards of 70 hours per week.³⁸

CASE STUDY—F/A-18 HORNET R3 SERVICINGS

A good example of the difficulties and dangers of contracting out aircraft maintenance is the current debate over the outsourcing of R3 servicings of F/A-18 Hornet aircraft at RAAF Base Williamstown. R3 servicings are mid-level, routine servicings³⁹ traditionally performed by uniformed personnel within Unit maintenance facilities. Although routine servicings vary between different types of aircraft, R1 and R2 servicings are usually considered to be Operational Maintenance, and R4 and R5

³⁷ Rawlinson, *Capability Outcomes of Outsourcing*, p. 10.

³⁸ Alan Stephens, 'People First: the RAAF and the White Paper', *Asia-Pacific Defence Reporter*, Vol 27, No 1, February 2001, pp. 20–2.

³⁹ Routine servicings are conducted at regular intervals to perform preventative maintenance in a manner similar to automotive manufacturers' recommended servicing schedules for cars. Routine servicings are graded according to the level, or depth, of maintenance required. For example, an R1 is generally the minimum level of routine maintenance and may involve the replenishment of certain consumables, and minor structural and operational checks that involve only minor disassembly of the aircraft, ie. panel removal. An R5 on the other hand may involve completely stripping and refurbishing the entire aircraft. The deeper the level of servicing the more time the servicing will take and the less frequently it will be scheduled.

servicings are considered to be Deeper Maintenance. R3 servicings, however, lie somewhere in between.

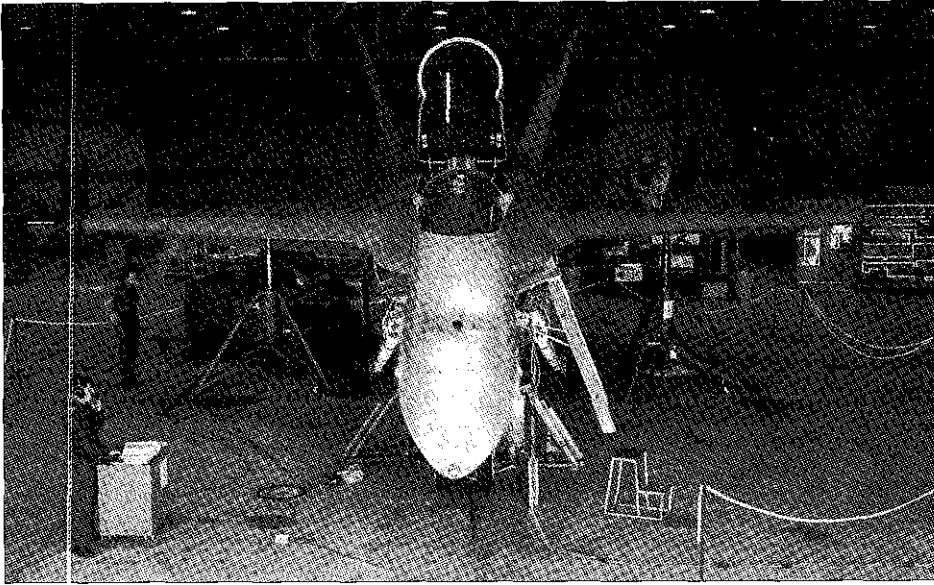


Figure 2.3 F/A-18 Hornet maintenance.⁴⁰

Background

In the early 1990s, the RAAF changed its maintenance policy from having three levels of maintenance—Operational (OLM), Intermediate (ILM) and Deeper (DLM)—to having only two levels—Operational (OM) and Deeper (DM). Whilst this change was purported to have been made to conform to industry standards, cynics tend to believe that the change was designed to allow the RAAF to easily segregate operational maintenance (a core activity) from deeper maintenance (described as a non-core activity) for the purposes of outsourcing deeper maintenance. Regardless of the reasons, R3 servicings were difficult to define as either OM or DM for they fell somewhere in between.

In the F/A-18 maintenance world, R3 servicings became an OM function. In the F111 world, in contrast, R3 servicings became a DM function. This was a fairly simple situation to manage when both OM and DM servicings were being performed by uniformed personnel in RAAF facilities. Interestingly, when F111 deeper maintenance (ie. 501 Wing) was outsourced in 2000, several workshops that were previously considered ILM but became DM as a result of the policy change, were redefined as OM because of their bearing on capability—directly, and through the

⁴⁰ Photograph from DEFWEB Image Gallery, <http://defweb.cbr.defence.gov.au/home/gallery.htm>.

development of technical mastery. This raises an interesting question with respect to how much of a bearing an activity has to have on capability for it to be considered an operational requirement.

Contract Labour

In the case of Hornet maintenance, a shortfall in the number of trained and experienced tradesmen has forced operational units to employ contracted tradesmen to supplement R3 servicing teams. Squadron maintenance managers stated that this has worked well for two main reasons.⁴¹ Firstly, the additional personnel are under direct control of the squadron's maintenance supervisors, working within the team, rather than a separate entity effectively in competition with the squadron's maintenance team for spare parts, consumables, tools and facilities. Secondly, the aircraft and their subassemblies remain under squadron control. F/A-18 squadrons, like most other operational squadrons, depend heavily on their ability to cannibalise parts from aircraft undergoing maintenance to keep other aircraft in the air, and vary maintenance schedules to suit operational requirements.⁴²

Cannibalisation

A brief discussion of cannibalisation is required here. The requirement to cannibalise stems from two problems—a lack of spare parts and assemblies, and the unnecessary induction of too many repairable assemblies into the repair pipeline. The first is a logistics issue and stems from a myriad of problems related to professionalism, corporate knowledge, manpower and communication, all predominantly managed externally to any squadron. The second is a maintenance problem relating to the modular nature of the modern aircraft. The inability of the aircraft's self-testing capability to isolate faults to only one assembly, and the inability of tradesmen—due to inexperience, inadequate fault isolation skills or simply for expediency—to isolate faults further, often results in several assemblies entering the repair pipeline when only one of them is actually unserviceable. The remainder are usually returned to Units after undergoing at least two fault isolation tests (the second for confirmation) with a maintenance record stating No Fault Found (NFF). Figure 2.4 illustrates the additional steps cannibalisation adds to the repair process. Cannibalisations increase maintenance workload by at least two times because they involve removing and installing components in two aircraft instead of one. They contribute to excess overtime, increase costs, increase the potential for mechanical damage to components,

⁴¹ A series of private interviews and group seminars conducted by the author over an eight month period with maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

⁴² Cannibalisation is the act of removing a serviceable part from an aircraft or assembly that, for other reasons, is not capable of completing an operational task, and fitting it to another aircraft or assembly so that it is capable.

and have been proven to affect morale and contribute to poor personnel retention rates (this latter point is taken up in Chapter 5).⁴³

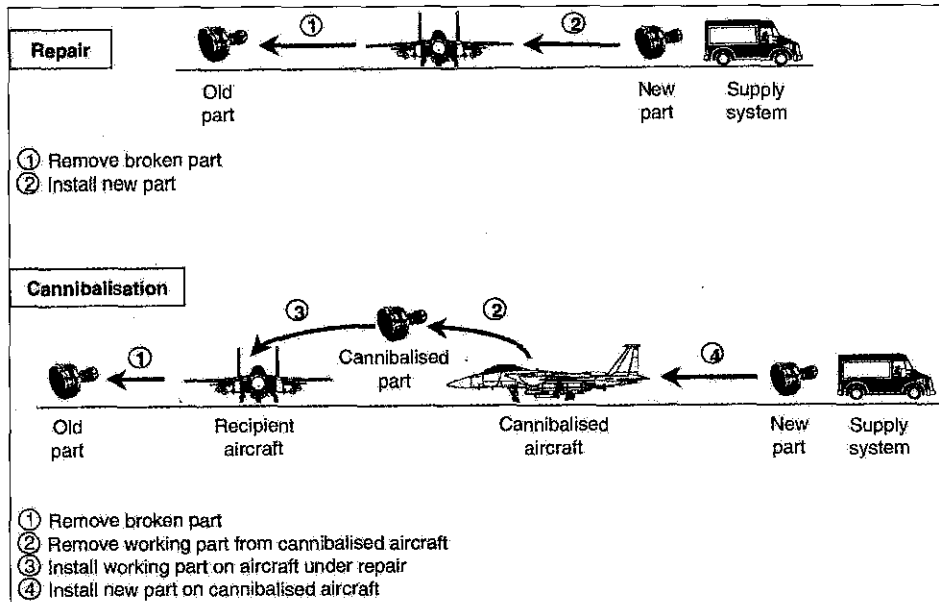


Figure 2.4 Repairs require two steps, cannibalisations four.⁴⁴

It should be noted that this situation is not isolated to Hornet, RAAF or even ADF aircraft maintenance. Cannibalisation is a standard operating procedure amongst military forces throughout the world. Whilst it is recognised that cannibalisation has detrimental effects, it is considered a 'necessary evil' without which capability would be reduced. United States Army studies have cited cannibalisation among the reasons for maintaining readiness rates at acceptable levels and concluded that readiness rates would suffer if units were not allowed to cannibalise. A 1987 study of US Army helicopter units found that readiness rates dropped more than 25 per cent when units were forced to stop cannibalisations as part of a controlled experiment, and readiness rates returned to previous levels when cannibalisations resumed.⁴⁵ Whilst cannibalisation is considered an operational imperative, and therefore will not be eliminated, it should be strictly controlled.

⁴³ Neal P. Curtin, *Military Aircraft: Cannibalisations Adversely Affect Personnel and Maintenance*, Testimony before the Subcommittee on National Security, Veterans Affairs and International Relations, US General Accounting Office, 22 May 2001, pp. 6, 8, 10.

⁴⁴ Curtin, *Military Aircraft*, p. 7, fig 4.

⁴⁵ Curtin, *Military Aircraft*, p. 12.

Impacts of Outsourcing

If Hornet R3 servicings were outsourced *in toto*, the impact on aircraft availability and maintenance workload would be devastating. Under a contractual arrangement, the squadron would be obliged to induct the aircraft into the contractor's facility with all assemblies fitted. Any requirement to remove an assembly from an aircraft would be likely to incur additional cost or cause an 'excusable delay' in the delivery schedule. The assemblies would therefore generally not be available to use on other aircraft leading to the likely situation that another aircraft would have to be sacrificed for parts to maximise the operational availability of others (without increasing the operating costs of the squadron). This would, in turn, increase the relative operational tempo of the maintenance crews, as they would have to ensure a greater percentage of the squadron's aircraft were available for tasking.⁴⁶ Maintenance resources would be stretched further, personnel would incur additional stress, morale would suffer and a downward spiral would begin, with cost blow-outs and personnel wastage being the likely outcomes.

As a money-saving exercise, the outsourcing of R3 servicings would probably not reduce costs significantly. The partial or total duplication of manpower, tools, equipment, facilities and management overheads would negate any savings as a result of wage reductions (the usual method by which contractors cut costs). In addition, if the contractor requires close regulation, which under DGTA regulations any Authorised Maintenance Organisation (AMO) does, the resulting arrangement is likely to be more costly than if not contracted out at all.⁴⁷ There is also a security overhead to be considered. If a high threat level is determined for a military base, as is likely during any contingency, access to the base will be limited to essential personnel only. All uniformed personnel will have to absorb the additional burden of having to protect military and civilian assets, any civilian employees and themselves, whilst ensuring the maximum availability of aircraft for high tempo operations for an indeterminate period of time.⁴⁸ Although not initially a cost in dollar terms,⁴⁹ the lack of military personnel available to provide adequate protection may see operational tasks dropped in favour of protective tasks.

⁴⁶ For example, an availability requirement of 12 out of 16 aircraft controlled by the squadron (excluding any under contract maintenance) means that maintenance crews need to ensure 75 per cent availability. If one of the available aircraft is required for cannibalisation, maintenance crews must make 12 out of 15 available, that is, 80 per cent. The higher the availability rate required, the less flexibility the maintenance crews have to achieving the requirement, and therefore the greater the demand placed on them.

⁴⁷ Quiggin, *Great Expectations*, pp. 176–7.

⁴⁸ Department of Defence, *Interim Policy and Guidance for the Deployment of Civilians in Support of Operations*, Circular Memorandum No. 40/99, 2 December 1999; Defence Instruction (General) OPS 05-3, *Civilians in Support of Australian Defence Force Operations*, 22 October 2001.

⁴⁹ There would, of course, be additional financial costs related to down time, rehabilitation, compensation, recruitment, retention and training associated with personnel burnout; and the costs of insuring civilian assets and personnel.

CONCLUSION

The case of F/A-18 R3 servicings is just one example of why the wholesale outsourcing of aircraft deeper maintenance may not be a wise path to follow. Not only is the risk of adversely affecting capability too high, there is little likelihood of significant cost savings. Also, the quality of service is likely to drop and the management overheads are likely to increase, with the cost of higher paid managers and consultants likely to offset any manpower savings.⁵⁰ This reasoning alone suggests that the ADF should perhaps revisit the philosophies that predicated the results of the Commercial Support and Defence Reform Programs. If you do not understand the business **very** well, do not analyse critically what may go wrong and what the benefits really are and, finally, do not realise that you can not predict the outcome entirely, how can you assess the risks and consequences, or compare the outcome to the original system?

The adoption of CSP policies has not been driven by concerns about the optimal allocation of risk as should be the case, but by a desire to cut the costs of service provision, frequently at the expense of employees. Much of the measured gain from contracting out has risen from reductions in wages and increases in work intensity. The net social gain from contracting out in such cases is far smaller than the measured gain, and in many cases it is negative.⁵¹ If the adage ‘people are capability’ is to be believed—and it should be—the net effect on military capability is also negative.

The following chapter addresses the organisational health of the ADF technical workforce and focuses, as expected, on aviation technicians in particular. It discusses the Technical Trades Restructure (TTR), a revolutionary change that has affected virtually every aspect of technical life in the ADF over the past decade, and how aspects of it have contributed to the significant ‘gap’ in technical skill and experience the ADF now faces. Further, the next chapter discusses the high workload faced by maintenance personnel and explains why it exists. Finally, it looks at the one pre-TTR technical trade group that the restructure failed the most—armourers.

⁵⁰ Quiggin, *Great Expectations*, p. 178.

⁵¹ Quiggin, *Great Expectations*, p. 183.

Technical Trades Restructure and Organisational Health

INTRODUCTION

No examination of the structural health of the ADF aerospace technical workforce would be complete without a review of the Technical Trade Restructure (TTR). The TTR was initially a RAAF initiative, the scope of which expanded to include not only the RAAF technical workforce, but also the entire ADF aerospace technical workforce and also affected many RAAF non-technical trades. In 1998, Wayne Jones wrote about the TTR in great detail, discussing the events leading up to its implementation, the scope and form of the changes it imparted and effects it had or could have on the RAAF technical workforce.¹ He encompasses the scope and effect of the TTR well in the following paragraph.

*When the Technical Trade Restructure (TTR) was first conceived in the late 1980s, it was merely another step in the evolution of the Royal Australian Air Force's aircraft technical workforce. But, by the time TTR was actually implemented in 1992 it had grown into a revolution encompassing virtually every aspect of technical life, from recruiting to training to employment. The sphere of influence of the TTR eventually became enormous, affecting virtually every structural aspect of every technical and non-technical trade.*²

In the interests of brevity, this chapter will not review the long history of the RAAF technical workforce. Rather, it will focus on the changes made by the TTR and examine the current situation facing technical trades in the ADF. The history of the RAAF technical workforce prior to the TTR is briefly covered in Jones' book, and more thoroughly described in Chris Coulthard-Clark's *From the Ground Up: the training of RAAF technical ground staff 1948–1993*.³

This chapter will discuss the perceived need for the TTR, its implementation and some of its legacies nine years after its introduction.

¹ Wayne Jones, *Aircraft Technical Trade Development: an airman's perspective*, Air Power Studies Centre, Canberra, 1998.

² Jones, *Aircraft Technical Trade Development*, p. xiii.

³ Chris Coulthard-Clark, *From the Ground Up: the training of RAAF technical ground staff 1948–1993*, Air Power Studies Centre, Canberra, 1997.

BACKGROUND

The introduction of the TTR was based upon a perception that continuing increases in aircraft complexity were exposing shortcomings in the training system's ability to provide personnel with adequate fault diagnosis skills.⁴ Exacerbating this situation was the increased level of avionics integration of the newer aircraft, which blurred the lines of demarcation between the aviation trades as they were defined at the time. As a stopgap measure to address the concerns over diagnostic capabilities, particularly in the avionics field, Systems Technicians (SYSTECHs) were introduced as a new trade group in 1980. The title selected also reflected the system focus of the new group, distinguishing it from the trade focus that existed up to that point.

Systems Technicians

The SYSTECH trade group consisted of two musterings; avionics (AVSYSTECH) and aircraft (ASYSYSTECH). The AVSYSTECH mustering was employed to work across the avionics trades of electrical, instrument and radio; whilst the ASYSYSTECHs would work on mechanical aspects of the aircraft such as engines and airframes. The mustering was staffed through the selection of existing qualified tradesmen from the 'allied' trades who were given additional training to increase their capabilities and effectiveness, and were subsequently promoted to the rank of Sergeant.⁵ Whilst the introduction of the trade group helped in some areas to improve diagnostic capabilities, the change had wider implications.

The employment of SYSTECHs was intended to be through the establishment of segregated cells, where they would perform complex problem solving and para-professional engineering tasks.⁶ However, realisation of the need for SYSTECHs, and the speed of their introduction, was not complemented by an occupational analysis to determine the best method to employ them and integrate them into the extant maintenance system or culture. The result was that many, particularly AVSYSTECHs, were not employed as originally intended, but in trade management. At the Senior Non-commissioned Officer (SNCO) level, this led to the perception that SYSTECHs were 'job stealers' and would threaten the promotion prospects of the other trades, despite the fact that they were not actually in competition for promotion. This perception was exacerbated by the introduction of an automatic promotion system designed to fill the new trade group's higher ranks quickly after its inception.

Technologist Apprentices

The aim of increasing the diagnostics capability of technicians was satisfied through another approach as well. In 1982 the existing apprenticeship scheme was modified to

⁴ Jones, *Aircraft Technical Trade Development*, p. 10.

⁵ For those unfamiliar with Australian military ranks, a cross-reference table has been included as Annex A to this paper.

⁶ Jones, *Aircraft Technical Trade Development*, p. 11.

include Technologist Apprentices (TECHAPPs).⁷ These were slightly older than their Trade counterparts (17–21 years old) and were selected via higher entry standards to undertake a course that was an amalgamation of the standard apprenticeship and a Certificate of Technology through the Royal Melbourne Institute of Technology. Once again, whilst the resultant injection of diagnostics capability was the result desired, the lack of understanding of how best to employ and integrate these new tradesmen, and an impression that they should have some kind of special status, engendered resentment and uncertainty amongst their peers. There was a belief amongst tradesmen (including many of the TECHAPPs themselves) that these new ‘super techs’ would be fast-tracked to become SYSTECHs, gaining an unfair advantage and threatening the promotion prospects of their peers.

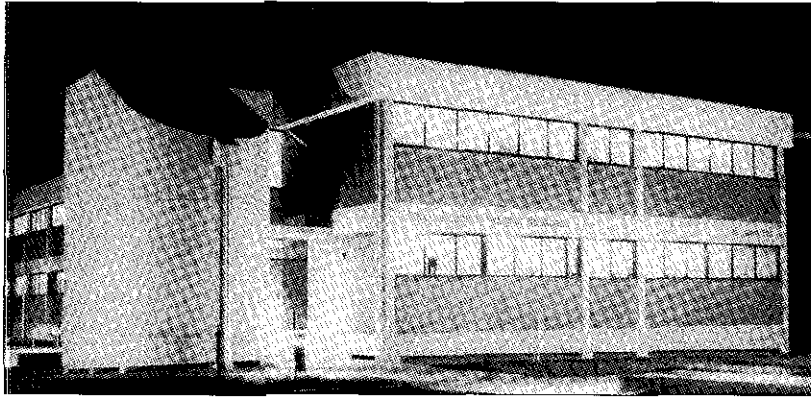


Figure 3.1 RAAFSTT's Technologist Training Squadron.⁸

THE TRADE REVIEW

Trade Training

The introduction of the TTR into the RAAF fundamentally altered the way in which RAAF technicians were trained and managed. Prior to its introduction in 1992, RAAF aircraft technicians were trained as independent or discrete trades. However, there was a view that the training conducted at the RAAF School of Technical Training (RAAFSTT) and RAAF School of Radio (RADS) was divorced from the eventual workplace, and the use of generic and often obsolete training equipment was inadequate. In addition to this, some of the training modules the individual trades

⁷ Jones, *Aircraft Technical Trade Development*, p. 11.

⁸ Photograph courtesy of RAAF Wagga Historical Section.

undertook were unnecessarily duplicated and offered scope for rationalisation and commonality.⁹

By reducing duplication and eliminating 'unwarranted' training, thereby providing a training system tailored to the graduation requirements of the individual trades, the TTR promised large productivity gains. The TTR significantly reduced the length and the cost of the initial technical courses and exposed technicians to operational aircraft far earlier in their service careers.¹⁰

Weapon System Streaming

At around the same time as these changes were being effected, tradesmen started to be streamed into different weapon systems. This was seen as an adjunct to the resolution of low aircraft maintenance and fault diagnosis knowledge specific to aircraft types. The RAAF aircraft inventory was divided into four weapon systems—Strike/Reconnaissance, Fighter, Transport and Maritime. The intention of weapon system segregation was to ensure a continuance of training and experience building throughout the earlier portion of a tradesman's career, thereby improving the requisite skill and experience levels within the weapon systems. Before this, the focus of a tradesman's development was on generic skills building because he or she could be posted from one aircraft type to another with little restriction.

Weapon System Employment Streamers (WSES) were employed by the Directorate of Personnel Airmen – Air Force (DPA-AF) to monitor and coordinate the training and experience requirements of each weapon system, and to facilitate the career management of personnel within each weapon system. They were situated at the Air Force base with the highest concentration of personnel within their weapon system, however, most WSES were responsible for a number of personnel at different bases, employed on a variety of aircraft types, and within non-weapon system posts such as training and logistics.¹¹ This made their task extremely difficult in any cases. The distribution and responsibilities of WSES are depicted in table 3.1.

⁹ Anthony P. Grady, *The Impact of the Technical Trade Restructure on the RAAF's Ability to Sustain Offensive Air Operations*, Staff Course Reynolds Paper, SC10/26/Air, 30 September 2000, p. 2.

¹⁰ Grady, *Impact of the Technical Trade Restructure*, p. 2.

¹¹ Jones, *Aircraft Technical Trade Development*, p. 29.

Weapon System	Aircraft	Location of WSES	Locations of Responsibility
Strike/Recon	F111	Amberley	Amberley
Fighter	F/A-18 Hornet, Macchi, PC9	Williamstown	Williamstown, Tindal, Edinburgh, Pearce, East Sale
Transport	Hercules C-130, Boeing 707, Caribou, HS748, Falcon 900	Richmond	Richmond, Amberley, Townsville, Darwin, Pearce, East Sale, Fairbairn
Maritime	P3C Orion	Edinburgh	Edinburgh, Richmond

Table 3.1 Distribution and responsibilities of Weapon System Employment Streamers.¹²

Trade Amalgamation

Perhaps the most significant change imposed by TTR was the amalgamation of the eleven extant aircraft trades into three trade groups—Aircraft, Aircraft Structures and Avionics.¹³ Table 3.2 outlines the new TTR trades and the original trades subsumed by each.

Avionics	Aircraft	Aircraft Structures
Avionics System Technicians	Warrant Officers Engineering	Aircraft Structural Fitters
Radio Technicians (Aircraft)	Aircraft Systems Technicians	Aircraft Welders
Electrical Fitters	Airframe Fitters	
Instrument Fitters	Engine Fitters	
Armament Fitters (Part)	Armament Fitters (Part)	

Table 3.2 New Trade Structure.¹⁴

Under TTR, parent units were given the flexibility to manipulate the skills of their technical workforce to match their unique operational requirements by providing specialist training to identified personnel. A number of specialist courses were developed or modified to complement the changes introduced by the TTR and to cultivate those discrete skills necessary for squadron operations not specifically addressed by mainstream training modules. Theoretically therefore, shortages in any

¹² Jones, *Aircraft Technical Trade Development*, p. 29.

¹³ Grady, *Impact of the Technical Trade Restructure*, p. 2.

¹⁴ Directorate of Technical Trade Restructure, *RAAF Technical Trade Restructure Synopsis and Questions/Answers Supplement*, 1991, p. 6, in Grady, *Impact of the Technical Trade Restructure*, p. 2.

particular specialist area would be resolved by having selected personnel complete the necessary training module/s. This apparent strength, however, was also TTR's biggest problem.¹⁵

*Whilst TTR ultimately produced a product tailored to the requirements of the parent unit, it also added significantly to the unit's training burden and the time taken to produce a fully qualified and useable technician within the unit. Additionally, whilst the number of specialists might be determined by squadron requirements, the availability and suitability of personnel to complete the specialist training module was not assured. Nevertheless, for most of the technical trades the advantages of TTR outweighed the disadvantages. TTR offered some degree of flexibility within unit resources to manage the closely aligned trades — those trades where significant synergies existed.*¹⁶

One aim of the TTR was to address the shortcomings in the training system's ability to provide personnel with adequate fault diagnosis skills. With the addition of policies that restricted employment to within individual weapon systems, another factor that should have improved is experience levels across the technical trades. Now, almost ten years after the implementation of the TTR, it is timely to consider the organisational health of the RAAF, and ADF, aviation technical workforce in 2001.

EXPERIENCE LEVELS

Without doubt, the main concern of commanders, maintenance managers and technicians alike is that rapidly declining experience levels across all technical trades will lead, and in some cases have led, to a degradation of the ADF's aviation maintenance capability.¹⁷ On one hand, this is a direct result of the ADF's inability to retain skilled and experienced personnel. On the other, the decline in experience levels is also the result of the ADF's inability to 'grow' technical personnel at an adequate rate to compensate for the rate of separations. Unfortunately, it is unlikely that Defence will ever be able to redress fully the retention problem nor create an accelerated training and employment regime to compensate. Whilst Chapters 4 and 5 discuss ADF recruitment and retention generally and in more detail, an understanding of this most serious problem and how it is affecting ADF air power capability is required here.

¹⁵ Grady, *Impact of the Technical Trade Restructure*, p. 2.

¹⁶ Grady, *Impact of the Technical Trade Restructure*, p. 2.

¹⁷ From a literature review on the subject, and the documents and comments provided during a series of private interviews and group seminars conducted over an eight month period with maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

What Does 'Experience Level' Mean?

Experience is defined as the 'knowledge or practical wisdom gained from what one has observed, encountered, or undergone'.¹⁸ Experience therefore, is much more than simply training. It is an accumulation of knowledge gained through training, the application of that knowledge in practice and the continued application of that knowledge in a variety of situations. The knowledge gained is also not restricted to that learned in training or reinforced afterwards. Much of the knowledge a technician gains is purely from experience. This includes the observation of others in the work place to see what they do, how and why they do it, and what the positive and negative outcomes of their activity are. Broader than their individual trade training and associated technical experience, as tradesmen experience more aspects of the operation of their Service and the ADF—and indeed increase their interaction with the civilian community—in different environments, they also gain experience in management, leadership, diplomacy, politics, administration, finance, operations and staff duties, among other things.

Experience level, therefore, is a qualitative measure of how much a tradesman has learned and experienced over time. Quite often RAAF squadrons quantify an average experience level based on the length of time its technical personnel have spent working on an aircraft type. As an example of the severity of the problem, the experience levels at some RAAF squadrons are less than two years on type.¹⁹ The figures in this case were calculated across the ranks LAC through SGT; these being considered the 'tradesmen' ranks as opposed to management.²⁰ Although most other squadrons have yet to quantify their experience levels, the majority of Army and RAAF squadrons, and all Navy squadrons, have reported excessively low experience levels across the board.²¹ In the cases of the Army and RAAF squadrons, this is despite reasonably good manning levels (around 90–95 per cent).

Being Prepared

As tradesmen progress through their careers in the ADF, they undertake a number of formal courses aimed at equipping them with the knowledge they need to perform at the level required to contribute effectively to the maintenance of ADF capability; but what is the level required? In wartime, commanders would most likely desire the most knowledgeable and experienced personnel possible, and enough of them, to ensure

¹⁸ *The Macquarie Concise Dictionary*, p. 388

¹⁹ Source not disclosed for reasons of National Security.

²⁰ Take into consideration that:

- it takes around two years on-the-job training for a tradesman to fulfil all the requirements of his or her competency journal and be considered fully trained;
- starting with a newly graduated tradesman, it takes around four to five years experience on type (including the time spent completing their journal) to be qualified as a trade supervisor (CPL);
- it takes five to six years for even the best CPLs to be promoted to SGT.

²¹ A series of private interviews and group seminars conducted by the author over an eight month period with maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

maximum flexibility in support of operations. As discussed in Chapter 2, this is an expensive capability to maintain. In terms of the costs of training and personal development, and exercises and postings to maximise experience, the ADF cannot afford to have all personnel prepared and ready for war at all times. Therefore the ADF must adapt for peace, ensuring that its personnel, as well as its equipment, are prepared to ramp up to the levels required of them in wartime.

In preparing for war, ensuring there are an adequate number of personnel with the requisite skills and experience requires careful planning. Consider a generic process for deploying to, and supporting operations within, an area of operations (AO). Generally when initially addressing a contingency situation, an Initial Deployment Force (IDF) comprising a core of suitably trained and experienced personnel would be used. There would then be a secondary body of personnel that could be quickly brought up to the same level of capability to support and relieve the initial force as required. If the conflict became protracted, extended lines of communication and supply would become less efficient, so more people and equipment would generally be moved forward toward the area of operations.

To support this scenario, the systems the ADF has in place to train and develop its personnel must be capable of ensuring the availability of suitable personnel for an IDF, and able to train and develop more personnel at a rate sufficient to ensure the longer-term sustainability of the force. This is commonly referred to as 'just-in-time' training. Considering the time it takes to 'grow' a trained and experienced technician, and the fact that most contingencies to which the ADF responds offer only short warning times, this approach is often referred to cynically as 'just-too-late' training.

GROWING EXPERIENCED TECHNICIANS

Pre-TTR Training and Development

Before the TTR brought about the amalgamation and rationalisation of ADF aviation training, each of the Services conducted its own technical training courses at different locations. As an example, at RAAFSTT the RAAF conducted courses ranging in average length from 52 weeks for Adult Trainees²² (the bulk of the technical workforce at the time) through to three years for Technologist Apprentices.²³ Engineering Apprentice course lengths, which were considerably longer than Adult Trainee courses because of a greater depth of study and additional subjects required

²² Adult Trainees were mature entrants, aged between 17 and 34 years, who had generally completed at least Year Ten at secondary school.

²³ Engineering apprentices were aged between 15 and 17 years and completed a course similar to public apprenticeships. Technologist apprentices were slightly older (17 to 21 years) and completed a Certificate of Technology through RMIT in addition to their apprenticeship training. All apprentices were required to complete two years on-the-job experience before being granted their trade qualification.

for civil apprenticeship alignment, varied over the years from three years to around 80 weeks before the scheme was discontinued.²⁴



Figure 3.2 Air Commodore Don Tidd inspects the final Apprentice graduation parade on 29 March 1993.²⁵

After the completion of generic trade training at RAAFSTT, tradesmen graduated as fitters at the rank of Aircraftsman/Aircraftswoman (AC/ACW).²⁶ They were then posted to their first operational (or support) units where they underwent aircraft, equipment and squadron specific training as required, started to consolidate what they had learned through application, and started to gain ‘real-life’ experience. Promotion through the ranks was based on trade knowledge, performance, experience, leadership ability and service attitude (through the Annual Evaluation Report²⁷) in line with other musterings. Figures 3.3 and 3.4 are notional training and experience profiles designed to illustrate the likely growth of skill and experience pre-TTR.²⁸

²⁴ Jones, *Aircraft Technical Trade Development*, p. 44–5.

²⁵ Photograph courtesy of D.C. Hersey.

²⁶ Radio tradesmen graduated as ‘technicians’, despite there being little difference in depth or complexity between radio courses and, for example, the TECHAPP or Instrument Fitter courses.

²⁷ Refer Defence Instruction (Air Force) PERS 4-2, *Airmen and Airwomen Performance Evaluation System*, 20 November 1997.

²⁸ In considering how long it takes to ‘grow’ an experienced technician one must be cognisant of the fact that everyone develops at a different rate. The figures used here are therefore illustrative—based on personal experience and the opinions of maintenance managers in the field.

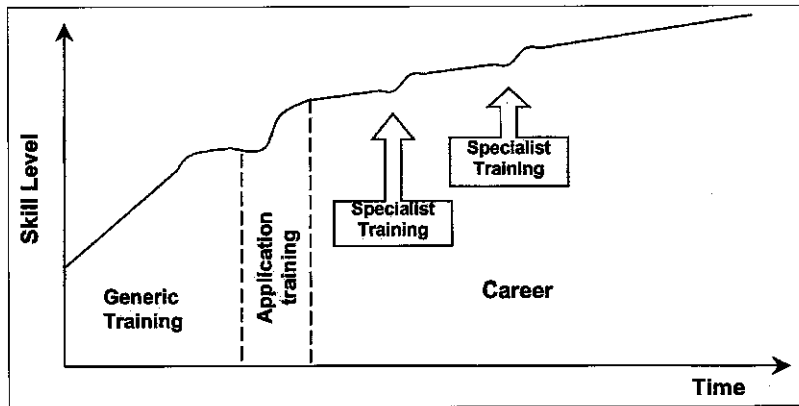


Figure 3.2 Skills development over time (pre-TTR).

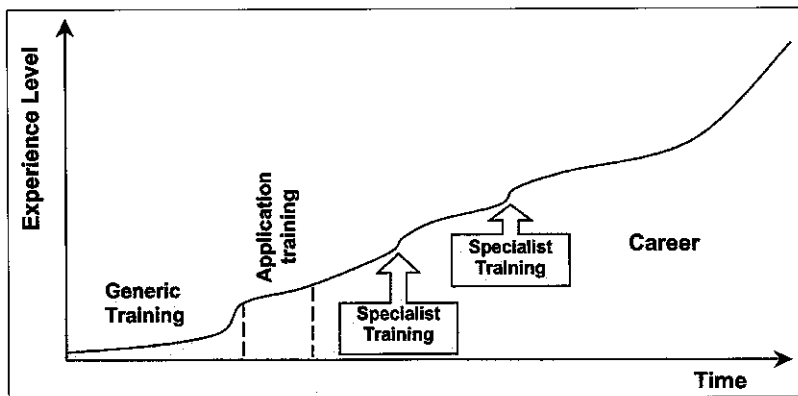


Figure 3.4 Experience growth over time (pre-TTR)

Post-TTR Training and Development

Initially the TTR introduced three levels of training: mechanic, fitter and technician. This changed in around 1999 back to a system of 'straight-through' technician training because of a perceived failure in the integration and employment of lower skilled tradesmen. It is the current system that is described here.

After completing basic military training at their respective Service recruit training units, potential aircraft and avionics technicians undertake either a 47 week²⁹ Aviation

²⁹ Headquarters Training Command (Air Force), *Training Specification: Aviation Technician Aircraft (ADF)* - 226629, <http://wilis002.sor.defence.gov.au/gsgt/grdetl.asp?GRID=7200&PRT=1>, accessed 1 October 2001.

Technician Aircraft course or 52 week³⁰ Aviation Technician Avionics course at RAAFSTT. Navy and Army tradesmen then go on to complete further modules specific to the requirements of their respective Services.

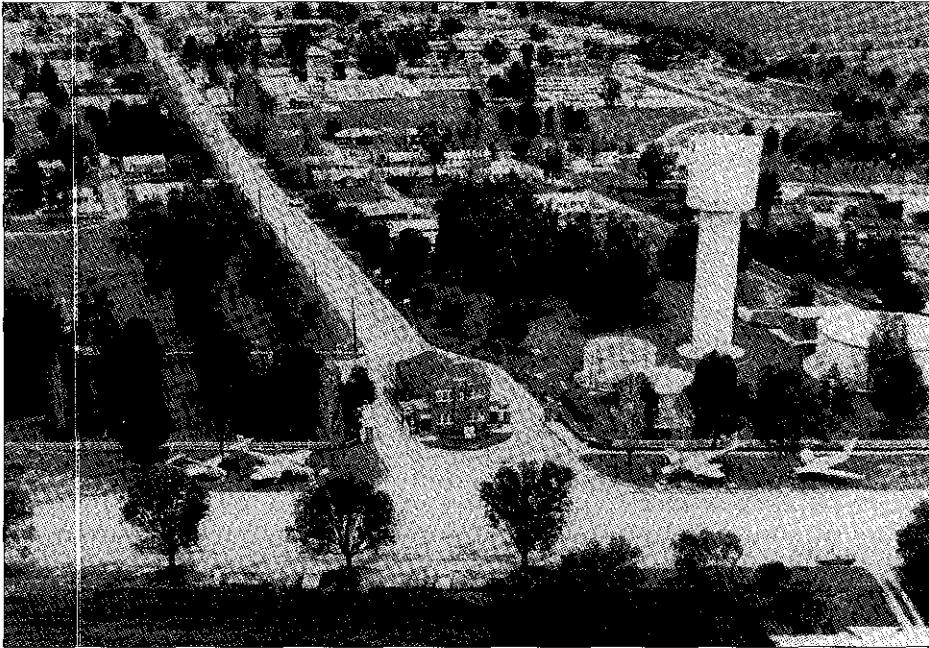


Figure 3.5 Historical photograph of RAAF Wagga, home of RAAFSTT.³¹

Upon graduation from RAAFSTT, the level of skill and experience of tradesmen is roughly equivalent to that of pre-TTR RAAF Adult Trainees, although the trade-off between multi-skilling and trade specialisation makes accurate comparison difficult. The ADF no longer trains technicians to the depth and breadth of engineering or technologist apprenticeships. In the RAAF, the development of skills and experience after graduation is not too dissimilar from that experienced by tradesmen prior to the introduction of TTR, with the following exceptions:

- Graduates are granted the rank of Leading Aircraftsman/Aircraftswoman (LAC/LACW).
- Graduates are classified as Fitters until the completion of a competency journal in accordance with the National Aerospace Curriculum, after which they are reclassified as Technicians. This usually takes around two years.

³⁰ Headquarters Training Command (Air Force), *Training Specification: Aviation Technician Avionics (ADF)* - 618230, <http://wilis002.sor.defence.gov.au/gsgt/grdetl.asp?GRID=7201&PRT=1>, accessed 1 October 2001.

³¹ Photograph courtesy of RAAF Wagga Historical Section.

- At the completion of at least 12 months consolidation, technicians are eligible for time-promotion to Corporal provided they have passed the Trade Supervisors Principles Course and are appointed as a Trade Supervisor by the Unit Trade Supervisors Board.³²

The Experience 'Gap'

With the reversion to 'straight-through' training, the development of skill and the growth of experience is similar to that experienced prior to the introduction of the TTR. There is, however, one major difference. The competency journals that tradesmen must complete as part of the National Aerospace Curriculum require tradesmen to perform a wide range of tasks to ensure the full range of required competencies are achieved.³³ This means that rather than starting with a limited range of tasks and gaining experience with those before expanding the range, as was the case before the TTR, tradesmen today generally flit from task to task for their first two years in the field in order to complete their journals. They therefore gain little experience in any task and are generally well behind their pre-TTR peers by the time they can qualify as Trade Supervisors (usually after three or four years in the field). Figure 3.6 illustrates this lag in comparison with the pre-TTR experience growth profile depicted in Figure 3.3 previously.

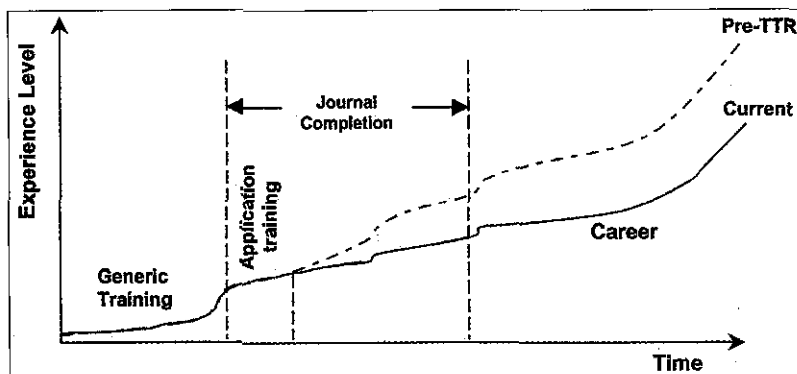


Figure 3.6 Experience growth over time (current versus pre-TTR)

This lack of experience is manifest in the lack of self-confidence many fitters possess when preparing for their Trade Supervisor boards. The majority of junior tradesmen interviewed for this paper admitted to feeling that they had not had enough experience

³² Defence Instruction (Air Force) PERS 5-1, *Airman and Airwoman Promotion System*, 31 August 2001, p. 2.

³³ The ADF has developed journals to record the achievement of prescribed competencies in accordance with the National Aerospace Curriculum. The journals list a range of tasks that tradesmen must perform competently in order to qualify for a trade qualification. An appropriately qualified and accredited assessor certifies their competency. Tasks range from the accurate completion of maintenance documentation through to the diagnosis and repair of aircraft unserviceabilities.

and did not feel confident in their ability to be a competent Trade Supervisor. Senior maintenance managers echoed this view, and many were very concerned about inexperienced (albeit qualified) Trade Supervisors not having the level of technical mastery required to enable them to effectively train more junior tradesmen.

As will be discussed in Chapter 5, all three military Services are experiencing high separation rates amongst their senior CPL and SGT technicians (corresponding to around ten to twelve years of service).³⁴ Whilst recruitment rates have recently started to improve, they are still a long way from compensating for the loss rate in terms of numbers and, even if there was a massive and sustained increase in recruitment, the high turn-over rate would do nothing to improve experience levels.³⁵ The RAAF has granted itself a temporary reprieve by outsourcing the deeper maintenance of its F111, C-130 and B707 fleets, thereby making available experienced (albeit not on aircraft type) technicians to fill the personnel void that was evident only a year ago. However unless something is done to redress the current retention situation, the number of personnel will become a problem again in the not too distant future. The regression of experience has not been stemmed significantly despite the injection of personnel.

Even very experienced tradesmen take a step backwards with regard to aircraft specific knowledge and experience when they change to a different aircraft type. However, the more skilled and experienced they are in their trade, the quicker they tend to 'come up to speed' in their new environment.³⁶ This fact has been a contributor to the perception in many squadrons that they are 'being held together by their pre-TTR technicians'. More significant contributors to that belief include:

- the difference in specialist trade knowledge between those who specialised in specific trades pre-TTR and those who generalised post-TTR;
- the depth of trade knowledge of the current generation of tradesmen compared to that of ex-apprentices; and
- the significant 'experience gap'.

Whilst there is little quantitative data to support this perception of a gap in skill and experience, there is an abundance of anecdotal evidence. As discussed already, some squadrons are keeping records of their experience levels and that data clearly supports the fact that experience levels are declining and in many cases have reached 'critical mass' or worse. Apart from the obvious drop associated with the demise of the apprenticeship scheme, there is other quantitative evidence to support the fact that skill levels have also dropped. There has been an increase in the number of maintenance safety breaches at a number of units, fault diagnosis times have

³⁴ Australian National Audit Office, *Retention of Military Personnel: Australian Defence Force*, The Auditor-General Audit Report No. 35, 2 April 2000, p. 51.

³⁵ Thomas Schindlmayr, *Australian Defence Organisation Personnel Environment Scan 2020*, Directorate of Strategic Personnel Planning & Research, Version 3.6, June 2001, p. 13.

³⁶ An experienced technician can become proficient on another type in as little as 6 to 12 months. A less experienced tradesman may take 2 to 3 years.

increased, standards of workmanship have declined (tasks have to be redone), and there has been a significant increase in the number of aircraft components returning from Deeper Maintenance (DM)³⁷ with no fault found (NFF).

NO FAULT FOUND (NFF) SYNDROME

*As the ADF acquires more technologically advanced equipment, the number of lower skilled personnel it requires will diminish.*³⁸

The last point made in the previous paragraph is an interesting one to expand on, as there are a number of reasons why a component could be returned from DM with NFF. The component may have been removed from an aircraft or higher assembly unnecessarily because of:

- inaccurate fault diagnosis (ie. replaced the wrong component);
- the inability of the maintenance crew to isolate a fault to only one component (ie. replaced several components at once); or
- time constraints or high workloads (ie. there may have been a conscious decision not to attempt to isolate the fault to only one component).

The first two points indicate a problem with fault diagnostics capability at the operational level. The third point, however, relates to the excessively high workload of many units and their desire to transfer part of that workload to DM where 'someone else pays for it' (in terms of workload and/or money).

Another reason for components returning from DM with NFF is that, whilst the component fails in flight due to climatic extremes, vibration or flight stresses, the fault cannot be duplicated on the ground. This is also often the case if the fault is intermittent. In situations like these prescriptive test procedures, automatic test equipment and even system built-in tests are of little value. What is required is a very good understanding of the symptoms of the fault and the conditions that may have induced it in flight (ie. experience), and the technical knowledge and diagnostic skills to test beyond the scope of procedures or automated systems (ie. training). This is also the case when faults occur **between** system components—in wiring, pipes, connectors, interfaces, etc—which happens more frequently as aircraft age.

There are other reasons why a fault may not be found, and therefore diagnosed, during DM. The testing procedures or, in the case of automatic test systems the automated diagnostics, may not be comprehensive. This situation is likely because the design of test procedures for complex components is a complicated and expensive process. As

³⁷ In this context the term Deeper Maintenance (DM) refers to any level of maintenance that is deeper than the level at which the component was removed.

³⁸ Peter Dunn, 'From Officer Cadet to General: managing the human element of capability', in Hugh Smith (ed.), *Preparing Future Leaders*, Australian Defence Studies Centre, Canberra, 1998, p. 173.

the fault coverage of a test procedure increases, the cost of developing that procedure increases exponentially. Defence therefore has to compromise between the level of fault coverage desired (100 per cent) and what it can afford. This is usually achieved through a risk analysis based on the likelihood and consequences of a fault occurring.

Prescriptive test procedures, Automatic Test Equipment (ATE) and Built-in Tests (BIT) save Defence considerable time and money, and therefore have a significant role in the maintenance continuum. However they will never be able to comprehensively test and diagnose component faults, nor will they be able to diagnose environmentally induced, intermittent or interface faults very well. Therefore, whilst a reduction in the average skill level of ADF technicians may seem appropriate against the promise of improved self-diagnostic capabilities in modern equipment, this must be weighed against the risk of not being able to isolate faults at the operational level in a contingency and the increased costs of compensatory DM.

There are some complex issues here that may be clarified by considering the following equation:

SYSTEM COMPLEXITY + AUTOMATIC DIAGNOSTIC CAPABILITY

IS PROPORTIONAL TO

HUMAN DIAGNOSTIC CAPABILITY REQUIRED

As the ADF acquires more complex systems, the complexity of the faults likely to occur in those systems increases similarly. Despite the efforts of ATE and BIT developers to improve the situation, there has not been a comparative increase in automatic diagnostic capability.³⁹ Therefore, using the above formula, the ADF needs its technicians to possess greater diagnostics skills. So is the formula accurate?

Take for example a test procedure that is guaranteed to detect 85 per cent of all possible failures in a particular system (this is very generous). This means that, regardless of the complexity of the system, the procedure will be able to isolate 85 per cent of the possible faults down to one or possibly a few components. This 85 per cent can therefore be discarded from any further consideration as a 'given'. This leaves 15 per cent of the faults that the human technician must either discount (ie. there is no fault) or diagnose manually. As already stated, the systems acquired by the ADF are becoming increasingly complex. Therefore the complexity of the 15 per cent of those systems that must be manually diagnosed has also increased (remember that complex systems are expensive to develop procedures for, so any non-critical, complex portions are likely to be in the 15 per cent).

³⁹ A fact confirmed by the author (an ATE specialist) at the world automatic test conference AUTOTESTCON 2001, 20–23 August 2001.

What this means is that, despite the increase in the number of BIT capable systems acquired by Defence, they will never replace the need for highly skilled, experienced diagnostic technicians in the ADF. They may only reduce the number required. Unfortunately the ADF no longer trains its technicians to a depth that would allow them to develop the diagnostic capability required. Neither does the private sector. Is it any wonder maintenance managers believe that the ADF would be lost without its pre-TTR technicians?

WORKLOADS

As mentioned at the start of the previous discussion, one of the reasons why a component could be returned from DM with NFF was that it may have been removed from an aircraft or higher assembly unnecessarily because of a conscious decision not to attempt to isolate the fault to only one component. This kind of decision is usually contributed to time constraints or high workloads based on a unit's high rate of effort, or insufficient trained and experienced maintenance personnel.

When a high rate of effort is in support of operations or exercises there may be some justification in transferring to a DM facility the cost of not taking the time to better isolate the fault. Of course the unit may also pay the penalty when the logistics system can not keep up with its subsequent demands for spares. When the need for a high rate of effort is not so easily justified, such as when squadrons just want to use up their allocated flying hours (this is getting to be less the case as squadron budgets are reduced), the cost is not only borne by the DM facility, but by the maintainers whose professionalism and commitment makes them resent having to 'cut corners' or pass the job over to someone else. This has a significant affect on morale.

In most squadrons the rate of effort varies throughout the year depending on flying programs and any contingency operations. The factor that often makes the rate of effort seem constantly too high at many squadrons is a lack of sufficient trained and experienced maintenance personnel. As mentioned earlier, most squadrons are quite well manned at present (albeit likely to be a temporary situation) due to the outsourcing of major RAAF DM facilities. The notable exception to this is the Royal Australian Navy (RAN), which is suffering from a critical shortage of personnel across the board, a problem amplified in its air-arm by the loss of a significant number of senior sailors to the Australian Public Service (APS) when the Naval Aircraft Systems Program Office (NASPO) moved from Sydney to Nowra. So the main problem comes down to experience.

How Does Experience Affect Workload?

The number of personnel required by a unit to perform its intended role is referred to as its Constrained Establishment (CE). Generally, a unit's CE figures are based on that unit having a full complement of trained and experienced personnel. This is rarely, if ever, the case. Some units have had some positions added to their CE to account for personnel under training, but most would claim that these are not enough.

What most planners fail to consider is that there is no distinction on a CE table between a tradesman that has just completed his or her journal (ie. LAC) and a more experienced Trade Supervisor (ie. CPL). Pre-TTR, when tradesmen graduated from trade training as ACs and ACWs, a unit could judge the experience of its tradesmen to some degree by their rank. CE tables differentiated between these junior ranks and allowed DPA-AF to ensure that a suitable balance of experience was maintained. Since the introduction of TTR a major imbalance in the distribution of experience within a unit has to be managed at unit level, usually by the Senior Engineering Officer (SENGO).

Most units are carrying a higher than expected training overhead.⁴⁰ As the number of experienced technicians decreases, a greater burden is placed on supervisors who not only have to perform in a supervisory capacity, but have to mentor less experienced personnel gaining On-the-Job Training (OJT). Often these two roles can not be carried out concurrently because the supervisor cannot be involved in demonstrating the activity and then sign as the supervisor. It therefore takes two experienced technicians to mentor a tradesman or small group of tradesmen through a task **and** provide an appropriate level of supervision over the task. Compounding this problem is the fact that there are generally far more tradesmen to be trained than there are experienced technicians available to train them. This has an extremely detrimental effect on the morale of the tradesmen under training, who want to gain enough skill and experience to be useful on their own. It equally affects the supervisors, who realise the need to spend time ensuring their junior tradesman are properly trained, but also have to ensure that there are enough aircraft on the flight-line to complete missions.

Lower skill and experience levels mean tasks take longer and therefore longer hours are worked. Maintenance and supply limitations, such as those described in the discussion on 'NFF Syndrome', increase cannibalisation rates leading to further increases in workload.

DECLINE OF WEAPONS MASTERY

Odd Men Out

So far, this chapter has explored the effects of the TTR on the organisational health of the ADF aviation technical workforce overall. One of the major changes imposed by the TTR was the amalgamation of the eleven extant aircraft trades into three trade groups (refer to Table 3.2). In all except one case there existed enough similarity between the trades to facilitate a relatively smooth transition to the new structure. Airframe and engine tradesmen had long been referred to jointly as 'black-handers', thereby giving them a sense of joint identity. Similarly, the electrical, instrument and

⁴⁰ A series of private interviews and group seminars conducted by the author over an eight month period with maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

radio tradesmen had been referred to as 'white-handers' or 'queer-traders', giving them the same joint sense of identity. However the Armament Fitters, known colloquially as 'gunnies', were always considered separately.

The armament trade was simply different from the other aircraft trades. 'Black-handers' dealt with airframes and mainly mechanical components like engines, undercarriages and fuel systems. 'White-handers' dealt with electrical and electronic components like avionics systems, wiring and wave-guides. But whilst each group was fiercely protective of its own identity and culture, both recognised their primary role as maintaining aircraft. This is where the armament trade differed fundamentally.

Armourers dealt with bombs, bullets and the interfaces that connected them to the aircraft. '[Their] duties ranged from bomb preparation and loading, re-configuration of stores suspension systems and explosive ordnance demolition (EOD), through to the maintenance of advanced aircraft stores management systems and aircraft ejection systems.'⁴¹ The armourer's world revolved around explosive ordnance, not aircraft. Aircraft and armament interfaces were seen merely as vehicles for delivering ordnance. The armourer's job was to ensure that the ordnance did not explode when it should not, did explode when it should and had the effect it was meant to have when it was required to.

As a result of their different focus and different attitudes, a culture developed that was distinctly 'gunnie'. The trade demanded people with a different outlook, people with both the willingness and aptitude to work with explosive substances and the commitment necessary to complete hazardous tasks such as EOD.⁴² Consequently, the Armament Fitter developed skills not evident in other trades. Before the TTR, armourers were proud, professional and capable.

Pre-TTR Training

Armament Fitters, like the other aircraft trades, were trained as a discrete trade prior to the introduction of the TTR. Apprentice Armament Fitters completed 24 months of technical and specialist armament training. The apprentices also completed several training modules from the Electrical Fitters course. Armament Adult Trainees, in comparison, completed 13 months of technical and armourer training. Importantly, the graduates from the 'old' system were useable almost immediately for all armament, explosive ordnance (EO) and egress (ejection system) tasks. Most armourers were fully qualified in all of the tasks required for an aircraft type within two years of reaching a flying squadron. Despite gaining proficiency relatively quickly, progression through the rank structure was deliberately slowed to ensure sufficient experience in the complexities of the armament trade. The intensive training and

⁴¹ Grady, *Impact of the Technical Trade Restructure*, p. 3.

⁴² Grady, *Impact of the Technical Trade Restructure*, p. 3.

prolonged supervision produced professional, safe armourers focussed on handling EO, and egress and armament systems.⁴³

Amalgamation

The TTR brought about the end of the armament trade as it had existed since its origins in World War One.⁴⁴ Under the new structure, the roles of Armament Fitters became the roles of Weapons Specialists. As depicted in Table 3.2, the specialisation was split between the avionics and aircraft musterings, an obvious recognition that it did not fit neatly into either 'basket'. 'Weapons Specialist' is neither a distinct trade nor a mustering. Weapons Specialists are drawn from the avionics and aircraft musterings and trained as required to fulfil armament roles. Although some EO familiarisation training is incorporated into the avionics and aircraft trade training at RAAFSTT, the first exposure to EO specialist training is through a six week Weapons Delivery System Specialists Course.⁴⁵ In this respect, the need for armourers is treated as somewhat of an afterthought by the TTR.



Figure 3.7 A weapons loading team at work.⁴⁶

⁴³ Grady, *Impact of the Technical Trade Restructure*, p. 3.

⁴⁴ Grady, *Impact of the Technical Trade Restructure*, p. 3.

⁴⁵ Grady, *Impact of the Technical Trade Restructure*, p. 3.

⁴⁶ Photograph from DEFWEB Image Gallery, <http://defweb.cbr.defence.gov.au/home/gallery.htm>.

As discussed previously, tradesmen spend approximately two years after graduation completing a competency journal at their gaining units. The journal forms part of the National Aerospace Curriculum and is aligned with civil aviation training standards. Because the civil aviation industry does not deal with EO, egress or armament systems, there are no competencies in the journal relating to Weapons Specialist functions. However, because the ADF needs to employ a flexible technical workforce, and because commanders want to ensure junior tradesmen get broad exposure to all facets of their mustering at an early stage, many squadrons rotate their fitters through armament sections for a short time during their first two years. This can cause friction between the goals of the organisation and the goals of the individual. Most fitters have a strong drive and commitment to completing their journals as soon as possible to prove their worth as technicians. Exposure to Weapons Specialist training and experience is seen as an impediment to this goal and can be resented. 'Only limited numbers of tradesmen opt for the [Weapons Specialists] option at the expense of their mainstream trade.'⁴⁷ The fact that Weapons Specialists remain in their parent mustering, and therefore compete against their mainstream peers for promotion within those musterings with the relative disadvantage of having to relinquish aircraft experience for weapons experience, is also a source of great dissatisfaction.

The focus of many recruits who join the ADF to be a technician is on gaining a trade in the aviation industry. They choose to become either an avionics or aircraft technician. Few, if any, view the weapons specialisation as anything but a temporary, 'must-do' part of their training and employment in the ADF. This matches the intent of the TTR. However, the ADF requires more if it is to maintain its armament capability. An air force without armament is just another airline.

Required Capability

The level of technical and professional capability required of Weapons Specialists today is no different from that required of Armourers in the past. The ADF still requires a development path that will 'grow' sufficient numbers of tradesmen to fulfil the roles of EO Supervisor (prerequisite for Weapons Specialist Trades Supervisor), EO Manager (SGT and above) and Assistant Base Armament Advisors (ABAA).

The experience levels required to create each level of the Weapons Specialist stream are as follows:⁴⁸

- | | | |
|----|-----------------------|---------|
| a. | AVTECH/ATECH training | 4 years |
| b. | Trade Supervisor | 2 years |
| c. | Independent Inspector | 4 years |

⁴⁷ (R) Headquarters 82 Wing, *SRG Weapon Specialist Manning*, Brief for ACAUST, 82WG/7/135/Air pt 12 (), 6 August 2001, p. 4.

⁴⁸ (R) Headquarters 82 Wing, *SRG Weapon Specialist Manning*, pp. 4–5.

- | | | |
|----|-------------------|--------------|
| d. | EO Manager (FSGT) | 6 to 8 years |
| e. | ABAA (WOFF) | 6 years |

Since 1991, when that last Armament Fitter course was inducted, Weapons Specialist personnel have been created from the existing technical trade system. However there has been extreme difficulty in maintaining personnel within the Weapons Specialist stream long enough to create the next generation of EO Manager. The creation of EO Managers, and eventually ABAAAs, is critical to the sustainability of safe EO operations.⁴⁹

Experience 'Gap'

As in the mainstream trades, there is an obvious gap between the Weapons Specialists grown through the post-TTR system and their pre-TTR Armament Fitter brethren. Whilst the Weapons Specialist experience at some units (by no means all) is satisfactory, by far the majority of senior Weapons Specialist positions are filled by ex-Armament Fitters. Very few post-TTR tradesmen have progressed through to become EO managers (a handful only) or ABAAAs (none).

Solutions

There are two problems specific to the Weapons Specialist stream that need to be addressed. The first is the lack of personnel willing to forego their primary trade to become Weapons Specialists. The ADF needs to come to terms with the fact that armourers and the armament trade are different to their mainstream siblings and that Weapons Specialists are exactly that—**specialists**. To continue to treat the Weapons Specialist stream as a subset of the AVTECH and ATECH musterings is to invite disaster. Weapons Specialists should be treated more as an offshoot of the mainstream trades, similar to Non-Destructive Testing (NDT) technicians. NDT technicians deliberately branch away from the mainstream trades after reaching the rank of CPL to concentrate on their specialisation.⁵⁰ From that point on NDT is treated as a separate mustering with its own career management and promotion pool.

The second problem affecting the development of sufficient Weapons Specialist knowledge and experience is the point at which Weapons Specialists become competent at their trade and start to gain experience. As already described, to build a sustainable and capable Weapons Specialist steam under the post-TTR trades system, tradesmen will have to be segregated from the mainstream trades and allowed to specialise in order to attain the required skill and experience levels within a reasonable time period (within a career). However, pre-TTR Armament Fitters had to spend quite some time training and gaining experience at different rank levels to attain

⁴⁹ (R) Headquarters 82 Wing, *SRG Weapon Specialist Manning*, p. 5.

⁵⁰ Australian Air Publication 2320.101-1M, *Occupational Specifications Aircraft Engineering Trade Group*, AL 8 issued 3 August 2001, Sect. 7.

the level of skill and experience required, even with a foundation of specialist Adult Trainee or apprentice training to build on. Post-TTR Weapons Specialists do not have such a foundation, and do not start to build much of the knowledge and experience required until they are halfway through their careers.⁵¹ ADF planners should seriously consider promoting weapons specialisation much sooner than is currently the case.

International Perspectives

The Royal Air Force (RAF) is about to embark on a restructure of its aviation technical trades that is similar in many respects to the ADF's TTR. RAF planners have extensively reviewed the TTR and other similar reviews implemented by other nations, and have decided to follow the ADF's example in all except two respects. Firstly, they will spend a great deal more time and resources on the implementation of their restructure to ensure they avoid the wholesale disenfranchisement of their technical workforce by imposing a massive change that, in the case of the TTR, most ADF tradesmen believed was unnecessary and risked damaging effectiveness, capability and morale. Secondly, although the extant RAF Airframe and Propulsion trades will be amalgamated to form Trade A (= Aircraft), and the extant Avionics and Air Electrical trades will be amalgamated to form Trade B (= Avionics) in line with the Australian example, Weapons will be maintained as a distinct trade.

One of the stipulations of the RAF review is '... in reducing the number of trades, each new trade must not have a span too wide nor the training time become unacceptably long'.⁵² For some military elements of air engineering—weapons, armament assisted escape systems, survival equipment and aircrew equipment assemblies—various options for providing the appropriate level of support have been analysed. These range from combining the Weapons and Survival Equipment trades into a single trade within the aircraft engineering group, through to the disbandment of the two trades with their responsibilities divided into the most appropriate of the new Trades A and B. 'On the grounds of operational and financial risk, it has been concluded that the trades should remain as two separate and distinct trades.'⁵³

Like the ADF, the Canadian Armed Forces have undergone a program similar to TTR. Around sixteen discrete technical trades were amalgamated into three new trade groups, although the grouping was slightly different to the ADF model. Despite the subtle differences, the impact on the armourers was the same. However, a review of the new trade system has identified that the avionics stream—which also contains their armament fitter trade—was 'too broad'.⁵⁴ More importantly, the Canadian review identified that the aptitude and willingness to work around explosives was not

⁵¹ Based on separation from the ADF after 10–12 years.

⁵² Commander-in-Chief Strike Command (CINCSTC – RAF), *Multi-skilling within the RAF Logistics Trades*, Air Force Board Standing Committee Concept Definition Paper, filed as STC/103/1/4/CINCSTC, 17 July 2001, p. 4.

⁵³ CINCSTC, *Multi-skilling*, p. 5; discussions between the author and the Multi-Skilling Development and Implementation Team (MSDIT), RAF Strike Command, RAF High Wycombe, 9 August 2001.

⁵⁴ Grady, *Impact of the Technical Trade Restructure*, p. 9.

evident throughout the entire technical workforce. Thus, the expectation that all aviation technicians would willingly adapt to this area was overly optimistic. The review concluded that armament fitters should evolve back into a separate trade and, although the review has yet to be officially endorsed, this recommendation is likely to be supported.⁵⁵

CONCLUSION

At the beginning of this chapter we reviewed the Technical Trades Restructure (TTR) and its implementation on the basis of a perception that continuing increases in aircraft complexity were exposing shortcomings in the training system's ability to provide personnel with adequate fault diagnosis skills. The fundamental alteration of the technical trades included changes to trades boundaries, weapon system employment, trade training and career progression. However an assessment nearly ten years after the implementation of TTR indicates that fault diagnosis skills may have actually dropped, and the ADF is now suffering from a serious lack of experience across its technical ranks generally.

So what has really changed? The demise of the ADF apprenticeship schemes has more than halved the length and depth of technical training available to personnel on enlistment to the ADF. Compounding this is the fact that trainees are now trained in a multitude of disciplines compared to the distinct specialisations that existed prior to the TTR. Therefore, trainees now have less time to learn two or more (pre-TTR) trades than their predecessors had to learn one. This preference for generic training as opposed to specialist training has affected tradesmen beyond their initial trade training also. Any divergence from a mainstream generic trade can affect an individual's promotion prospects in competition with their peers, because they are assessed as an ATECH or AVTECH not, for example, a weapons, hydraulics or environmental control system specialist.

The number of aviation technicians in the ADF has reduced through a number of reviews and the number leaving the ADF has increased without a corresponding increase in recruitment. The rate at which the ADF can develop its technician's skills and experience is low because of a combination of training changes imposed by the TTR and a lack of experienced supervisors and instructors at operational units. The lack of skill and experience at operational units also contributes to continually high rates of effort, increased maintenance errors and logistics backlogs, all of which contribute to poor morale, lack of job satisfaction and separation from the ADF.

The issues surrounding workload are in themselves complicated and intertwined. A review of ADF workloads, not only across the Forces but also within individual specialisations, is required to begin to address this problem. As will be discussed in Chapter 5, remunerative efforts to date have been insufficient and are likely to be

⁵⁵ Discussions between the author and Anthony Grady / Major W. Lewis (Canadian Forces National Defence Headquarters, 30 August 2000, in Grady, *Impact of the Technical Trade Restructure*, p. 9).

unsuccessful anyway. The root of the problem must be understood and a comprehensive plan developed to address the reasons for the workload that prevails.

The Weapons Specialist stream was discussed as a special case, highlighting the need for ADF planners to reconsider both the need for specialist career streams and the way in which those streams are developed. The ADF needs general aircraft trades, and these are sufficient for most technical functions in ADF aircraft operations. However as technology increases the complexity of the systems the ADF operates, more highly qualified technicians are required to perform specialist roles. As they advance in the ADF, these specialists will, in turn, become the people the ADF relies on to provide specialist advice to engineers, equipment managers, acquisition teams and service providers alike, ensuring the ADF maintains a robust corporate governance capability.

If ADF planners consider the arguments in this chapter and take action to address the training and specialisation issues specifically, the resultant solutions should also help to address the poor recruitment and retention rates the ADF is currently facing in regard to its technical workforce. The justification for this argument is presented in more detail in the following chapters.

Recruitment

The ADF faces increased competition for people with the aptitude, skills and fitness needed to meet military requirements. To maintain a competitive advantage in the region and to compete in the employment market, the ADF must be able to offer challenge, comparable opportunities and fulfilling careers ... the ADF should position itself with competitive employment packages, including niche careers and flexible work practices. It should offer an attractive array of occupations which reflect community trends to more frequent job changes, whilst retaining and enhanced scope for a range of talented people to serve for most of their working lives.¹

INTRODUCTION

Talking with Dr Alan Stephens about the 2000 Defence White Paper, Air Marshal Errol McCormack remarked ‘... if there is one thing (other than inadequate funding) that can bring the White Paper’s vision undone, it will be people, not hardware’.² The White Paper itself recognises that recruiting and retaining sufficient skilled and experienced people will be one of the most significant challenges in building the ADF of the 21st Century.³ Resignation rates are high (around 12 per cent⁴) and ADF recruitment fell short by 25 per cent in Financial Year 1999/2000 despite a huge reduction in overall numbers.⁵

The number of permanent personnel in the ADF has been steadily reducing since a post-Vietnam War peak of 73,185 in 1983, reflecting changing government policies and community attitudes towards the Defence Force, and the lack of an identifiable threat to Australia’s security.⁶ In the 1990s, ADF numbers fell from 68,123 in 1990 to 50,785 in 2000, representing a reduction of over 25 per cent. Large reductions were seen across all three Services, with the Air Force experiencing the largest decline of

¹ Australian Defence Force (ADF), *Serving Australia: The Australian Defence Force in the Twenty First Century*, Personnel Policy Strategy Review Team, Defence Centre Canberra, 1995, p. 61, para 3.31.

² Air Marshal Errol McCormack (Chief of Air Force), 2001, in Alan Stephens, ‘People First: the RAAF and the White Paper’, *Asia-Pacific Defence Reporter*, Vol 27, No 1, February 2001, pp. 20–2.

³ Commonwealth of Australia, *Defence 2000: our future Defence Force*, AGPS, Canberra, 2000, Executive Summary, <http://www.defence.gov.au/whitepaper>, accessed 12 September 2001.

⁴ Thomas Schindlmayr, *Australian Defence Organisation Personnel Environment Scan 2020*, Directorate of Strategic Personnel Planning & Research, Version 3.6, June 2001, p. 13.

⁵ Alan Stephens, ‘People First: the RAAF and the White Paper’, *Asia-Pacific Defence Reporter*, vol 27, no 1, February 2001, p. 20–2.

⁶ Allan Shephard, *Trends in Australian Defence: A Resources Survey*, Australian Defence Studies Centre, Canberra, 1999, p. 50.

35 per cent, followed by the Army at 22 per cent and Navy at 18.5 per cent.⁷ All does not augur well for the maintenance of Defence capability unless the ADF can dramatically alter recruitment and retention rates so that it can at least bring more people in to the Services than it is losing.

However, personnel numbers is not the only significant issue. The total number of personnel in the Defence Force is irrelevant if those that are there do not have the requisite skills and experience to sustain Australia's immediate defence needs and provide the flexibility needed to meet a variety of challenges in the future. The high investment costs and long lead-times needed to recruit and train skilled personnel mean that manpower increasingly inhibits changes in defence priorities.⁸ Therefore, whilst it is important to address the issue of recruiting shortfall, reducing the rate of separations from the Services is critical.

This chapter explores recruitment issues affecting the ADF broadly and discusses possible solutions to the problem the ADF faces in recruiting adequate numbers of personnel into its technical trades. Chapter 5, which follows, explores many of the issues affecting retention in the ADF and possible solutions to that problem. Whilst the two problems are dealt with as two separate chapters in this paper, they are very closely related in that many of the initiatives introduced to address one of the problems are likely to impact on the other, either positively or negatively. Many of the same ideas and models could be, and in some cases are, discussed in both chapters. It is therefore important to read both chapters in order to comprehend all the issues examined.

SOME CONCEPTS TO CONSIDER

A number of concepts have been developed to assess the nature and extent of changes in the armed forces. Charles Moskos, Professor of Sociology at Northwestern University, developed three concepts that are of particular interest:

Institution/Occupation—which focuses on the attitudes and values of individuals in the armed forces.⁹

Convergence—which focuses on the armed forces as an organisation, in particular the policies and practices relating to personnel.¹⁰

⁷ Directorate of Workforce Planning and Establishments, 26 April 2001, in Thomas Schindlmayr, *Australian Defence Organisation Personnel Environment Scan 2020*, Directorate of Strategic Personnel Planning & Research, Version 3.6, June 2001, p. 45.

⁸ Sir Frank Cooper, 'The Management of Defence Expenditure', in Christoph Bertram (ed.), *Defence and Consensus: the domestic aspects of western society*, Macmillan, London, 1983, p. 56.

⁹ Charles C. Moskos, 'From Institution to Occupation: Trends in the Military Organization', *Armed Forces and Society*, Vol 4, No 1, Fall 1977, pp. 41–9.

¹⁰ Charles C. Moskos, 'Institutional and occupational trends in armed forces', in C.C. Moskos and F.R. Wood (eds), *The Military: More than just a job?*, Pergamon-Brassey's, Washington DC, 1988.

Post-modern military—which focuses on the changing role of the armed forces.¹¹

These three concepts are useful in analysing the changes in status, relevance and ethos that seem to be affecting the Australian military, and possibly contributing to the poor recruitment and retention rates the Services are currently experiencing. Chapter 5 predominantly uses the first concept, that of institution versus occupation, as a basis for explaining that while an occupational philosophy may help in the challenge of recruiting personnel, the ADF can not afford to compete with commercial industry to retain personnel on a strictly occupational basis. However for convenience, all three concepts are explained here.

Institution/Occupation Model

Hugh Smith presents a hypothesis that ‘there is a long-term trend away from individuals regarding the armed forces as an all-embracing institution towards treating military service as a form of employment’.¹² Cultural assessments and exit surveys conducted over the past few years support this view. Smith acknowledges that few individuals fit one or the other hypothetical extreme. However, he points out that it is the debate about the extent to which the institutional and occupational outlooks are mutually incompatible that will be important in determining effective personnel policies and in maintaining cohesion and morale.

The institutional outlook is characterised by the following:¹³

- A strong psychological commitment to the military and their respective Service.
- Readiness to put the institution before self and family.
- Individual values correspond closely to institutional values.
- An assumption of a lifelong career in the institution.
- Confidence and satisfaction that the institution will provide appropriate material and symbolic reward.
- Confidence that the institution would take care of the individual.

It can be argued that the majority of recruits entering the military prior to the 1990s shared an institutional outlook.

¹¹ Charles C. Moskos, John Allen Williams, and David R. Segal (eds), *The Postmodern Military: Armed Forces after the Cold War*, Oxford University Press, 1999.

¹² Hugh Smith, *Armed Forces and Social Change: An introduction*, presented as a seminar paper to Post-graduate Defence Studies students on 25 July 2001, p. 4.

¹³ Smith, *Armed Forces and Social Change*, p. 7.

More recently, the dominant outlook among recruits entering service in the armed forces has been occupational. This is in line with trends in the both the public and private sectors, and is affected by the labour market in general.¹⁴ It reflects what have come to be considered 'modern' attitudes.

The occupational outlook is characterised by the following:¹⁵

- Expectation of rewards that are market-oriented and monetary.
- The chief motivation of military personnel is calculative and based on personal benefit; that is, self before institution.
- A strong concern with legal rights and a readiness to assert them.
- The right of 'employees' to organise and contribute to management decisions.
- Little psychological commitment to the institution.

Table 4.1 describes the changes in the individual perspectives of military personnel over the second half of the twentieth century.

	Cold War 1945–1972	Late Cold War 1972–1990	Post–Cold War 1990–
Dominant Posture	War readiness	Deterrence	Constabulary
Membership identification	Institutional	Mixed	Occupational
Career focus	Permanent	Conditional	Short-term
Recruitment appeal	Character, duty, lifestyle	Personal challenge	Training, money
Rewards	Status, seniority, in kind	Mixed	Monetary
Residence	Military housing, barracks/mess life	Mixed	Work and residence separate
Private life	Minimal	Partial integration	Separate
Conscientious objection	Limited religious	Routine	Selective, in-service?

Table 4.1 Institution/Occupation Individual Perspectives.¹⁶

¹⁴ Schindlmayr, *Australian Defence Organisation Personnel Environment Scan 2020*, pp. 10–11.

¹⁵ Smith, *Armed Forces and Social Change*, p. 4.

¹⁶ Table based on the work of Charles Moskos, reproduced in Smith, *Armed Forces and Social Change*, 25 July 2001.

Convergence

The convergence model is based on the hypothesis that the practices and policies of the armed forces as an organisation and as an 'employer' increasingly follow those of civilian organisations. The characteristics of convergence include:¹⁷

- Employment contracts and work practices along civilian lines.
- Recognition and protection of legal rights.
- The greater role of women in the armed forces.
- Acceptance of homosexuals.
- Desire for representativeness.
- Wider employment of civilians.
- Provision for selective conscientious objection.

If, and to what degree, the ADF should converge with civilian society are critical questions in the retention (and recruitment) debate because they underpin people's decisions regarding their preferred employment environment. Most argue an armed force that is isolated and alienated from its parent society is a danger to that society.¹⁸ However, a matter deserving equal consideration is the consequences of an armed force not distinguishing itself from the society it serves at all. If neither society nor the armed forces perceive a distinction, on what basis should the military make any more commitment to national security than any other section of society?

*If the ADF sees itself treated as no less an economic enterprise than BHP or Carlton United Breweries, then why should its members for example, tolerate, without appropriate compensation, unpleasant working conditions, which can involve the ultimate unpleasantness of all—loss of life?*¹⁹

A combination of societal trends and conscious policy choices are effectively extinguishing the essential differences between the ADF and Australian society. Symptoms of this breakdown in distinction include decreased commitment to the institution and a greater inclination to leave the Service as soon as personal and family needs and goals are prejudiced by continued military service.²⁰

¹⁷ Smith, *Armed Forces and Social Change*, p. 7.

¹⁸ Cathy Downes, *High Personnel Turnover: The Australian Defence Force is not a Limited Liability Company*, Canberra Papers on Strategy and Defence, No 44, Australian National University, Canberra, 1988, p. 19.

¹⁹ Downes, *High Personnel Turnover*, p. 19.

²⁰ Downes, *High Personnel Turnover*, pp. 17–19.

In part, convergence reflects the organisation's response to the expectations and desires of an increasing number of individuals with an occupational outlook. In addition, keeping the military necessarily distinct from the greater community is difficult to justify at a time when the very nature, function and relevance of the military are being questioned.

Post-Modern Military

The post-modern military model is based on the hypothesis that the central function of conducting conventional warfare is diminishing in importance and armed forces are increasingly taking on roles of a constabulary nature. This, in turn, compels armed forces to change significantly.²¹

The 'modern' military developed over the last 500 years as an instrument of the state with the task of fighting other modern forces. It is a professional, rational, national, technological organisation based on the Trinitarian State. Modern war, it is argued, has become too expensive and too destructive. At the same time, more problems are emerging in which armed forces can play a part.²²

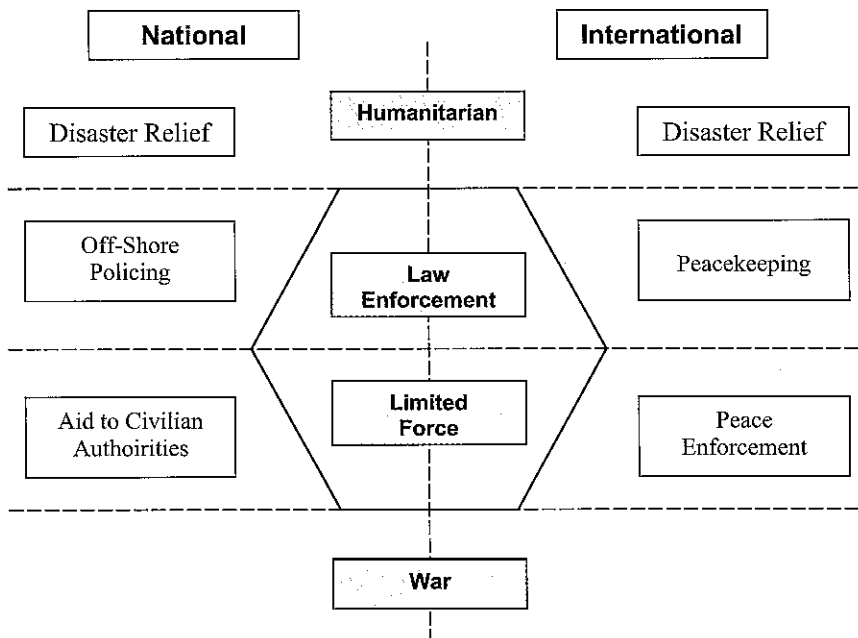


Figure 4.1 Scope of Modern Military Roles.²³

²¹ Downes, *High Personnel Turnover*, p. 9.

²² Smith, *Armed Forces and Social Change*, p. 9.

²³ Model developed by Hugh Smith, presented at a Post-graduate Defence Studies seminar on the Changing Roles of Armed Forces, ADFA, 16 October 2001.

Whilst the traditional focus of armed forces (and the public perception) is that of fighting wars and defending sovereign territory, the possibility of total war is becoming less likely, and military forces are finding themselves being employed more and more in a broad spectrum of instances. Figure 4.1 is a model that depicts the scope of roles the military is employed in, ranging from humanitarian aid at the top to war at the bottom. The model is also divided vertically to represent the fact that some of the roles are exclusively national or international, whilst others can be both. The examples provided are obviously not exhaustive.

Towards the top end of the spectrum, farthest away from the traditional roles of the military, the participation of the military becomes less exclusive and armed forces collaborate closely with national and state authorities, with authorities in overseas countries and with non-governmental organisations. Some overlap in functions is likely. In some situations military forces may be the only means available to substitute for civilian organisations.

WHY ARE PEOPLE NOT JOINING THE ADF?

There is a multitude of reasons why people are not joining, or even considering joining the military. Obviously, the overarching reason is that people view employment in occupations other than the military preferable. But why is this the case? Three of the main reasons could be misconceptions of the military, the question of relevancy of the military and the perception that something is wrong with the military.

Misconceptions

One of the major factors is a misconception or lack of understanding about what military life and jobs are really about. The images of the military portrayed by the Australian Government, media and the Defence Force are confusing to say the least. On one hand the Government berates the Defence organisation for poor management, decision-making and accountability of public funds, and on the other praises its operational capability, its versatility and, above all, its people. The government, regardless of its persuasion, is no longer regarded as a trustworthy employer and politicians generally are considered to be uninterested in defence. Political leaders are not well regarded by broad sections of the Defence Force. To overcome this perception, the Committee on Foreign Affairs, Defence and Trade recommended regular briefings for Federal and State politicians on Australian defence policy, capabilities and personnel. They also recommended that a comprehensive, long-term national public relations campaign be initiated, supporting the ADF.²⁴

²⁴ Commonwealth Parliament, *Personnel Wastage in the Australian Defence Force*, Report of the Joint Committee on Foreign Affairs, Defence and Trade, AGPS, Canberra, 1988, p. 127, para 4.56.

The media is just as inconsistent, taking every opportunity to expose any military error or perceived error, then suddenly turning to resounding praise over the ADF's efforts in East Timor, and just as quickly turning again to exposing weaknesses but more particularly, the apparent rift between Government and Defence leadership and a perceived lack of cohesion between the Services themselves.

Finally, while senior defence leaders publicly reflect on the difficult job defence has and sing the praises of those members working to support operations in hard times; recruiting adverts portray a glossy, unrealistic image, focused predominantly on the glamour jobs mainly held by officers in tactical environments.

Relevancy of the Military in Today's Society

Public attitudes towards the armed forces have changed markedly over the past decade, primarily as the result of a long period of relative peace in Australia's region. Public knowledge and understanding of the military has declined as fewer people have the opportunity or inclination to experience military service first-hand.

The lack of an overt military threat, a trend toward more of a policing role and the extent to which globalisation has affected the notion of the State all lead the public and the government to question the need for a significant defence posture. The public see defence expenditure as similar to insurance and, just like many private citizens, when the budget is tight governments are tempted to under-insure.²⁵ Of course defence differs from insurance in that it seeks to reduce the likelihood of the disaster it insures against. A lack of understanding of the role of the Defence Force and its relevance to society are not good recruitment factors.

High Exit Rates

With exit rates as high as they are, and with both the Government and the military clearly broadcasting the problem, potential recruits have no choice but to question what is so wrong with the ADF that so many people are getting out?

WHY ARE TECHNICIANS NOT JOINING THE ADF?

Further to the general reasons stated above, there are some specific reasons why the ADF is having trouble recruiting aerospace technicians. The following list is by no means comprehensive, but it does consider some issues not often considered in debates.

²⁵ Sir Frank Cooper, 'The Management of Defence Expenditure', in Christoph Bertram (ed.), *Defence and Consensus: the domestic aspects of western society*, Macmillan, London, 1983, pp. 51-2.

Industry Competition

Almost the entire international aviation industry is suffering from a shortage of skilled tradesmen and is having recruitment and retention problems that are similar to the ADF's. There are many factors that can be attributed to this problem, the most obvious being low unemployment rates. Another factor is the level of competition from other industries, particularly the information technology industry, which are offering almost unbelievable packages for people with similar aptitudes, attitudes and competencies as aviation technicians.

So the ADF has a real fight on its hands. On one front it must fight for talent against other industries with apparently so much more to offer, and on another it must fight against the civil aviation industry for those that do decide on aviation maintenance as a career. Fortunately the ADF generally does not have to vie for talent against other Defence Forces as well, in fact the ADF has been reasonably successful in luring members of other forces to fill some of its capability gaps. To examine the issue of recruitment in more depth, it is worth discussing some specific factors that may be keys to the problem.

Education Levels

For the past ten or more years, Defence has raised its recruiting expectations with regard to age and academic qualifications in order to achieve what has come to be known as a 'knowledge edge'. At the same time, Australia's population is aging and the pool of eligible 17 to 24 year olds—the ADF's primary recruiting target—is shrinking.²⁶ Still, has the pool of recruits for technical musterings reduced, or has the ADF excluded some sections of the community by setting its entry requirements too high? Are those less academically qualified, who have the aptitude to do less academically demanding tasks, being excluded? Do those who have higher academic qualifications have too high an expectation of themselves to be happy performing these less academically demanding tasks? A 1991 report on Defence Force Recruiting by the Inspector-General Division highlighted that the Services must broaden their recruiting base because, as the number of 17 to 25 year olds decreases, the competition to employ them increases.²⁷

Higher education standards are leading people to expect more challenging and prestigious employment such as engineering and other professions. 'Blue-collar' jobs are generally less appealing to more highly educated people. Government policies brought about the demise of ADF apprenticeship schemes that built technicians 'from the ground up' in 1993.²⁸ The ADF no longer recruits people under 17 years of age. This has forced most students who would otherwise have considered joining the ADF

²⁶ Schindlmayr, *Australian Defence Organisation Personnel Environment Scan 2020*, *passim*.

²⁷ Inspector-General Division, *Defence Force Recruiting*, Program Evaluation by Inspector-General Division, Department of Defence, Canberra, 1991.

²⁸ Coulthard-Clark, *From the Ground Up*, pp. 139–49.

after Year 10, to go on to Years 11 and 12 despite not having the academic aptitude, or perhaps attitude, to do well at the higher level.

It may well be that the ADF needs to take a step back and recruit less academically successful, and perhaps younger, personnel and 'grow' them to satisfy its maintenance requirements. Apprenticeships are recognised as being able to develop a strong degree of group identity and personal bonds between course members, and a strong institutional commitment to the Service.²⁹ Therefore, the reintroduction of an apprenticeship-style training scheme, despite being viewed politically as a backward step, is likely to boost both recruitment, and in the longer term, retention as well. Of course an increase in ADF technical capability is also a likely outcome, as described in Chapter 3.

There are several precedents of organisations re-establishing apprentice-style training schemes. The Australian Government's *Department of Education, Training and Youth Affairs*, for example, has reinvigorated apprenticeship-style training through the introduction of its 'New Apprenticeship' scheme.³⁰ The UK and US Governments have successfully implemented similar programs. The armed forces of both the UK and US have realised the necessity of apprenticeship training in building the highly skilled technicians that defence needs to fill the top end of the technical capability spectrum. The UK MoD's Defence Aviation Repair Agency (DARA), US Navy's Naval Air Depot (NADEP), and the US Air Force's Air Logistics Centres (ALCs) are all examples of large organisations re-embracing apprenticeship-style training to ensure the depth of maintenance capability their forces require is sustained.

Targeting Specific Groups

Whilst much of the defence recruiting effort is focused on attracting people to the ADF as a whole, or to individual Services, there is a school of thought that suggests more emphasis should be placed on making employment in Defence attractive to specific target groups. The idea of targeting specific groups is a realisation that not all people are the same—that different groups of people desire different things from their job. While Defence has for a long time tended to 'tar its employees with one brush', the crisis it faces over personnel shortfalls in particular categories has forced a rethink of its recruitment strategy.

Defence has to ensure it identifies its own internal segments. It must then turn its attention to corresponding labour market segments, focusing on what it takes to lure those segments into the Services. As the Joint Committee on Foreign Affairs, Defence and Trade stated in their 1988 report on *Personnel Wastage in the ADF*, '...retention strategies must be directed at both the needs of the broader ADF and those of specific

²⁹ Coulthard-Clark, *From the Ground Up*, pp. 148–49.

³⁰ New Apprenticeships Web Site, <http://www.newapprenticeships.gov.au>, accessed 29 October 2001.

specialist groups within the force'.³¹ It has taken a while for Defence to heed that remark, but there are currently several advertisements targeting specific career fields in the media. The results of these campaigns are yet to be observed.

The targeting of specific groups within the ADF, in a holistic manner, has started to bear fruit as evidenced by the Engineer Sustainability Project (ESP). The ESP team spent time determining the concerns of the ADF's aviation engineer workforce, analysed the information against both internal and external trends and experiences, and finally developed a range of recommendations aimed not simply at getting more recruits or keeping more in, but at the sustainability of the specialisation as a whole.

The top three concerns were remuneration, career management and recognition. Whilst the ESP team's recommendations are pending the outcomes of the *Nunn Review*, their recommendations addressing the other two areas have already resulted in lower separation rates and higher recruitment rates—the later predominantly from the non-commissioned ranks.³²

From the interviews conducted as part of this paper, the top issues concerning the ADF aviation technical workforce are the same as the engineers, although in different order of importance depending on locality. Whilst this would have to be confirmed through a more thorough scientific survey of the technical workforce, a similar range of solutions tailored to ADF technicians is likely to produce similar results. The bottom line is the organisation recognising the value of its people, respecting them and looking after their interests.

Civilianisation and Outsourcing

The civilianisation of military positions and the contracting out of so-called 'non-core' functions is more a concern in the retention side of this paper. However, one can never belittle the effect that extensive civilianisation and outsourcing can have in dissuading potential recruits. The two major questions they are likely to ask themselves are 'How long will I have a job?' and 'Why not do the same job as a civilian and not have to put up with military life?' Although civilianisation and outsourcing programs were considered by some to be a way of mitigating the poor recruitment and retention levels in the ADF, there is evidence that these programs have actually contributed to both problems. This issue will be addressed in more detail in Chapter 5.

³¹ Commonwealth Parliament, *Personnel Wastage in the Australian Defence Force*, Report of the Joint Committee on Foreign Affairs, Defence and Trade, AGPS, Canberra, 1988, p. xxvi.

³² Presentation by the ESP team to the 2001 Armament Conference held at RAAF Fairbairn, 29 October 2001; ESP Web Site, <http://defweb2.cbr.defence.gov.au/raafeng>, accessed 29 October 2001.

Second-Class Syndrome

There is a perception that the Services desire officers more than other ranks and this leads to the belief that officers are more important. The term 'other ranks' alone illustrates this fact. Excessive wastage rates and problems with recruiting and retention are affecting officer corps too, and the RAAF has introduced policies to bolster the officer corps by recruiting from within. In his study of the inequities between officers and airmen, Stephen Pickard suggests that this conveys a message that the non-commissioned ranks are far less important.

Again, we see this perpetuation of the importance and status of commissioned officers over non-commissioned officers. Due to the competitive nature of the selection process only the top performing members of the other ranks are selected for commissioning. Therefore the best airmen are not viewed as an asset to the non-commissioned ranks but as an opportunity for the commissioned ranks, and the long-term ramification will be a weakening of the non-commissioned workforce.³³

Fear of Responsibility/Threat of Litigation

This is a factor that mainly affected the United States aviation industry in 1999 but, as these things usually do, may already be having an impact on the aviation industry in Australia now. The fear of legal reprisal if an accident occurs is the direct result of the litany of regulations under which aviation technicians have to operate and the high degree of responsibility for safety of flight that is placed on individuals. Civil Aviation Safety Authority (CASA) regulations, which aim to ensure airworthiness, ensure that individuals can be held criminally liable for their work.³⁴

RECRUITING AND RETENTION POLICIES

The ADF recruiting and retention philosophy of the early 1990s was based on the idea that to encourage people to join the Services, recruiting policies had to be based on occupational incentives. Once people were recruited, the focus would change to more institutional incentives in order to retain a core of committed talented and experienced personnel. The recruiting policy was followed through with slogans such as 'The Australian Defence Force—a great way to start your career'. Unfortunately, internal efforts to instil institutional commitment to the Services either did not equal those of the recruitment campaign, or more likely, government and financial pressures thwarted many attempts to incorporate institutional incentives.

³³ Stephen Pickard, *Conquering the Great Divide*, a paper for the Masters of Defence Studies subject Armed Forces and Society, ADFA, Canberra, 2001, p. 7.

³⁴ Edward H. Phillips, 'Recruit Program Targets Mechanics', *Aviation Week and Space Technology*, McGraw-Hill, 5 July 1999, p. 41.

The current approach to both recruitment and retention has its basis in occupational motivation, for example pay and allowances, flexible and fixed term employment, and individual contracts. Basically, for every 'sacrifice' a person makes the amount of compensation—whatever the form—must be known. This is in contrast to an institutional mindset, whereby 'sacrifices' are made in the knowledge and comfort that, in the end, the organisation would look after you.

HOW CAN THE ADF BETTER RECRUIT TECHNICIANS?

During the interviews conducted as part of the research for this paper, participants offered a range of suggestions in relation to improving the ADF's recruiting figures for technical personnel. The main point was that recruiting centres must target individual specialisations as well as whole Services or the ADF. Participants acknowledged that recruiting centres had certainly started to adopt this strategy as part of their advertising campaigns, and were becoming much more informed about the details of specific trades so that they could better inform and motivate potential recruits. Nevertheless, it was thought that the ADF could be more pro-active in targeting the cadet forces, schools, TAFE colleges and other technical institutions.

Another important factor highlighted was that Defence did itself no favours in the timing of its recruit intakes. It was felt that the ADF could time intakes better to ensure the maximum possible draw from potential recruits before they decide to take up other offers. This opinion was based on the fact that most people leave school at the end of the calendar year. If the ADF was able to accept a very large intake very early in January (as it used to with apprentices), it could keep the interest and patience of many school leavers who are unwilling or unable to wait until later in the year to join the ADF.

One aspect already partially addressed by ADF policies is the possibility of flexible career paths. Whilst it is still preferable to keep talented and experienced personnel in the ADF for a long period of time, it is becoming increasingly more difficult to do so. Therefore the ADF has made it far easier for people to leave and return to the Service as their personal and occupational needs change. Newer policies acknowledge and value previous Service experience, in contrast to past policies that penalised people who left and later decided to return. An extension of this, that has yet to be exploited, is the employment of tradesmen with civilian training and experience, who could be brought up to military standards through sponsored 'bridging' courses. At present the employment of non-aviation or unqualified aviation tradesmen is a popular cost reduction option used by defence aviation contractors (albeit not a practice necessarily endorsed by the ADF). If the ADF was to recognise the qualifications and experience of such people and offer courses designed to bring their skills up to the level the ADF requires, it may be possible to attract them into the military, for a short period at least. The incentives for them would be increased qualifications and guaranteed employment (say, four to five years) initially, and better paid civilian employment after their period of service in the ADF. The training could either be developed at RAAFSTT and include a military indoctrination phase (thereby segregating these

'special' people from the general masses), or sponsored through accredited aviation technical training institutions with indoctrination being conducted at individual Service Recruit Training Units (RTUs).

RECRUITING CENTRE PERFORMANCE

All the preceding recommendations are very likely to improve both recruitment and retention rates. Offering people greater flexibility, job security, better job satisfaction and better professional development are all excellent recruitment inducements. However the ADF must be more informative and pro-active in its marketing of military employment. Recruiters should not simply advertise and wait for people to come to them. They should be out visiting schools, colleges, scout and guide troops, cadet forces and similar institutions to inspire interest early.

ADF recruiting centres tend to behave very bureaucratically, failing to process applications quickly enough and failing to energetically maintain the interest of prospective recruits. Unfortunately these behavioural characteristics contribute significantly to the ADF's poor recruitment to registration of interest ratio which currently stands at four recruits for every 100 that express an interest in joining.³⁵

CONCLUSION

The need for the ADF to adopt more occupationally oriented practices, like flexible employment and career management strategies, that offer personnel more control over their own careers, is recognised in a number of reports including the recent *Nunn Review*.³⁶ However, the *Nunn Review* is somewhat different in that, whilst many of these reports have a common basis in financial analysis, the others fail to recognise the social implications of their recommendations. The *Nunn Review* could therefore be considered more balanced. The Review recommends a range of financial and policy initiatives aimed at improving the conditions of Service of military personnel and recognising the value of individuals and specific groups within the organisation. Remarkably, whilst criticising the very institutional bureaucracy that has traditionally pervaded the ADF, and all defence forces for that matter, most of the 'occupational' recommendations were very much focused towards the ADF better looking after and recognising the value of its people. In this respect the recommendations have a somewhat 'institutional' perspective. The one thing that the ADF can realistically offer its technicians over its civilian 'competitors' is long-term, secure employment—a 'job for life'.

Finally, Defence and the individual Services need to understand 'what makes techo's tick'. That is, examine the needs, desires and attitudes of the technical workforce and target their recruitment and retention strategies accordingly. However, this cannot be

³⁵ Barry Nunn, Peter Kennedy and Les Cupper, *Review of Australian Defence Force Remuneration*, Commonwealth of Australia, Canberra, 2001, p. 7.

³⁶ *Ibid.*

done to the exclusion of individual Service identity. The Armed Forces must regain their sense of identity and celebrate their uniqueness in Australian society rather than believing that their differences unnecessarily alienate them. The general public recognises that the Services are different, although most do not understand why and many would not want to know.

People do not mind paying for defence from the Commonwealth budget, as long as they feel they are getting value for money. In this respect, people do not need to be informed of ADF activities and expenditure, they need to be better educated about the ADF's capabilities and how the maintenance of those capabilities contributes to Australia's security. Emphasising the importance of high quality technical personnel in that picture is an attraction in its own right. The challenge of being 'the best of the best' is one that most technically talented people find hard to resist.

However, once recruited, the Services must ensure they are able to follow through with the image portrayed. 'The best' have to be trained to be the best, recognised internally and externally as the best and, most importantly, feel like the best. It is most unfortunate that as little as ten years ago ADF aviation technicians were considered exactly that—the best. A lack of change management strategy, a focus on budget over people and the poor implementation of major reviews like the Technical Trades Restructure, the Commercial Support Program and the Defence Reform Program, have made ADF personnel generally and technical personnel in particular feel very under valued by the organisation.



Figure 4.2 B707 engine diagnostics.³⁷

³⁷ Photograph from DEFWEB Image Gallery, <http://defweb.cbr.defence.gov.au/home/gallery.htm>.

Retention

The essential basis of military life is the ordered application of force under an unlimited liability. It is the unlimited liability which sets the man who embraces this life somewhat apart. He will be (or should be) always a citizen. So long as he serves he will never be a civilian.¹

... a class of men set apart from the general mass of the community, trained to particular uses, formed to peculiar notions, governed by peculiar laws, marked by peculiar distinctions.²

... Our standards must be higher than those that prevail in society at large ... [members of the military must] always exhibit the utmost in principled behaviour, off-duty as well as on.³

INTRODUCTION

The quotations above exemplify the professional ethos of the military and go a long way to supporting the ideal that the military is, indeed, a profession. There is little doubt that the military is seen to exemplify the highest levels of morality and integrity within society. It may be the case that the expectation of a higher moral code is greater within the military than outside. Society expects military personnel to exhibit values and standards—honesty, integrity, commitment, discipline, obedience, courage, nonpartisanship—which are in many ways superior to those in civilian life.⁴ Writers such as Huntington believe the military need to be different and separate from society.⁵ Others, like Morris Janowitz, argue that the military should become more like society, reflecting predominant values in the community.⁶ Janowitz believes it is, in fact, dangerous to segregate the military and its values from mainstream society.

¹ General Sir John Hackett, 'The Profession of Arms', *London Times*, 1963, p. 222.

² William Windham, 1869, quoted in Major Louis E. Grimshaw, 'Ethical Tensions for Senior Leaders in the Canadian Forces', notes for a seminar workshop at JSCOPE XVII, Washington DC, January 1995.

³ General Ronald R. Fogleman, USAF Chief of Staff, from a letter released to the public early in 1996 through the *Air Force News Service*, Washington, DC.

⁴ Hugh Smith, 'The Decline of the Military Profession in Australia?', *Defence Force Journal*, No 74, January/February 1989, pp. 5–13.

⁵ Samuel P. Huntington, *The Soldier and the State*, Harvard University Press, 1957, Chapters 1, 3 and 17.

⁶ Morris Janowitz, *The Professional Soldier*, Free Press, New York, 1971, Chapter 20, pp. 417–42.

J. Carl Ficarrotta recognises that military professionals are bound by what he terms a higher moral standard.⁷ In examining the reasons for this, Ficarrotta challenges the validity of this attitude claiming that, outside of functionally driven contexts, society has little or no basis for asking the military more insistently than others to be moral, or blaming them to a greater extent than others are blamed for the same offences.

In studying the growth and sustainability of aerospace technical expertise in the Australian Defence Force, it is impossible not to consider adverse retention rates as a major contributor to loss of expertise. Many factors combine to produce a set of circumstances that make it less desirable for a person to remain in the Services than to risk employment in private industry, an environment that has for many years been considered less secure and, perhaps, less rewarding. The exodus of personnel from the armed forces in Australia can be attributed, at least in part, to the blurring of the distinction between the military profession and society at large. Military ethos—the character, disposition and fundamental spiritual characteristics that prescribe military culture—is rapidly being eroded, and the military is finding it impossible to replace that one aspect of military life that distinctly (in the eyes of military members) made life in uniform acceptable, enjoyable and, ultimately, preferable to civilian life.

The number and complexity of issues affecting retention in the ADF is vast. For this reason it is important to have not only a general understanding of the overall personnel environment both within and outside the Defence Force, but a very good understanding of the issues affecting specific groups or specialisations within the Force. This chapter discusses several broad issues affecting the retention of Defence personnel in the lens of an Institution/Occupation model. The main argument is that, whilst a recruiting campaign based on occupational incentives may be valuable, the key to retention is to bring back some of the institutional incentives that make people feel that they are important to Defence, part of Defence and that Defence is prepared to look after their interests as well as employ them. The regrowth of military ethos is essential in developing an institutional working and living environment within the ADF.

INSTITUTION/OCCUPATION MODEL

As discussed in Chapter 4, a number of concepts have been developed to assess the nature and extent of changes in the armed forces. Of these, the Institution/Occupation model, is particularly useful in analysing the changes that seem to be affecting the Australian military, and contributing to the poor retention rates the Services are currently experiencing.⁸

⁷ J. Carl Ficarrotta, 'Are Military Professionals Bound by a Higher Moral Standard?', *Armed Forces and Society*, Vol 24, No 1, Fall 1997, pp. 59–75.

⁸ Charles C. Moskos, 'From Institution to Occupation: Trends in the Military Organization', *Armed Forces and Society*, Vol 4, No 1, Fall 1977, pp. 41–9.

In this chapter the concept of institution versus occupation is used as a basis for explaining that, while an occupational philosophy may help in the challenge of recruiting personnel, the ADF can not afford to compete with commercial industry to retain personnel on a strictly occupational basis.

GENERATIONAL DIFFERENCES

Evidence of distinctly institutional and occupational outlooks was clearly evident during a series of seminars recently conducted with a variety of ADF personnel.⁹ The more senior members talked long and hard about how things have changed and how they long for a return to the 'good old days', away from the self-serving attitudes of the 'troops' today. They talked about the sense of belonging that used to exist, the knowledge you belonged to a system and that 'the system' would look after you. Recognition was achieved through the respect of your peers and that respect was reflected in the annual reports that rewarded the best people with promotion. Even though promotion from corporal to sergeant often meant an overall drop in disposable income because of mess fees and increased married quarter rental, no one minded because it was considered reward enough to be permitted to enter the hallowed halls of the Sergeants Mess and become one of the Chairman's new acolytes.

The difference was also acknowledged by the younger members, most of who admitted to only being committed to the minimum period of service in the defence force. They recognised that market forces would lure them away at the end of their six year initial service period and felt that the institution did not offer any incentive to remain longer. When asked what types of incentives defence could offer to retain their experience, most replied in monetary terms only. Some suggested that it would require a retention bonus of around \$5,000 (AUD) per year, which sounds high, but is equivalent to only one third of the retention benefit recently offered to engineering officers.

The more senior members, whilst recognising that 'the world had changed', remained adamant that a return to a more institutional ethos would be more effective in retaining personnel, despite the occupational outlook of today's youth. They argued that this outlook was the result of a lack of choice, and that, if the military were to start recruiting with the message that it would look after you for life, and backed that message with policies and provisions to do so, the type of people the military want would be more likely to be attracted and retained.

⁹ A series of private interviews and group seminars conducted by the author over an eight month period with maintenance, engineering and logistics personnel, supervisors and managers representing all of the ADF's combat aviation Force Element Groups, 2001.

GOVERNMENT EDICT

The 1994 Defence White Paper clearly indicated that the Government wished to change both the distinct institutional image of the ADF and the reality, and it was adamant that the Defence Force must move closer to the wider community.¹⁰ The Government's position has been publicly reaffirmed many times since. At the same time, the White Paper recognised that there was a need to maintain the institutional integrity of the ADF. In their effort to reconcile this apparent conflict in direction, and perhaps because the emphasis in the paper was far more on the former proposition, Defence policy makers appear to have effectively disregarded the latter as mere rhetoric.

Advertising campaigns indicate that the military institution itself is now actively recruiting people with an occupational outlook. Nationally recognised training, individualism and remuneration are all strongly promoted. Mark R. Grandstaff argues that the last several generations of military leaders earnestly crafted a personnel system whose incentives and rewards inexorably (if unintentionally) promoted a pronounced spirit of occupationalism in the ranks.¹¹ He sees the evolution of the enlisted corps as an aspect of the ascendancy of big business in 20th Century society. This is, of course, not a view restricted to Grandstaff nor the US Air Force (USAF) to which he was referring, but one that is espoused by many people in all arms of the US military and in many armed forces today.¹²

From its inception the USAF, like the RAAF and Australian Navy and Army air arms, was centred on technology, and technology demanded enlisted men be able to master complex aviation skills. Over time, the advance of aviation technology has further escalated requirements for skilled technicians and the need for increased functional specialisation.¹³ Most enlisted members are clearly technicians first, and soldiers a distant second.

The challenge of attracting and retaining a talented, technically oriented work force led past Defence policy makers to adopt the assumptions, beliefs, and practices of the civilian business world. The result was a 'progressive' approach toward recruiting, training, and retention that placed much more emphasis on opportunities to acquire a marketable skill than on appeals to an individual's patriotism, desire to serve and spirit of adventure.¹⁴

¹⁰ Defending Australia, *Defence White Paper*, 1994, p. 70.

¹¹ Mark R. Grandstaff, *Foundation of the Force: Air Force Enlisted Personnel Policy 1907–1956*, Air Force History and Museums Program, Washington, DC, 1997, <http://www.airpower.maxwell.af.mil/airchronicles/bookrev/grandstaff.html>, accessed 25 July 2001.

¹² Research tour of the United Kingdom and United States of America, with particular focus on the Royal Air Force, US Air Force and US Navy, August 2001.

¹³ Grandstaff, *Foundation of the Force*.

¹⁴ *Ibid.*

Grandstaff's findings are based on the USAF context, however the recruitment and retention policies of the ADF and most Western military forces have developed no differently. Grandstaff's findings have important implications for the ADF. The pressing question now concerns the degree to which occupationalist tendencies spawned by the personnel policies of yesteryear are inhibiting the efforts of current leaders to engender a force-wide commitment to 'core values' and an expeditionary mind-set.

Another point to be considered is that the occupational approach to retention may be too expensive for Defence. It may be that an investment in institutional incentives would attract more people to stay longer for less monetary reward. Such incentives could include better recognition for time served, informal social and family rewards distinctive to military life like free travel on military aircraft, subsidised Unit functions, Unit sponsored mementos on posting (for both individuals and families), and other incentives that come from the organisation and effectively thank the family unit for being part of the Unit and the Service.

KEY REASONS FOR SEPARATING FROM THE SERVICES

In 2000, the Australian National Audit Office (ANAO) published a report concerning the retention of military personnel in the ADF.¹⁵ The ANAO conducted interviews with a range of personnel to ascertain what factors caused members to re-evaluate their continued employment in the military. Although the results are only considered indicative, the following factors would cause members to seek a discharge when presented the opportunity to do so:

- inadequate career progression,
- a detrimental effect on families,
- a negative effect on spouse career,
- an increasing emphasis on efficiency (as opposed to effectiveness),
- perceived Defence indifference to the effect that continuous change has had on ADF members,
- a decline in military ethos, and
- poor job satisfaction.

¹⁵ Australian National Audit Office, *Retention of Military Personnel: Australian Defence Force*, The Auditor-General Audit Report No. 35, 2 April 2000, p. 15.

The ADF Exit Survey¹⁶ and Attitude Survey reports¹⁷ support these findings to a greater or lesser degree.

WHY ARE TECHNICIANS LEAVING THE ADF?

*Engineers traditionally have not stayed in the [military] for money but, as soon as the other incentives disappear, engineers will leave in droves. This has already begun.*¹⁸

Overworked

Increases in technical efficiency lead to increased work intensity, which can provide economic gain up to the point that workers break down. The costs of down time, rehabilitation, compensation, recruitment and training, not to mention reduced morale and increased voluntary separation, all must be factored into the equation.¹⁹ There is no doubt that maintenance staff at operational units are overworked. The simple fact is that whilst many units are only slightly undermanned compared to their Constrained Establishment (CE)²⁰, there are tasks that consume large amounts of time that have not necessarily been factored into CE calculations. Additionally, as described in Chapter 3, CE figures are based on a unit having a full complement of trained and experienced personnel and this is rarely, if ever, the case.

Most units bare the additional burden of a higher than expected training overhead as described in Chapter 3. Operational units have also been forced to take on non-traditional training roles because of restructuring, civilianisation and corporatisation of many Defence functions.²¹ These include driver training, ground support equipment handling and in many units, weapons training. Units not only have to provide personnel and have them trained as instructors, they have to manage the administrative overhead of tracking the training currency of individuals for these and many other training requirements.

¹⁶ A. Goyne, P. Timmins and L. Campbell, *Report of the 2000 Australian Defence Force Exit Survey: Reasons for Leaving*, Directorate of Strategic Personnel Planning and Research, Research Note 2/2001, Department of Defence, Canberra, 2001.

¹⁷ Gary Hanson, Perri Timmins and Kath Sowry, *A Content Analysis of Defence Reform Program Comments from the 1999 ADF Attitude Survey*, Directorate of Strategic Personnel Planning and Research, Technical Note 3/99, Department of Defence, Canberra, September 1999; and Felicity Summers, *2001 Defence Attitude Survey Report*, Directorate of Strategic Personnel Planning and Research, Research Report 5/2001, Department of Defence, Canberra, September 2001.

¹⁸ Brad Wheatley, *Application for Transfer to RAAFGR WGCDR B.J. Wheatley O126167 AERO: Grounds for Dissatisfaction*, email to colleagues and friends, 21 July 1999, p. 6.

¹⁹ John Quiggin, *Great Expectations: microeconomic reform and Australia*, Allen and Unwin, Sydney, 1996, p. 173.

²⁰ The term Constrained Establishment refers to the peacetime manning level determined to ensure a minimum level of capability (MLOC) for that Unit.

²¹ Interviews and seminars, 2001.

Cannibalisation

As described in Chapter 2, cannibalisation is the act of removing a serviceable part from an aircraft or assembly that, for other reasons, is not capable of completing an operational task, and fitting it to another aircraft or assembly so that it is capable. All military services use cannibalisation extensively as a routine maintenance strategy. Between 1996 and 2000, the US Navy and Air Force reported about 850,000 cannibalisations, requiring over five million maintenance hours.²² Evidence shows that increasing the workload of maintenance personnel has a negative effect on morale and that cannibalisations require at least twice the maintenance time of normal repairs.²³ This, in turn, contributes to excessive overtime, morale and retention problems, and additional costs incurred in recruiting and training new personnel.²⁴

No Such Word As 'No'

The frustrations of personnel are increased when it is obvious that a maintenance task will not be completed on time without severely stretching the personal resources of the maintenance staff involved. Even the military 'can-do' attitude has its limits, both in the amount of effort that can be expended and in the number of times it can be called upon, yet it is a very brave supervisor or manager who tells his or her commander that the aircraft or system will not be ready. The inability of supervisors and managers to say 'no' and of commanders to acknowledge the word 'no' are common perceptions among maintenance staff.²⁵

Civilianisation and Outsourcing

*The unfailing formula for production of morale is patriotism, self-respect, discipline and self-confidence within a military ... joined with fair treatment and merited appreciation from without ... It will quickly wither and die if soldiers come to believe themselves the victims of indifference or injustice on the part of their government.*²⁶

The adoption of contracting policies has not been driven by concerns about optimal allocation of risk, but rather by a desire to cut the costs of service provision, frequently at the expense of employees. Much of the measured gain from contracting

²² Neal P. Curtin, *Military Aircraft: Cannibalisations Adversely Affect Personnel and Maintenance*, Testimony before the Subcommittee on National Security, Veterans Affairs and International Relations, US General Accounting Office, 22 May 2001, p. 1.

²³ Curtin, *Military Aircraft*, p. 6.

²⁴ Curtin, *Military Aircraft*, p. 8.

²⁵ Interviews and seminars, 2001; and research tour by author, August 2001.

²⁶ Douglas MacArthur, *Annual Report*, Chief of Staff, US Army, 1933, in Cathy Downes, *High Personnel Turnover: The Australian Defence Force is not a Limited Liability Company*, Canberra Papers on Strategy and Defence, No 44, Australian National University, Canberra, 1988, p. 39.

out has risen from reductions in wages and increases in work intensity. The net social gain from contracting out in such cases is smaller than the measured gain.²⁷

In order to relieve part of the stress being experienced by the constrained ADF manpower base, three alternative manpower utilisation strategies have been adopted: the substitution of civilian labour for military personnel, better management and more efficient work practices, and the contracting out of a greater proportion of defence work to private industry.²⁸ The advantages, particularly of civilian replacement and contracting out, were seen to be those of financial savings and the release of military personnel to higher priority tasks that can only be performed by uniformed members. While these two strategies appear to offer more efficient utilisation of civilian and military manpower, certain issues can act to degrade any such benefits, and affect the stay-go decisions of service personnel.²⁹

Traditional assumptions that there are tasks which civilians cannot do, have been challenged by a combination of factors. Substantial changes in the skill and occupational mixes in armed forces have resulted in a decline in the number and type of jobs that require military members to perform them.³⁰ Additionally, technological changes have affected the location of military support facilities. For example, the increasing reliance on modular replacement sub-assemblies or 'black boxes' and built-in-test diagnostics in military equipment and weapon systems is designed to limit front-line repair and maintenance activities to simply 'remove-and-replace' tasks. The theory is that less skilled technicians can identify which sub-assembly is unserviceable, replace it with a serviceable unit and dispatch the faulty one for repair.³¹ With a suitable spares pool and repair turn-around time, the repair facility can be located far from the area of operations.

Cathy Downes argues that, '... while it has been argued that it is both increasingly possible and efficient to employ civilians in tasks which have in the past been carried out by service personnel, there are a number of consequences attached to their doing so'.³² She questions the actual cost savings associated with substituting civilian for military labour. For example, civilian workers are seen as less expensive because the Services do not have to invest in their training. However, it is in high technology jobs, where there are direct civilian occupational equivalencies, that there is the greatest scope for substitution. As a consequence, in recruiting civilians the ADF often finds itself simply re-employing its tradesmen, which it has already paid to train. The goal of redistributing the uniformed manpower to other areas is also lost. ADF technicians

²⁷ Downes, *High Personnel Turnover*, pp. 13-16.

²⁸ Department of Defence, *The Defence of Australia*, AGPS, Canberra, 1987, p. 94.

²⁹ Downes, *High Personnel Turnover*, p. 13.

³⁰ Martin Binkin, *Military Technology and Defence Manpower*, Brookings Institution, Washington DC, 1986, p. 6.

³¹ Downes, *High Personnel Turnover*, pp. 13-14.

³² Downes, *High Personnel Turnover*, p. 14.

support this opinion, and are at a loss to understand how the Government and Defence Executive fail to recognise this failure.³³

Civilian labour cannot be employed as flexibly as military manpower. Members of the ADF, because of professional ethics and military discipline, can be tasked with getting the job done regardless of how long it takes.³⁴ In contrast, a civilian labour force is paid by the hour. Moreover, civilian workers will not undertake secondary duties unless paid, trained and willing to do so. It is considerably more difficult to relocate civilian workers than members of the armed forces. This became evident through the implementation of the Defence Reform Program and the formation of the Defence Materiel Organisation, which both involve the relocation of hundreds of civilian positions.

In order to achieve a balance between the more arduous, unpleasant and unpopular military tasks and those that are considered more career enhancing and satisfying, a number of positions must be set aside to provide respite. For example, the RAN seeks to maintain ship/shore ratios in postings at a level to permit people to spend a reasonable proportion of their careers ashore. Amongst other effects, this policy serves to reduce family separations. Civilian substitution reduces the number of respite positions available and hence makes the achievement of such a balance difficult.

Finally, the policy of civilian substitution and contracting out brings ADF members into closer association with the work practices and operating procedures which prevail in civilian industries. This can highlight for the service member the distinctions between his or her own treatment as an employee and that experienced by his or her civilian counterparts.³⁵ Even with civilian and uniformed servicemen working side-by-side, overtime tasks frequently fall to the military member since funding ceilings often preclude paying extra money for civilian overtime. Also, what are the soldier's thoughts on strict military discipline when they note that civilians can have a union steward present when they are 'counselled' for substandard performance?³⁶

If the implementation of strategies of civilian substitution and contracting out are governed simply by the criteria of business efficiency, these strategies have the potential to contribute significantly to levels of posting turbulence and job dissatisfaction amongst members of the ADF.³⁷

As John Quiggin points out, almost any government task, even core activities such as police and military, can and have been contracted out in the past. For example, whilst

³³ Interviews and seminars, 2001.

³⁴ Downes, *High Personnel Turnover*, p. 14.

³⁵ Downes, *High Personnel Turnover*, pp. 13–16.

³⁶ Donald R. Baucom, 'The Professional Soldier and his Warrior Spirit', *Strategic Review*, Vol 13, No 4, Fall 1985, pp. 59–60.

³⁷ Downes, *High Personnel Turnover*, pp. 13–16.

the First Fleet was publicly operated, the Second Fleet was privately operated. The reduced cost was reflected in the greatly increased mortality rate among the convicts.³⁸

WHEN ARE TECHNICIANS LEAVING THE ADF?

The majority of aviation technicians leaving the ADF are doing so after ten to twelve years of service.³⁹ Whilst this may appear to be quite a reasonable length of service, the ADF is really only getting four to six years of return on its training investment given that technicians don't really begin to accrue significant experience until they have served around six years. These technicians have just started to reach 'technical maturity', that is, they have just passed the peak learning period of their development as a junior technician and are starting to settle into their role as senior technicians and technical supervisors. At this point they have the most potential to provide valuable and effective service as an individual, with minimal additional investment from Defence. It is at this point also that they are of most value to commercial employers, who recognise the minimal investment in training and can therefore offer far better remuneration as an incentive to leave the Services and go to work for them. This tests the loyalty of the individual but, because the Service has had too little time to instil much institutional commitment, the lure of a high pay packet is more often than not too great. Because these personnel are generally aged between their late 20s and early 30s, this is often considered a good time to change jobs whilst still young enough.⁴⁰

Another major exit point, for those under the Defence Force Retirement and Death Benefits (DFRDB) scheme, is after 20 years of service. At this time these personnel become eligible to withdraw their superannuation as a lump sum, a life-long fortnightly pension, or a combination of both. This group includes the more senior non-commissioned officers (SNCOs) up to and including Warrant Officers. They are very experienced managers and supervisors and, whilst some resign into genuine retirement, many leave because of a lack of job satisfaction and/or simply because the combination of civilian pay and their pension improves their immediate financial situation.

HOW CAN THE ADF BETTER RETAIN TECHNICIANS?

As discussed in Chapter 4, the ADF and the individual Services need to understand 'what makes techos tick'. That is, examine the needs, desires and attitudes of the technical workforce and target their recruitment and retention strategies accordingly. Many of the suggestions espoused in previous chapters are also likely have a profound effect on retention. Also cited in Chapter 4 were the three most serious concerns that contributed to separation from the Services—career management, remuneration and recognition. These factors all contribute to a lack of job satisfaction.

³⁸ Quiggin, *Great Expectations*, p. 173.

³⁹ Australian National Audit Office, *Retention of Military Personnel*, p. 51; interviews and seminars, 2001.

⁴⁰ Goynes, Timmins and Campbell, *Report of the 2000 Australian Defence Force Exit Survey*, pp. 5–7.

REMUNERATION

The issue of remuneration seems to be well in hand with the *Nunn Review*—probably the most comprehensive, well-balanced review of ADF remuneration and conditions of service conducted in the past decade. Rather than explain the review here, a summary of the report's recommendations has been included as annex B of this paper. There are arguments over whether the occupational basis of many of the recommendations will benefit the ADF institution, because they emphasise a need for individuals to look after their own needs rather than expect the ADF to look after them in its old 'paternalistic' manner. At the same time however, the recommendations give greater authority and flexibility to Service chiefs and commanders to look after their personnel as they see fit. Therefore the paternalism of the ADF is delegated to lower levels where the effects are more direct and, arguably, more effective.

However, one aspect of the report that bears particular mention, on the basis of its opposition to popular opinion, relates to the perception of erosion of conditions of service. The report states:⁴¹

There are extensive mythologies surrounding ADF employment. A pervasive example is a longstanding, almost universal belief among members that there has been a continual erosion of conditions of service over a number of years throughout the ADF.

This view is not supported by an analysis of the facts. In general terms, the ADF has maintained parity with the wider community—at least since the inception of the Defence Force Remuneration Tribunal (the Tribunal) in the mid 1980s—and in some areas actually improved its relative position. Nonetheless, comparative disadvantage appears to be a genuine cultural belief among personnel, including at senior levels. It may be that the move to cash out certain conditions of service over recent years, to the limited degree this has occurred within the ADF, is partly responsible for this belief. Arguably, the poor quality of communications and the absence of accountability for people offer better explanations.

Whilst the view of the Review team may be accurate with respect to **documented financial** conditions of service, the aspects of service employment that personnel believe to have eroded have little to do with their 'pay packet'. The following are just a few examples of 'conditions of service' or 'things that used to be but are no longer':

- Service vehicles used to be available to borrow when not required for service reasons. These days all road movements must be approved by a commander and logged by the individual. Even high ranking officers, who are entitled to the use

⁴¹ Barry Nunn, Peter Kennedy and Les Cupper, *Review of Australian Defence Force Remuneration*, Commonwealth of Australia, Canberra, 2001, p. 11.

of a service vehicle for private as well as official use, are now subject to hefty fringe benefits tax for the 'privilege'.

- Military personnel and their families used to be able to utilise service aircraft for private travel on an opportunity basis when there were seats available. These days there are far fewer regular service flights between fewer military bases, and people are once again subject to benefits tax for the 'privilege' of using space that would otherwise remain unutilised.
- Defence orderly rooms were located within reasonable walking distance of workplaces, were well staffed, and were both willing and capable of supporting all of a member's administrative needs. These days, personnel have to search through a plethora of unrelated, unstructured orders and instructions themselves without the support of trained and experienced administrative staff. They often have to correspond with a multitude of agencies not collocated, or often even in the same city or state as themselves, and usually have to arbitrate between these agencies over their different interpretations of the orders and instructions they do find.
- In the past, nearly all units had a workshop set up and carried some surplus equipment for personnel to carry out odd jobs. These days, all tools must have an identified service-related function and are strictly accounted for. The usage and availability of all facilities is also governed strictly by the Defence Estate Organisation. In fact many of the social and hobby clubs that Defence used to support on welfare and morale grounds, now have to pay rent for the poorly maintained and usually not otherwise required buildings they occupy on military bases.
- Defence inter-service sports used to be heavily subsidised. Now personnel qualifying for inter-service sports teams must take their personal leave to attend, and finance the entire endeavour themselves or rely on team fundraising endeavours.
- The cost of military uniforms has risen considerably in the past few years without a commensurate increase in uniform maintenance allowance. In addition to this, RAAF working dress is no longer considered Public Clothing—as it used to be, and the Navy and Army equivalents still are—so RAAF personnel must now pay for its replacement rather than being entitled to exchange it at RAAF clothing stores.

Although it is not the 'responsibility' of the ADF to provide these services, they are none-the-less services that Defence used to offer. Therefore, with respect to the perception that there has been constant and gradual erosion of what personnel regard as conditions of service, 'perception is reality'. It is not only the erosion of these aspects of service life that dissatisfies service personnel and their families, it is the Government's and Defence senior leadership's total lack of acknowledgment of, or regard for, the significance of these benefits to those receiving them.

Why More Pay is not a Solution

The comprehensive nature of the recommendations of the *Nunn Review*—many of them not related to financial matters—indicates that the solution to retention problems does not lie in remuneration alone. Cathy Downes argues that the debates over why separation rates in the ADF have increased, and most of the actions to reduce them, have centred upon levels of financial compensation. However, the root causes of high personnel turnover are much broader and deeper. Therefore, the responses to it must be broader and more innovative than the continued effort to prove to service personnel that their levels of compensation have not been eroded and are being selectively improved. 'If attention to pay and conditions is substituted for actions taken to address these broader issues,' Downes states, 'there may indeed be a reactive improvement in retention rates. However, as past experience has proven, the effect is most likely to be illusory and ephemeral'.⁴²

Downes' argument is supported by the results of the ANAO Audit outlined previously and an extensive series of personal interviews conducted by the author of this paper.⁴³ More telling, perhaps, are the results of the 2000 ADF Exit Survey.⁴⁴ Of all the pay-related items within the survey, only one appeared in the top 20 (out of 80) reasons for leaving the ADF. This item was '*little reward for what would be considered overtime in the civilian community*', and came in fourth. However the foundation of the responses to even this item is more likely to be related to the excessive number of hours being worked by most serving members rather than any desire to be paid for them.

The requirement, according to Downes, is to provide personnel managers and manpower planners with the resources, skills, tools and authority necessary for prescriptive rather than reactive management of the ADF personnel resource. Policymaking must be shifted from its emphasis on targeting areas of specific critical shortage with short-term fixes, to be policy-making which foresees potential fires, acts to prevent them and limits their spread and effects when they do break out.⁴⁵

RECOGNITION

Rewards and recognition are difficult topics to address in the Australian context. Whilst most people want to be rewarded or recognised in some way for achieving an important goal or doing a difficult job well, there is also a fear of standing out amongst peers. Often, while people are glowing on the inside at having their achievements recognised, they outwardly try to distract attention away from themselves by attributing the credit to their team, or by saying they were only doing their job. Another fear is that people will be considered to be fawning to their

⁴² Downes, *High Personnel Turnover*, pp. 1–2.

⁴³ Interviews and seminars, 2001.

⁴⁴ Goyne, Timmins and Campbell, *Report of the 2000 Australian Defence Force Exit Survey*, p. 20.

⁴⁵ Downes, *High Personnel Turnover*, pp. 1–2.

supervisors and managers. An important consideration in establishing any reward or recognition scheme is that it fits into the culture of the organisation.

Above all other things, reward and recognition schemes must be fair and equitable. The purpose for any reward or recognition must be clearly defined and the assessment of suitable recipients must be simple and fair. Quotas should be avoided because they prevent the recognition of worthy people when there are too many worthy candidates in any given period, and they sometimes allow less worthy candidates to be rewarded when the number of nominations is low. This lowers the credibility of the scheme.

Nomination processes for rewards or recognition should be simple and not take too much time to complete. As stated many times, people are very busy, and the fact that one supervisor has a little more time than another should not influence their ability to nominate personnel. Adequate administrative support is very important.

The actual reward or type of recognition is an important factor also. It must be relevant to the achievement being rewarded. For example, recognition for being the best at something in a given month should not result in a medal that is permanently displayed on a person's uniform. By the same token, a great deal of personal effort that results the development of a new system that will improve Defence capability and dramatically reduce through-life support costs for years to come should not be rewarded via a photocopied certificate delivered through the mail.

Finally, rewards may be financial or non-financial, but one thing they must have is **no catch**. Taxing rewards as 'fringe benefits' may be in-line with civilian practices, but if it has a negative affect on an individual's overall remuneration, such rewards will not be valued and the reward system rendered ineffective.

US Navy Example

The US Navy operate a relatively simple reward and recognition scheme that appears to be very effective in recognising effort and maintaining morale. Once a month each section within a unit nominates its 'sailor of the month'. A unit committee reviews the nominees and selects a 'sailor of the month' for the unit. The reward is a reserved parking space next to the commanding officer's car space. The recognition is by way of an honour board at the entrance to the main buildings of the unit detailing the person's name and often featuring his or her photograph.

Whilst this is a simple reward and recognition system at the unit level, it is very powerful because it expands to encompass the whole US Navy. All the units in a formation or command nominate their 'sailor of the month' and a formation-wide or command-wide 'sailor of the month' is selected. This progresses up the Navy structure and across time until at the end of the year a 'US Navy Sailor of the Year' is selected. This is a very prestigious award that carries significant reward (in personal terms) and involves recognition on the honour boards of every unit throughout the Navy for the following year.

Whilst such a scheme fits well into the US Navy culture, it may not be entirely suitable in the Australian context. However the importance of validating people's efforts through some form of reward and recognition scheme can not be understated. Valued personnel remain committed personnel.

Specialisation Identity

Recognition can be offered in another context too. Both the Australian Navy and Army recognise their individual specialisations or corps by way of distinguishing marks on their uniforms and, in some cases, through the use of different rank titles. The RAAF has shied away from this because of a belief that it will generate unhealthy rivalry between its specialisations, affecting the 'one team' ethos the Service has espoused for many years. However, there is an argument that a little rivalry already exists and that a little healthy rivalry improves productivity and contributes to high morale. For many years RAAF personnel, particularly technical airmen, have suggested that some form of specialisation identification would improve their sense of identity and improve morale. They also point out that aircrew, medical staff and chaplains have always been identifiable through their uniform accoutrements.

The one thing that technical airmen, and every other mustering or specialisation, wants is recognition of their importance and value to their Service and the ADF. The more valuable the commercial market makes them feel, the more the ADF will have to 'prove' that it believes they are equally valuable. Remuneration is part of the equation, but is far from the whole solution.

Recognising Families

The recognition of a military member's contribution to their particular unit or section over time is traditionally recognised just prior to their posting to their next unit in the form of a small memento. This is usually a gift with the unit's crest, a framed photograph or some similar artefact that signifies the unit's identity and role, or the person's achievements. The ADF, in most cases, no longer has the wherewithal to provide this form of recognition and relies heavily on unit social clubs to finance, and sections to arrange, the provision of such mementos. Despite this fact many units do well to recognise the efforts of their members upon their departure (although, sadly, some commanders believe that an unframed, generic colour certificate will suffice). However, units may find that recognising the support that a member's family provides would amplify the effect significantly.

It is well recognised that, in general, defence life is not easy. The only constant is change. People work strange and long hours, they are often away from home for long periods, sometimes they can not even talk to their partners about their work and they often take home their problems at the end of the day. By recognising the support that partners and families give to service members simply by accepting military life and supporting them, whole families will know that their contribution is important—and it

is. Something simple as a memento to the family and a few words of genuine praise would act as a 'force multiplier' with respect to morale.

CAREER MANAGEMENT AND PROGRESSION

Despite the recent efforts of the Defence Personnel Executive and other personnel management agencies in addressing many of the factors attributable to personnel separation from the Services, there are two major issues that are not mitigated by the actions taken so far. These are the excessive overtime and overwork discussed already, and unsatisfactory career management and progression.

Career Management

Career management has been effectively non-existent in the airman workforce to date, however the Army and Navy are performing a great deal better (predominantly because of their much smaller numbers of aviation technicians). Members colloquially describe their career management by the RAAF as a 'bums-in-seats' approach. That is, filling CE positions with people is more important than filling them with the best people, or sometimes even qualified people. The training needs of airmen are prescribed and generally handled generically, and the concept of a career path beyond the broad description of aviation technician is a foreign concept to most.

Whilst the Service does not manage the careers of airmen effectively, nor does it give them the ability to manage their careers themselves to any great extent. Although airmen are able to complete a 'posting preferences' form to the Directorate of Personnel Airmen – Air Force (DPA-AF) at any time, they are not well educated in its use or application as evidenced by comments made by DPA-AF representatives. The main problem is that airmen are not informed of their options so that they can submit reasonable posting preferences. In the absence of realistic guidance they can only assume that all possible options are available to them. This is far from the case as posting and promoting people is a complex task when dealing with such a vast number. There are normally only a few realistic options for people, so when they do not get the posting or position they have applied for over many years, they become frustrated and despondent. If they knew that their preferences were such a remote possibility they would most likely be far more satisfied with being able to make the best of the options they have rather than waste valuable preferences and time.

There are two solutions. The first is to increase the number of personnel in DPA-AF to enable them to better manage the career of each airman. Whilst this may be feasible for the Navy and Army because of the low number of personnel involved, it is not very feasible for Air Force. The second solution would be to make airmen more aware of their career options. Career guidance documents more specific to their situation (for example, progression within their Force Element Group) could be made available. Posting plots indicating who is in what position, how long they expect to be in that position and what qualifications are required to fill that position could also be provided.

This second solution would also be greatly enhanced if a system of mentoring was introduced whereby SNCOs would take a few junior airmen 'under their wing' and guide them as to their posting and promotion prospects, the courses they need to do and, more generally, how to live a military life. This option would take far fewer staff than the first and would be far more effective. Of course communication between mentors, DPA-AF and Headquarters Training Command – Air Force (HQTC-AF) would have to be very effective to ensure mentors could guide their charges accurately. Such a system is currently being implemented for ADF Aerospace Engineers and the expectation of its effectiveness is such that retention rates have already improved and other RAAF specialisations are considering implementing similar initiatives.

Promotion

Promotion in the ADF aviation technical workforce, excluding the RAN which has a severe shortage of personnel, is considered to be quite slow. Additionally, RAAF personnel believe the extant Airmen Evaluation Report (AER)⁴⁶ system is flawed and inequitable.⁴⁷ These factors have contributed to some dissatisfaction and, in extreme cases, separation from the Services. There is no solution in the current system except perhaps a lengthening of the time it takes to reach CPL rank. This would have two outcomes. The first would be a reduction of the 'bottle neck' at CPL rank competing for promotion to SGT. The second, and probably most beneficial outcome, would be a reduction of the current expectation of rapid promotion that the virtually guaranteed, 'on-time' promotion to CPL instils.

There are other options however, that require a little more flexible thinking as they have greater affect on the culture of the Services. They involve adapting the extant career progression paths to allow technical tradesmen to specialise in particular fields in lieu of promotion, and to be remunerated based on their specialist skill and experience.

Flexible Career Paths

In its 1988 report on personnel wastage in the Australian Defence Force, the Joint Committee on Foreign Affairs, Defence and Trade (JCFADT) suggested that job specialisation should prove attractive to those whose aspiration is to work in the ADF rather than lead or manage elements of it.⁴⁸ It went on to say that '... there is considerable scope for the ADF to offer more opportunity for job specialisation, which in turn would enhance the job satisfaction of those for whom this issue is

⁴⁶ An AER is submitted annually on each airman and airwoman and forms the basis upon which they compete for promotion. Further information can be found in Defence Instruction (Air Force) PERS 4-2, *Airmen and Airwomen Performance Evaluation System*, 20 November 1997.

⁴⁷ Interviews and seminars, 2001.

⁴⁸ Commonwealth Parliament, *Personnel Wastage in the Australian Defence Force*, Report of the Joint Committee on Foreign Affairs, Defence and Trade, AGPS, Canberra, 1988, p. 159.

paramount'.⁴⁹ The following examples present options for specialisation as well as promotion, to ensure that those without the desire, aptitude or opportunity for promotion have more options for career advancement.

In acknowledging the need for job specialisation for other than RAAF pilots, the JCFADT report identified that excessive loss rates among some groups of technical specialists, suggested that job specialisation is one of the issues the ADF must address if it is to retain sufficient numbers of technical staff. The JCFADT ventured that there could only be an increasing demand for their skills as levels of technology increased and Australia moved to restructure its economy away from its reliance on commodities.⁵⁰

The JCFADT report identified two models for job specialisation. The first was designed to meet the demands of a particular specialisation at a particular point in time. It would best be described as category specific and closely resembles the system implemented for RAAF pilots in the late 1980s.⁵¹

The second model presented a broader approach to the question of specialisation, particularly for enlisted ranks. By placing as much emphasis on progression in skill as on promotion in rank, the possibility of giving those individuals continuing job satisfaction with a commensurate level of remuneration would be enhanced.⁵²

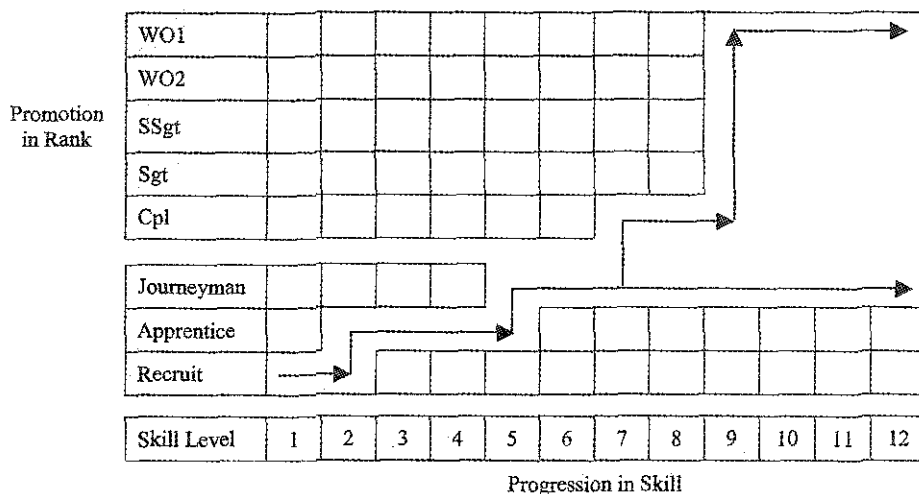


Figure 5.1 Career Profile: High Technology Content Occupation.⁵³

⁴⁹ Commonwealth Parliament, *Personnel Wastage*, p. xxxiii.

⁵⁰ Commonwealth Parliament, *Personnel Wastage*, p. 159.

⁵¹ Commonwealth Parliament, *Personnel Wastage*, pp. 159–61.

⁵² Commonwealth Parliament, *Personnel Wastage*, pp. 161–2.

⁵³ Commonwealth Parliament, *Personnel Wastage*, p. 163, Figure 5.1.

Figure 5.1 illustrates how this concept would permit advancement both vertically in rank to reward responsibility, and horizontally to recognise higher levels of skill, knowledge and experience. The blank area at the top right represents an area of flexibility. The key is the expanded scale for recognition of skill, which represents greater opportunities and incentives to specialise. The JCFADT report states: ‘... as the technological base of the ADF continues to expand, this model is likely to become increasingly cost-effective’.⁵⁴ There is also no reason why the option to remain a specialist or progress to management could not be offered at key career points by selectively applied retention packages to make the best of both specialisation models. The Committee recommended that the CDF direct the single Services to develop career profiles in accordance with these models. Unfortunately only parts of the first model seem to have been adopted, probably because they were already coming into being, and the second model seems to have been ignored or dismissed.

In 1995, Squadron Leader Brad Wheatley, a student at the RAAF Staff College, produced a paper entitled *A More Cost-Effective Rank System for the RAAF*.⁵⁵ The paper proposed an alternative rank system with the benefits of emphasising proficiency, allowing rapid adaptation to changes in society and technology, emphasising preparedness and being simple and cheap to administer. The system comprised three ranks; each divided into four categories. Personnel would be promoted from one rank to the next, but may be re-categorised within each rank depending on their proficiency.

Categories ⁵⁶	Ranks		
	<i>Operative</i>	<i>Supervisor</i>	<i>Commander</i>
	A	A	A
	B	B	B
	C	C	C
	D	D	D

Table 5.1 Ranks and Categories in the Alternative Rank System.⁵⁷

⁵⁴ Commonwealth Parliament, *Personnel Wastage*, p. 162.

⁵⁵ Bradley J. Wheatley, *A More Cost-Effective Rank System for the RAAF*, Staff Course Reynolds Paper, SC/50/1234, 8 October 1995.

⁵⁶ Category D has completed formal training but is still undergoing on-the-job training before being categorised as basically proficient in the job. Category C is basically proficient in the job (can handle all routine and some non-routine situations). Category B is quite proficient (can handle most non-routine situations). Category A is an expert.

⁵⁷ Wheatley, *A More Cost-Effective Rank System*, annex D, p. 1.

Although the specific details of this system are beyond the scope of this paper, its similarity to the second model proffered by the Joint Committee on Foreign Affairs, Defence and Trade is obvious. Both models offer individuals the choice of either specialising and progressing according to skill level, or generalising and becoming a supervisor or commander.

Wheatley details the operation of his model superbly in his paper, but the important issue for this paper is the system's benefits and shortfalls. Annex E to Wheatley's paper evaluates the positive and negative aspects of both the extant and proposed rank systems and is included in Annex C of this paper. The most pertinent criterion for this chapter is how the proposed system would affect retention. Table 5.2 details the positive and negative aspects of both the extant and proposed rank systems.

<i>Criterion</i>	<i>Current System</i>		<i>Alternative System</i>	
	<i>Positive Aspects</i>	<i>Negative Aspects</i>	<i>Positive Aspects</i>	<i>Negative Aspects</i>
Minimise attrition effects	Provides rewarding careers for some that meet personal and RAAF requirements	Does not encourage minimisation of personnel attrition in peace Does not encourage personnel to be trained and proficient before performing tasks in peace Does not ensure that personnel are as proficient as possible in a war	Provides rewarding careers for most that meet personal and RAAF requirements Encourages minimisation of personnel attrition in peace Encourages personnel to be trained and proficient before performing tasks in peace Ensures personnel are as proficient as possible in war	Nil ⁵⁸

Table 5.2 Rank System Evaluation against Attrition Effects.⁵⁹

The benefits of the Wheatley and JCFADT models are likely to be applicable to other specialisations and Services as well. Of course changing to such a radically different structure would require a massive shift in culture, particular on behalf of the older generations within Defence, but the issue requires an innovative and radical solution.

⁵⁸ Whilst Wheatley argues that there are no negative aspects to the alternative rank system, his opinion seems to be limited to his comparison with the current system. Whilst the alternative system may help to reduce many of the inadequacies of the current system such that it appears more equitable, it is bound to suffer from the vagaries of human relationships and interpretation to some extent.

⁵⁹ Wheatley, *A More Cost-Effective Rank System*, Annex E.

PROFESSIONAL RECOGNITION

In the technical arena, creativity is often a more valuable tool than academic qualifications. Unfortunately, ADF bureaucracy and the development of very prescriptive regulatory mechanisms tends to stifle creativity. Technical people want to **do** and **think** and **create** and **explore**. They do not want to follow 'dot-to-dot' style maintenance manuals.⁶⁰ Many believe that the current ADF aviation regulatory system has gone too far in prescribing how to do the jobs. The perception is that, because newer technical staff are not as proficient, maintenance manuals have to be as prescriptive as possible in mitigation.

There are several problems here. The first is that no manual can be both prescriptive enough and flexible enough to allow an unskilled person to complete a task in any situation without risk. The another problem is that the ADF does not have the resources required to produce such manuals even if the task was possible. The development of such manuals would require a large number of the ADF's most skilled and experienced technicians to try to distil all their professional knowledge onto paper. As described throughout this paper, the ADF needs all the skill and experience it can get simply to maintain its current capability. It cannot afford the resources required for such a pointless task. Yet the Systems Program Offices (SPOs), whose task it is to maintain ADF publications, are struggling without the resources they need to keep their manuals up to date at their current level of detail, and under pressure from ADF aviation regulators to minimise the risk associated with less prescriptive manuals. The technicians involved are frustrated by this dilemma, not least because it would be unnecessary if the skill and experience, that is the professionalism, of technicians was increased at the junior levels and respected more at the senior levels.

What must be understood is what drives technically minded people. The greatest aspiration of better tradesmen and technicians—the ones Defence wants to retain—is, usually, to know more about a particular system or process than their peers. Simply being acknowledged as one of the best in a particular area, or as having been the person who solved a particularly complex or long-term problem, is better reward than any financial incentive that Defence could offer. Yet the training and employment of technicians in the ADF today is focused very much on multi-skilling rather than specialising.

LEADERSHIP

There is the widespread practice of seeing issues, which may cover a broad range of personnel management matters, solely as deficiencies with remuneration, rather than, as they more generally are, leadership or management issues. The propensity to focus exclusively or largely on remuneration means that real underlying issues are not properly addressed. Whilst it is frequently argued that additional remuneration will

⁶⁰ Xinos, Interviews and seminars, 2001.

*help address the problem in the short term, thus allowing other management initiatives to be implemented over time, ... this is rarely the case.*⁶¹

Corporate Mentality

On the corporate front, many staff believe that boards of directors should reassess their management teams. Decisions to put finance experts at the helms of some aerospace companies may have improved stock prices, but what have they done to the company's long-term viability?⁶² Most engineers and logisticians would argue that it is far easier to save money than make money. A balanced team of technically trained, visionary leaders and financially astute businessmen is the best combination.

*Perhaps most important, every executive should discard faulty business school theories that gave rise to commodity worker policies. The talents, dedication, experience and skills of individuals at all levels are critical to a successful aerospace industry. Traditional cycles of hiring and firing won't work in the long run. A paradigm that values people and their skills must be restored.*⁶³

A corporate mentality has existed in Defence for at least the past decade and has contributed significantly to reduced job satisfaction and increased retention problems, but the ADF is not alone. As an example, schools for US Navy flight instructors are known informally as 'American Airlines U[niversity]' because of the speed with which fliers quit the service for jobs with commercial airlines after receiving their million-dollar training. The US Navy conducted a survey in 1998 to find out how many sailors were planning to leave the service, and why. The results make it clear that personal and economic reasons for wanting to leave the service were dwarfed by dissatisfaction with the change in military culture and lack of confidence in military leadership.⁶⁴ This situation is echoed clearly in the ADF.

The Government as an Employer

The government, regardless of its persuasion, is no longer regarded as a trustworthy employer and politicians generally are considered to be uninterested in defence. Political leaders are not well regarded by broad sections of the Defence Force. The Committee on Foreign Affairs, Defence and Trade recommended regular briefings for Federal and State politicians on Australian defence policy, capabilities and personnel.

⁶¹ Nunn, Kennedy and Cupper, *Review of Australian Defence Force Remuneration*, p. 27.

⁶² *Aviation Week and Space Technology*, 'Misguided Direction Threatens Aerospace Crown Jewel', McGraw-Hill, 5 July 1999, p. 66.

⁶³ *Ibid.*

⁶⁴ John Derbyshire, 'Is This All We Can Be?', *National Review*, 16 April 2001, http://search.britannica.com/magazine/article?content_id=219389&query=military, accessed 31 July 2001.

They also recommended that a comprehensive, long-term national public relations campaign be initiated, supporting the ADF.⁶⁵

Defence Out of Balance

Although senior ADF officers frequently pronounce that 'people are our most valuable asset', many members of the armed forces simply do not believe this is the case. Many members question whether their commitment and loyalty to the ADF is adequately reciprocated in terms of fair financial reward or good leadership and management on issues affecting personnel. At all levels within the ADF it is maintained that capital investment and activities receive greater priority and more attention than issues relating to personnel.⁶⁶

ADF members recognise and understand that expenditure on defence equipment leaves less uncommitted funds for personnel expenditure. They clearly accept the fact that the ADF must re-equip itself and that this costs money. They also accept that Australia's strategic situation requires increased Defence presence in the North and West of the country. 'Many willingly accept the dislocation caused by postings *provided* the sacrifices are reasonable and respite is possible.'⁶⁷ Unfortunately the leanness of most ADF Units and the fact that many are undermanned, limits the extent to which respite is possible and increases the workload of individuals, making the sacrifices even greater. A loss of morale results and separations follow, thereby further increasing the burden on the individuals that remain. 'Rightly or wrongly there is a strong perception that things are out of balance and that people are the losers.'⁶⁸

RECENT IMPROVEMENT

In 1995, the ADF Personnel Policy Strategy Review Team recognised that organisations that have restructured in recent years had come to recognise that people are the competitive edge. These organisations therefore made commitments to their key people in the hope that they would stay with them. The team noted that loyalty between organisations and individuals was increasingly becoming a reciprocal arrangement.⁶⁹ This highlights a trend back towards institutional relationships in large organisations in recent years.

In fact, after what has probably been a period of the most rapid and comprehensive restructuring in ADF history, current personnel policy is starting to reflect this trend. Personnel policy makers are now offering conditions of service aimed at supporting Defence families more and providing more flexible employment conditions for

⁶⁵ Commonwealth Parliament, *Personnel Wastage*, p. 127, para 4.56.

⁶⁶ Australian Defence Force, *Serving Australia: The Australian Defence Force in the Twenty First Century*, Personnel Policy Strategy Review Team, Defence Centre Canberra, 1995, p. 57, para 3.14.

⁶⁷ Australian Defence Force, *Serving Australia*, p. 58, para 3.17, original italics.

⁶⁸ Australian Defence Force, *Serving Australia*, p. 58, para 3.18.

⁶⁹ Australian Defence Force, *Serving Australia*, p. 57.

individuals. The *Nunn Review* of ADF remuneration recommends a more flexible remuneration system that both rewards people according to time served and rank as in the past, and factors in additional elements related to job difficulty and workload, skills required and a component linked to market value. These policies, combined with positive messages regarding the value of people in Defence and guaranteeing job security, are reinvigorating the institutional image of Defence and should help to lower the separation rate as well as acting as an incentive for more potential recruits to join.

CONCLUSION

The retention issues facing Defence are not problems that can be resolved quickly or easily. The environment that the Defence Force is part of has developed slowly over a long period of time and has been influenced by many Governmental, societal and internal influences. But one thing is sure: the Government and the ADF have recognised the problem and are expending significant resources to investigate and resolve it. Some of the actions taken already are likely to have a positive effect in the near future. Other actions are likely to come out of the myriad of studies being conducted at the moment. One program that will help immensely in future studies will be the implementation of PMKeyS—a Defence-wide personnel database that will capture essential data for use in the determination of trends, hopefully before they become critical problems.

A return to a more institutional environment within the ADF can only help to address its current and future retention problems. Defence needs to make people feel that they are important and that Defence is prepared to look after their interests as well as employ them. This is a question of leadership more than processes, for changing culture is a difficult and sensitive operation, even if the change is somewhat of a return to what was. Hopefully Defence and Government have learned from the experiences of the past and will take the required steps slowly, at a pace that allows all members of the ADF to feel comfortable with and part of where it is going in the future.

Conclusion and Recommendations

INTRODUCTION

The Australian Defence Force (ADF) is losing its technical trades capability. This is a problem because it is capability, together with national will, that creates Australia's defence posture—a deterrent vital to Australia's national defence policy. No enterprise can remain effective for very long without enough trained and experienced people. Not only do people ensure that the ADF can support the range of capabilities it currently possesses, they are vital in ensuring that the ADF workforce remains structurally sound—it is people who lead and manage people. If we continue then to allow the exodus of personnel, who depart with much of the leadership, skills and experience the ADF needs to maintain, how can it hope to sustain its capabilities? The time has come for a new philosophy for personnel management.

This paper provides some answers to the ADF's problem of skills and experience retention. In examining the relationship between people and capability, discussing major defence reforms of the past decade and examining the multitude of issues surrounding recruitment and retention, this paper offers some explanation of why defence recruiting and retention rates are poor and why there is an ever widening skill and experience gap in the aviation technical workforce. A range of conclusions are summarised here, followed by a series of recommendations on how the key issues may be resolved.

CONCLUSIONS

Capability

Chapter 1 defined the term 'capability' in the context of national defence, and explained how each element that comprises capability is a product of the combination of people and equipment. This was represented by the formula:

$\text{FORCE STRUCTURE} + \text{READINESS} + \text{SUSTAINABILITY} = \text{PEOPLE} + \text{EQUIPMENT}$
--

The chapter established the fact that, in occupations where long training times were required to maximise capability—such as aviation technicians—there would be no way to rapidly increase their numbers in the event of a short lead-time contingency. The ADF will therefore have to ensure it maintains a ready and capable core of these personnel that is sustainable and adequately manned to support capability at short notice and for the duration of short contingencies. The concepts of operational

flexibility and latency were examined, followed by an explanation of the need for the ADF to possess an intrinsic maintenance capability rather than a contracted one.

The ability of the ADF to maintain its own aviation equipment utilising a core of skilled, experienced technical personnel, who are flexible and possess enough latent capability to ensure sustainability and success in ADF operations, is critical to Australia's national defence posture.

Outsourcing Capability

Chapter 2 looked briefly at the background of commercial support of ADF aviation maintenance over that past half century. It examined some of the major reviews that led to increased momentum in the drive to outsource 'non-core' functions in the late 1980s, but more importantly, it questioned the extent of any cost savings against a background of reduced quality, reduced levels of service, lost latency and ultimately lost capability. The chapter looked at the differences in culture and nature between civilian, commercial and military workforces and determined that, because of these differences, risk is not a factor that Defence can devolve to contractors. Finally the case was summed up with a case study involving routine maintenance of F/A-18 Hornet fighter aircraft.

The case of F/A-18 R3 servicings was provided as just one example of why the wholesale outsourcing of aircraft deeper maintenance may not be a wise path to follow. Not only is the risk of adversely affecting capability too high, there is little likelihood of significant cost savings. Also, the quality of service is likely to drop and the management overheads are likely to increase, with the cost of higher paid managers and consultants likely to offset any manpower savings. This reasoning alone suggests that the ADF should perhaps revisit the philosophies that predicated the results of the Commercial Support and Defence Reform Programs. The main argument is, if you do not understand the business **very** well, do not analyse critically what may go wrong and what the benefits really are and, cannot predict the outcome entirely, how can you assess the risks and consequences, or compare the outcome to the original system?

Finally, the adoption of outsourcing policies has not been driven by concerns about the optimal allocation of risk as should be the case, but by a desire to cut the costs of service provision, frequently at the expense of employees. Much of the measured gain from contracting has risen from reductions in wages and increases in work intensity. The net social gain from contracting out in such cases is far smaller than the measured gain, and in many cases it is negative. If the adage 'people are capability' is to be believed, the net effect on military capability is also negative.

Technical Trades Restructure and Organisational Health

The Technical Trades Restructure (TTR) was implemented on the basis of a perception that continuing increases in aircraft complexity were exposing shortcomings in the training system's ability to provide personnel with adequate fault diagnosis skills. The fundamental alteration of the technical trades included changes to trades boundaries, weapon system employment, trade training and career progression. However an assessment nearly ten years after the implementation of TTR indicates that fault diagnosis skills may have actually dropped, and the ADF is now suffering from a serious lack of experience across its technical ranks generally.

The demise of the ADF apprenticeship schemes has more than halved the length and depth of technical training available to personnel on enlistment to the ADF. Compounding this is the fact that trainees are now trained in a multitude of disciplines compared to the distinct specialisations that existed prior to the TTR. Therefore, trainees now have less time to learn two or more (pre-TTR) trades than their predecessors had to learn one. This preference for generic training as opposed to specialist training has affected tradesmen *beyond their initial trade training* also. Any divergence from a mainstream generic trade can affect an individual's promotion prospects in competition with their peers, because they are assessed as an ATECH or AVTECH not, for example, a weapons, hydraulics or environmental control system specialist.

The number of aviation technicians in the ADF has reduced through a number of reviews and the number leaving the ADF has increased without a corresponding increase in recruitment. The rate at which the ADF can develop its technician's skills and experience is low because of a combination of training changes imposed by the TTR and a lack of experienced supervisors and instructors at operational units. The lack of skill and experience at operational units also contributes to continually high rates of effort, increased maintenance errors and logistics backlogs, all of which contribute to poor morale, lack of job satisfaction and separation from the ADF.

The issues surrounding workload are in themselves complicated and intertwined. A review of ADF workloads, not only across the armed forces but also within individual specialisations, is required to begin to address this problem. Remunerative efforts to date have been insufficient and are likely to be unsuccessful anyway. *The root of the problem must be understood and a comprehensive plan developed to address the reasons for the workload that prevails.*

The Weapons Specialist stream was discussed as a special case, highlighting the need for ADF planners to *reconsider both the need for specialist career streams and the way in which those streams are developed*. The ADF needs general aircraft trades, and these are sufficient for most technical functions in ADF aircraft operations. However, as technology increases the complexity of the systems the ADF operates, more highly qualified technicians are required to perform specialist roles. As they advance in the ADF, these specialists will, in turn, become the people the ADF relies on to provide

specialist advice to engineers, equipment managers, acquisition teams and service providers alike, ensuring the ADF maintains a robust corporate governance capability.

Recruitment

The need for the ADF to adopt very occupationally oriented practices like flexible employment and career management strategies, that offer personnel more control over their own careers is recognised. The *Nunn Review* recommends a range of financial and policy initiatives aimed at improving the conditions of service of military personnel and recognising the value of individuals and specific groups within the organisation. Remarkably, whilst criticising the very institutional bureaucracy that has traditionally pervaded the ADF, most of the 'occupational' recommendations seem aimed at the ADF looking after its people and better recognising their value. The one thing that the ADF can realistically offer its technicians over its civilian 'competitors' is long-term, secure employment—a 'job for life'.

Defence and the individual Services need to understand their people. They need to examine the needs, desires and attitudes of the technical workforce and target their recruitment and retention strategies accordingly. However, this cannot be done to the exclusion of individual Service identity. The Armed Forces must regain their sense of identity and celebrate their uniqueness in Australian society rather than believing that their differences unnecessarily alienate them. The general public recognises that the Services are different, although most do not understand why and many would not want to know.

People do not mind paying for defence from the Commonwealth budget, as long as they feel they are getting value for money. In this respect, people do not need to be informed of ADF activities and expenditure, they need to be better educated about the ADF's capabilities and how the maintenance of those capabilities contributes to Australia's security. Emphasising the importance of high quality technical personnel in that picture is an attraction in its own right. The challenge of being 'the best of the best' is one that most technically talented people find hard to resist.

However, once people are recruited, the Services must ensure they are able to follow through with the image portrayed. 'The best' have to be trained to be the best, recognised internally and externally as the best and, most importantly, feel like the best. As little as ten years ago ADF aviation technicians were considered exactly that—the best. A lack of change management strategy, a focus on budget over people, and the poor implementation of major reviews like the Technical Trades Restructure, the Commercial Support Program and the Defence Reform Program, have made ADF personnel generally and technical personnel in particular feel very under valued by the organisation.

Retention

The retention issues facing Defence are not problems that can be resolved quickly or easily. The environment that the Defence Force is part of has developed slowly over a long period of time and has been influenced by many Governmental, societal and internal influences. The Government and the ADF have recognised the problem and are expending an enormous amount of resources to investigate and resolve it. Some of the actions taken already are likely to have a positive effect in the near future. Other actions are likely to come out of the myriad of studies being conducted at the moment.

A return to a more institutional environment within the ADF can only help to address its current and future retention problems. Defence needs to make people feel that they are important and that Defence is prepared to look after their interests as well as employ them. This is a question of leadership more than processes, for changing culture is a difficult and sensitive operation. If Defence and Government have learned from the experiences of the past, they will take the required steps slowly, at a pace that allows all members of the ADF to feel comfortable with and part of where it is going in the future.

RECOMMENDATIONS

The following recommendations are not only based on the arguments presented in this paper, but on a far more comprehensive analysis than could be documented here. The ten months of research that went into the development of this paper are complemented by well over fifteen years of experience as a technical tradesman, senior non-commissioned officer, logistics engineering officer and, now, strategic thinker. Whilst some of the recommendations seem too broad to be implemented, or simply too politically sensitive, they require serious consideration. The capability of the Australian Defence Force is at stake and commanders and policy makers can not afford to feel they have been blamed for what appear to have been errors in the past. Past decisions were based on the information available, and the political and societal environments at the time. No individual or committee is to blame for the situation the ADF now faces. However, knowing what we do now and learning from our experiences, a failure to address the situation because of a fear of offending someone, upsetting 'the system', reversing past decisions or, simply, the hard work required, would be tantamount to negligence. The careful analysis and discussion of this paper and its recommendations are therefore strongly urged.

Outsourcing

ADF policy makers and contracting staff should consider the effects of outsourcing on defence capability in a more holistic manner. The 'savings' expected from outsourcing a military function should also factor in any forfeited capability and risk of lost capability, including the effect on mustering health and morale, rather than the purely financial cost analyses conducted to date.

Civilianisation and Downsizing

Defence policy makers should reconsider the 'critical mass' of the uniformed force to re-establish some force latency, improve operational flexibility, provide more scope for relief manning and generally reduce workloads. Too great a reduction in personnel numbers, centralisation of functions and the substitution of military positions with civilian offsets have increased the administrative burden on personnel, therefore reducing effectiveness and efficiency. They have also decreased job satisfaction to the point where people are leaving in frustration and/or just to get a break.

Training

The ADF needs to reintroduce some form of high level technical training to ensure it has a core of personnel able to diagnose complex faults quickly and efficiently in order to guarantee capability and rates of effort can be maintained in a contingency. Several international armed forces and many Australian and international industries have returned to apprenticeship-style schemes to develop such maintenance capability. The added benefit of apprenticeship schemes is that, because they generally involve very young people, their formative years can be used more effectively to indoctrinate them in military life. This engenders a commitment to the organisation that they 'grow up' in, as is evidenced by the number of ex-apprentices still serving in the armed forces after 20 to 30 years—a far greater number than their adult trainee counterparts.

The ADF should also consider widening its age limits for entry into the technical trades and develop bridging courses, either internally or through civilian technical schools, to enable civilian technicians to improve their skills and training quickly to reach military standards.

The skills development of tradesmen should be guided by a mentor and more strictly controlled at unit level. The current RAAF system, where courses are offered to all and sundry via email or web sites, should be abolished in favour of channelling course availability through commanders who should decide what courses a tradesman needs for operational reasons or self-development. By the same token, commanders and unit training coordinators should keep training command abreast of their training requirements so courses can be scheduled more efficiently and effectively.

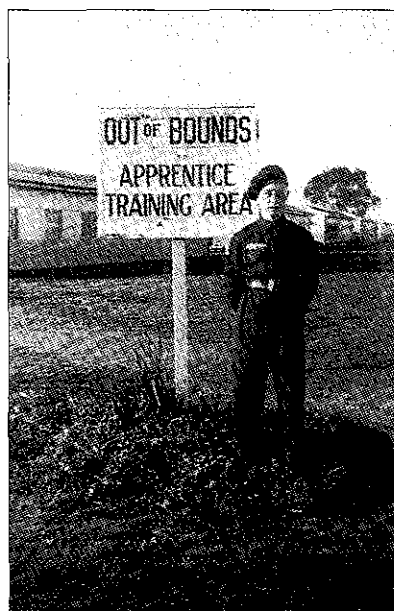


Figure 6.1 Back to the future?¹

¹ Photograph courtesy of J. Fordyce.

Specialisation

In an endeavour to improve job satisfaction and give personnel options apart from the promotion bottleneck that exists, the ADF should consider the development of more specialist career streams. These would provide technicians with the flexibility to choose whether to aim for promotion as a generalist and eventually become a technical manager, or specialise in a particular field. The choice to specialise would have to be based on the knowledge that, while the number of positions or postings available to them would be limited, they would be adequately remunerated for their skills and experience. There would also have to be an option to return to the generalist stream or specialise in another discipline, even if it meant a drop in pay or additional training, so that the system was always flexible enough to offer a range of options to the individual. A system of mentors would also be beneficial to guide junior personnel whilst considering the requirements of the Service.

The Weapons Specialist stream should be separated from the aircraft and avionics mustering and developed into a mustering in its own right. The branching of the Weapons Specialist stream from the mainstream mustering after tradesmen reach Aircraft or Avionics Technician level is a possible alternative to the extant system. This would be in line with the current system for the Non-destructive Testing Specialist stream. However this is considered to be very much a 'half-way' measure. What must be remembered is that the Weapons Specialist stream has few synergies with the other aviation trades and as such, separation offers significant opportunity to develop more specialised, efficient and cost-effective training. Many of the Weapons Specialist specific courses would also become generic to the mustering and could be delivered up front, thereby increasing the depth of knowledge early in a Weapons Specialist's career and laying the foundation for more rapid experience growth, job satisfaction and longer careers in Defence.

Recruitment

All the preceding recommendations are very likely to improve both recruitment and retention rates. Offering people greater flexibility, job security, better job satisfaction and better professional development are all excellent recruitment inducements. However the ADF must be more informative and pro-active in its marketing of military employment. Recruiters should not simply advertise and wait for people to come to them. They should be out visiting schools, colleges, scout and guide troops, cadet forces and similar institutions to inspire interest early.

Recruiting centres must change their bureaucratic behaviour, increase the rate at which they register and process interested applicants and be highly energetic in maintaining the interest of prospective recruits.

Retention

Once again, all the preceding recommendations are very likely to improve retention rates. Greater employment flexibility, job security, increased job satisfaction and better professional development are all excellent retention inducements also. If people remain in the ADF for longer, average experience levels increase, recruitment and training requirements can be reduced and subsequently workloads will reduce.

However in the interim, more 'under training' positions should be established at units to free up constrained establishment positions for occupation by more experienced, trained technicians. More experienced staff should be used to form training cells within units to oversee on-the-job training (OJT) whilst the majority of trained technicians and supervisors are freed to concentrate on their primary tasks.

Of note are the Navy and Army aviation training squadrons that not only train aircrew, but are also used to provide OJT for maintenance staff. Navy and Army technicians are therefore fully trained and have some experience before they get to an operational unit and are useable almost immediately. Whilst such a scheme may not seem viable in Force Element Groups (FEGs) with only one or two squadrons, it could work in the F/A-18 Hornet world, and could be adapted to suit a part of one squadron within the other FEGs, freeing the other squadron(s) to concentrate more on operational training.

Recognition

The granting of awards, the presentation of mementos at the end of a posting and words of praise from a commander are all small things that can help personnel feel that their efforts, qualifications and skills are recognised and appreciated. This is amplified remarkably when the families of those personnel are similarly recognised for the support they provide.

Although the Australian psyche may not warm to such a concept initially, each branch of the ADF may like to consider a rewards and recognition scheme similar to the 'sailor of the month' system used by the US Navy and described in Chapter 5. Such public recognition not only of excellent job performance but military qualities, could be very effective in improving morale and job satisfaction, and may result in improved performance.

The idea of visually discriminating between various specialisations by way of distinguishing uniform accoutrements, ranks and the like, should also be considered to engender some friendly rivalry, increase an individual's sense of identity and belonging, and increase *esprit de corps*.

Career Management

The lack of effective career management in the RAAF would be best resolved by making airmen more aware of their career options. Career guidance documents more specific to their situation (for example, progression within their Force Element Group) could be made available. Posting plots indicating who is in what position, how long they expect to be in that position and what qualifications are required to fill that position could also be provided.

A system of mentors should be introduced whereby senior non-commissioned officers would take a few junior airmen 'under their wing' and guide them as to their posting and promotion prospects, the courses they need to do and, more generally, how to live a military life. Of course communication between mentors, the Directorate of Personnel Airmen—Air Force and Headquarters Training Command—Air Force would have to be very effective to ensure mentors could guide their charges accurately. Such a system is currently being implemented for ADF Aerospace Engineers and the expectation of its effectiveness is such that retention rates have already improved and other RAAF specialisations are considering implementing similar initiatives.

CONCLUSION

To ensure that the ADF possesses a technical skill base that effectively supports its air power capability requirements, the range of skills and depth of experience required must be clearly and unambiguously linked to capability. However, to ensure that the ADF maintains the required skill base, the ADF must develop a personnel management philosophy to support its own needs—not simply adopt the philosophies of other organisations—and provide a robust framework to support its philosophy in order to attract, nurture and retain its people. Linking specific skill requirements to capabilities may ensure that all of the ADF's capabilities are adequately supported. However, this does not guarantee the flexibility or long-term viability of that support. Strategically, therefore, it is more beneficial in the longer term to create a capable, sustainable and ultimately flexible technical workforce that is essentially independent of any specific capability, can support all current capabilities and can adapt quickly to support any new capabilities as quickly as they can be acquired.

The key to restoring ADF technical skills and experience is to change the philosophy by which the ADF determines and manages its force structure. In order to ensure its technical trades are sustainable, and that a level of technical mastery is maintained, the ADF must better understand its people and what they do. By fully appreciating what it takes to be, and means to be, a skilled technician, and by understanding what they are truly capable of, the ADF can begin to develop not only the technical workforce it needs to support operations, but one that is suitable and viable for the long term. This philosophy applies equally to all musterings, trades, specialisations, Services and Defence Forces.

Trust and respect are force multipliers

ANNEX A

Australian Defence Force Non-Commissioned Ranks

Navy	Army	Air Force
Warrant Officer of the Navy (WO-N)	Regimental Sergeant Major of the Army (RSM-A)	Warrant Officer of the Air Force (WOFF-AF)
Warrant Officer (WO)	Warrant Officer Class 1 (WO1)	Warrant Officer (WOFF)
Chief Petty Officer (CPO)	Warrant Officer Class 2 (WO2)	Flight Sergeant (FSGT)
	Staff Sergeant (SSGT)	
Petty Officer (PO)	Sergeant (SGT)	Sergeant (SGT)
Leading Seaman (LS)	Corporal (CPL)	Corporal (CPL)
	Lance Corporal (LCPL)	
Able Seaman (AB)		Leading Aircraftsman/Aircraftswoman (LAC/LACW)
Seaman (SMN)	Private (PTE)	Aircraftsman/Aircraftswoman (AC/ACW)

Note: Ranks increase up the page.

Nunn Review – Summary of Recommendations¹

The Panel's recommendations recognise that remuneration arrangements are not an end in themselves. Our recommendations are fundamental to achieving the primary purpose of the ADF—military capability. Accordingly, our recommendations are predicated on:

- introduction of a new accountability and authority framework for people;
- remuneration, which is integrated with the new Defence budgetary arrangements;
- a substantial restructuring of salary and allowances;
- administrative simplicity, flexibility and leadership discretion;
- placing greater personal responsibility on ADF members in areas such as career management and housing; and
- being underpinned by a framework based on principles, rather than a system driven by prescriptive rules.

CHAPTER 3 HISTORICAL PERSPECTIVE

We recommend that:

3.1 The Panel's proposals for changes to ADF remuneration arrangements are seen as an integrated package and implemented on that basis.

CHAPTER 4 ORGANISATIONAL AND ACCOUNTABILITY ISSUES

We recommend that:

4.1 The CDF and the Service Chiefs be made fully accountable for strategic people capability issues in the ADF and the three Services respectively (following implementation of Recommendation 13.1).

4.2 The DPE people management functions be restructured into a small central policy unit to provide strategic people capability policy advice to the CDF and Secretary.

¹ Barry Nunn, Peter Kennedy and Les Cupper, *Review of Australian Defence Force Remuneration*, Commonwealth of Australia, Canberra, 2001, pp. 145–51.

4.3 The necessary organisational changes be put in place that would allow the Service Chiefs to take on their delegated people leadership roles, including the creation of small sections to provide strategic people capability advice within the three Services.

4.4 The three Services and the DPE ensure they have or acquire the required calibre of strategic people capability advice.

CHAPTER 5 PRINCIPLES UNDERPINNING THE DETERMINATION OF ADF REMUNERATION

We recommend that:

5.1 There is clear and sustained recognition of the following three principles underpinning ADF remuneration policies:

Principle 1: Engaging in unique activities. Combat operations are unique to the ADF and should be recognised with specific remuneration policies.

Principle 2: Nature of military service. Remuneration policies should reflect the liability ADF members have to serve, and the special characteristics of military service.

Principle 3: Adherence to community standards. ADF remuneration policies should be consistent, to the extent practical, with those operating in the wider civilian community.

5.2 The principles and broad strategies outlined in Chapter 5 should be adopted for the purpose of guiding the determination of ADF remuneration policies.

5.3 The above principles and broad strategies be applied in a consistent and disciplined manner, subject only to amendment when it is clear the military and industrial environment in which they are required to operate justifies change.

CHAPTER 6 MILITARY SALARY AND SALARY RELATED ALLOWANCES

We recommend that:

6.1 A new flexible salary structure for officers be adopted which encompasses rolling in the continuous qualifications and skills element of the major environmental allowances to create continuous salary bands, thereby providing the opportunity for the Service Chiefs to move away from the officers common scale, should they elect to do so.

6.2 Specialist officers be included in the new flexible salary structure, but that this not constrain the Services' capacity to ensure officers receiving specialist salary rates be restricted to performing specialist work.

6.3 The other ranks salary structure be consolidated by rolling in the existing qualification and skills elements of the salary related allowances and progressively removing divisions between the existing pay groups.

6.4 Determining salary related allowances be the responsibility of the Service Chiefs with a view to:

- reducing each allowance to its essential elements with each element being treated separately and differently, subject to the principles and options articulated in Chapter 6 and the requirements of the Service Chiefs;
- applying targeted and flexible attraction and retention payments, rather than paying allowances which cannot be reduced, ceased or varied as circumstances change;
- limiting disability allowances to circumstances where it is essential to compensate for adverse and unsatisfactory physical working conditions which cannot be ameliorated; and
- limiting the recognition of qualifications and skills that are not ongoing to on-occurrence payments.

6.5 Service Allowance be rolled into base salary at its current level.

6.6 Uniform Maintenance Allowance be rolled into base salary, but be discounted by the actuarial cost of accrual based superannuation.

6.7 A comprehensive communication strategy be developed and implemented to improve ADF members' understanding of their remuneration package, the rationale underpinning the elements of the package as well as its comparative value. This strategy should include providing members with fortnightly pay advices and promoting the Comparative Employment Value Adjustable Model throughout the ADF.

6.8 The proposed flexible salary structure be used to address circumstances where existing performance management systems do not provide effective rewards.

6.9 Performance based pay concepts be considered for future implementation, including the application to star rank officers of performance pay arrangements applying to civilian senior executives within Defence.

6.10 Consideration be given to adopting the total remuneration package approach, involving cashing out non-cash benefits, wherever practicable and appropriate.

6.11 Consideration be given to adopting individual remuneration arrangements for senior personnel.

CHAPTER 7 OTHER FINANCIAL CONDITIONS OF SERVICE

We recommend that:

7.1 Recreation Leave Free Travel be discontinued when Accommodation Assistance Allowance is provided.

7.2 All other financial conditions of service, save for the conditions relating to overseas deployments and postings, be systematically reappraised by the Service Chiefs against the following framework:

- by determining whether the provision remains justified or relevant in view of its purpose;
- by clearly focusing on the outcome the provision seeks to achieve, in particular, whether it contributes to military capability; and
- having regard to the strategies outlined and the comments made in relation to the specific examples provided in Chapter 7.

CHAPTER 8 HOUSING ASSISTANCE

We recommend that:

8.1 An Accommodation Assistance Allowance, based on regional housing costs and family structures, be introduced to replace the existing Group Rent Scheme and LIA charges.

8.2 The meal subsidy in messes be reduced to help offset the cost of the Accommodation Assistance Allowance.

8.3 The Home Purchase Assistance Scheme be abolished to help offset the cost of the Accommodation Assistance Allowance.

8.4 Market prices be charged to occupants of DHA houses and Defence provided LIA, with ADF members using the new Accommodation Assistance Allowance and their own resources to secure their accommodation.

8.5 Defence note the administrative issues discussed at Appendix 9 when implementing the Accommodation Assistance Allowance.

8.6 Defence negotiate a contractual arrangement with DHA to ensure that a 'landlord of last resort' is available in remote locations and in limited housing markets.

8.7 Defence negotiate with DHA to protect the Commonwealth's capital investment in on base and remote area houses.

CHAPTER 9 LEAVE

We recommend that:

9.1 Individual Service Chiefs have responsibility for managing leave, within a CDF determined framework.

9.2 The CDF leave framework covers policy for legislated leave, basic recreation leave, war service leave, leave without pay and leave for compassionate and carers purposes, and includes:

- restricting the level of accruable leave for basic recreation leave to 12 weeks;
- allowing basic recreation leave to accrue fortnightly;
- changing war service leave from accruable leave to non-accruable leave;
- the partial or full cash out of long service leave after 10 years; and
- allowing maternity leave to be taken at half pay.

9.3 Additional recreation leave currently granted for flying duties, seagoing service, field service, prolonged duty, service in a relevant remote locality, trainee duty, and all other provisions for leave, be discontinued and replaced by discretionary, non-accruable commander's and supervisor's leave.

9.4 All leave be reportable.

CHAPTER 10 SUPERANNUATION

We recommend that:

10.1 There be more effective communication with ADF members about the existing military superannuation schemes and their benefits.

10.2 The Military Superannuation and Benefits Scheme Act 1991 be amended to cease access to the MSBS Retention Benefit for future ADF members while 'grandfathering' the entitlement for currently serving members.

10.3 Implementation of the improvements to ancillary benefits being undertaken by the MSBS Board and Department of Defence.

10.4 Existing military pensions be indexed twice yearly consistent with changes in public sector superannuation schemes.

CHAPTER 11 RESERVES

We recommend that:

11.1 Reserve members continue to have two alternative modes of active employment with appropriate remuneration, namely:

- part-time members on daily Reserve pay rates, or consolidated rates where appropriate; and
- members on full time duty at Permanent rates.

11.2 The tax-free status of Reserve pay be maintained.

11.3 Having regard to the need to recognise the increased callout liability, and in view of the need to reflect the change we propose to military salary in Chapter 6, we propose that Service Allowance and Uniform Maintenance Allowance be included in the military salary of Reserve members.

11.4 Service Chiefs should consider Reserve pay rates be set at 100 per cent of that for equivalent Permanent employment categories unless different competencies are required. Under these circumstances Service Chiefs should authorise placement of Reserve members at different points in pay bands.

11.5 An annual payment be provided to those Reserve members on high readiness for callout, to compensate for the increased personal preparation required. The quantum should be at the discretion of the Service Chiefs and should be paid at the conclusion of qualifying periods of effective service.

11.6 Superannuation should not be extended to Reserve members while Reserve pay remains tax free.

11.7 Service Chiefs apply selective retention bonus payments at critical points in the career of Reserve members. These bonus payments should be deferred and paid on the satisfactory completion of an appropriate period of effective military service.

11.8 Service Chiefs consider deferred bonus payments for Permanent members transferring to active components of the Reserve.

11.9 The CDF resolve the compensation issues for Civilian Specialists.

11.10 Head Reserve Policy review the effectiveness of Employer Support Payments once experience is gained.

11.11 Service Chiefs consider a deferred bonus payment for members of the inactive Reserve components.

CHAPTER 12 ATTRACTION AND RETENTION

We recommend that:

12.1 Strategic people capability planning be fully embedded in the ADF planning process.

12.2 ADF leadership act to identify and reduce excessive workloads.

12.3 Government be advised of any reduced capability caused by excessive workloads.

12.4 Innovative work practices be actively pursued by the CDF and Service Chiefs.

12.5 Financial incentives be specifically targeted and monitored for effectiveness and not be built in to base salary and allowance rates.

12.6 Particular attention be given to the management of unrealistic career expectations.

CHAPTER 13 DEFENCE FORCE REMUNERATION TRIBUNAL

We recommend that:

13.1 The responsibilities currently held by the Minister for Employment, Workplace Relations and Small Business under sections 58F to 58Q of the *Defence Act* 1903 be transferred to the Minister for Defence.

13.2 In recognition of the distinctive features of military service, the Tribunal be maintained as a separate independent arbitral tribunal responsible for determining specified elements of ADF remuneration.

13.3 Section 58H of the *Defence Act* 1903 be amended to change the role of the Tribunal to determining, on an annual basis, the appropriate minimum and maximum salary levels for ADF members up to and including colonel (and equivalent).

13.4 The Tribunal S proceedings be carried out in an informal and non-adversarial manner.

13.5 The office of the Defence Force Advocate be abolished.

13.6 The remuneration of star rank officers be determined directly by the C13F, advised by the Service Chiefs.

CHAPTER 14 IMPLEMENTATION

We recommend that:

14.1 The integrated package of reform proposals and the implementation plan outlined in Chapter 14 be adopted.

Wheatley Paper – Evaluation of Rank Systems¹

This annex evaluates both the current and alternative rank systems against [Wheatley's] essential and desirable criteria of an excellent system. [Table C-1] evaluates the systems against the essential criteria and [Table C-2] evaluates them against the desirable criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Robust command and control system	<i>Current System</i>	<ul style="list-style-type: none"> ▪ Has a strong hierarchical basis ▪ Number of separate ranks ▪ Personnel can easily recognise superiors and subordinates 	<ul style="list-style-type: none"> ▪ Ranks don't necessarily correspond to organisation ▪ System does not adjust for different organisational requirements ▪ Complicated by having two separate rank groups (officers and airmen) ▪ Doesn't correlate well with three levels of command — AIRCDREs sit between the operational and tactical levels
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ Ranks correspond to organisation ▪ System can adjust for different organisational requirements ▪ One contiguous rank group ▪ Personnel can recognise superiors and subordinates ▪ Loss of personnel will not irrevocably affect command chain ▪ Correlates well with levels of command 	<ul style="list-style-type: none"> ▪ Potential confusion of category superiors and rank superiors

Table C-1 Rank System Evaluation Against Essential Criteria.

¹ Bradley J. Wheatley, *A More Cost-Effective Rank System for the RAAF*, Staff Course Reynolds Paper, SC/50/1234, 8 October 1995, Annex E.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Unity of command	<i>Current System</i>	<ul style="list-style-type: none"> ▪ Personnel are usually aware of command relationships ▪ Most personnel have one superior 	<ul style="list-style-type: none"> ▪ Some personnel have two or more direct supervisors ▪ Sometimes difficult for young inexperienced officers to establish authority over senior airmen ▪ Some special rules are required to ensure unity of command when junior, but experienced, personnel are in command of seniors
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ Personnel are usually aware of command relationships ▪ Most personnel have one superior ▪ Experienced personnel are senior to inexperienced personnel 	<ul style="list-style-type: none"> ▪ Nil

Table C-1 (continued) Rank System Evaluation Against Essential Criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Professional mastery	<i>Current System</i>	<ul style="list-style-type: none"> ▪ Encourages development across all skill groups 	<ul style="list-style-type: none"> ▪ Discourages mastery of one skill group ▪ Mix of skill groups is job dependent ▪ Discourages personnel from becoming experts in their chosen fields ▪ Discourages personnel from developing skills
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ Encourages mastery in one skill group at a time ▪ Encourages some skill development across all three skill groups (not simultaneously) ▪ Mix of skill groups is not job dependent ▪ Encourages personnel to become experts in their chosen fields ▪ Encourages personnel to develop skills 	<ul style="list-style-type: none"> ▪ Discourages simultaneous development across all three skill groups

Table C-1 (continued) Rank System Evaluation Against Essential Criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Balance	<i>Current System</i>	<ul style="list-style-type: none"> ▪ Having two rank groups (officers and airmen) means that leaders and followers are well distinguished ▪ Offers some career flexibility for officers ▪ Allows rapid expansion in war 	<ul style="list-style-type: none"> ▪ Rigid system ▪ No flexibility to fast-track high-fliers ▪ No scope for lateral recruitment ▪ Difficult to incorporate reserves into the permanent system ▪ Two rank groups are treated separately ▪ No career management for airmen ▪ Career progression can cause dislocation of family life ▪ Limited ability to specialise ▪ Limited ability to change careers in mid-stream ▪ Little flexibility to change with changes in society, culture or technology
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ Leaders and followers are well distinguished ▪ Flexible system ▪ Can fast-track high-fliers ▪ Easy to incorporate reserves into the permanent system ▪ Most people are specialists but some are generalists ▪ Single rank group ▪ Allows rapid expansion in war ▪ Career management for all ▪ All can specialise of change careers mid-stream ▪ Allows lateral recruitment ▪ Able to change with changes in society, culture or technology 	<ul style="list-style-type: none"> ▪ Supervisors provide flexibility for subordinates

Table C-1 (continued) Rank System Evaluation Against Essential Criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Economy of effort	<i>Current System</i>	<ul style="list-style-type: none"> ▪ System is well known and well developed 	<ul style="list-style-type: none"> ▪ Has two training, recruiting and administrative systems ▪ Trains personnel in leadership areas even though they may not use them ▪ Trains personnel in specialist areas but does not use them ▪ Requires several layers of management, increasing logistical burden ▪ Discourages units from having fewer but more highly trained personnel ▪ Centrally administered ▪ Expensive to administer
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ One training, recruiting and administrative system ▪ Provides leadership skills to personnel when needed ▪ Uses trained specialists ▪ Requires few levels of management ▪ Encourages units to have fewer but more highly trained personnel ▪ Administration decentralised ▪ Reduced number of trades ▪ Cheap to administer 	<ul style="list-style-type: none"> ▪ System is not well known

Table C-2 Rank System Evaluation Against Desirable Criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Cooperation	<i>Current System</i>	<ul style="list-style-type: none"> Encourages cooperation between personnel at equal rank 	<ul style="list-style-type: none"> Discourages cooperation between airmen and officers Sometimes discourages cooperation between personnel at different ranks
		<i>Alternative System</i>	<ul style="list-style-type: none"> Encourages cooperation between all personnel 	<ul style="list-style-type: none"> Nil
CRITERION	Preparedness	<i>Current System</i>	<ul style="list-style-type: none"> Nil 	<ul style="list-style-type: none"> Does not encourage personnel to be at maximum possible preparedness level Does not allow senior commanders to easily determine preparedness level Does not allow a simple calculation of resources required for transition to an operational level of preparedness
		<i>Alternative System</i>	<ul style="list-style-type: none"> Encourages personnel to be at maximum possible preparedness level Allows senior commanders to easily determine preparedness level Allows simple calculation of resources required for transition to an operational level of preparedness 	<ul style="list-style-type: none"> Could lead to an inflation of reported preparedness unless category requirements are well specified and controlled

Table C-2 (continued) Rank System Evaluation Against Desirable Criteria.

			<i>Positive Aspects</i>	<i>Negative Aspects</i>
CRITERION	Minimise attrition effects	<i>Current System</i>	<ul style="list-style-type: none"> ▪ Provides rewarding careers for some that meet personal and RAAF requirements 	<ul style="list-style-type: none"> ▪ Does not encourage minimisation of personnel attrition in peace ▪ Does not encourage personnel to be trained and proficient before performing tasks in peace ▪ Does not ensure that personnel are as proficient as possible in a war
		<i>Alternative System</i>	<ul style="list-style-type: none"> ▪ Provides rewarding careers for most that meet personal and RAAF requirements ▪ Encourages minimisation of personnel attrition in peace ▪ Encourages personnel to be trained and proficient before performing tasks in peace ▪ Ensures personnel are as proficient as possible in war 	<ul style="list-style-type: none"> ▪ Nil

Table C-2 (continued) Rank System Evaluation Against Desirable Criteria.

Glossary of Terms

Aircraft Engineering Trade Group

Air Force Technical trades trained and employed to conduct aircraft and aeronautical product maintenance for the Aircraft Engineering Trade Group. The Aircraft Engineering Trade Group consists of the following trades:¹

- **Aircraft.** The Aircraft trade is responsible for airframe, engine and weapon system maintenance.
- **Avionics.** The Avionics trade is responsible for electrical, instrument, radio and weapon system maintenance.
- **Aircraft Structures.** The Aircraft Structures trade is responsible for structural repairs.
- **Aircraft Life Support.** The Aircraft Life Support trade is responsible for safety and survival equipment, and aircraft furnishings.
- **Aircraft Surface Finisher.** The Aircraft Surface Finisher trade is responsible for the preparation and re-finishing of technical equipment surfaces.

Airworthiness

Airworthiness is a concept, the application of which defines the condition of an aircraft and supplies the basis of judgement of the suitability of flight of that aircraft.² For an aircraft to be considered airworthy, it must have been designed, constructed, maintained and certified in accordance with approved standards and regulations, by competent and approved individuals.³ (See Mission-worthiness)

Area of Operations

That portion of an area of war necessary for military operations and for the administration of such military operations.⁴

¹ Australian Air Publication (AAP) 7001.059, *Aircraft Maintenance Management Manual*, AL 5 issued 16 August 2001, Sect 2, Chap 4, para 18–20.

² Defence Instruction (General) OPS 02-2, *Australian Defence Force Airworthiness Management*, 13 July 2000, p. 2.

³ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 1, Chap 1, para 6.

⁴ Australian Defence Force Publication 101, *Glossary*, 1st edn, AL 1 issued 21 October 1997, pp. A–18.

Battle Damage Repair

Battle Damage Repair (BDR), a subset of Contingency Maintenance, is the means by which technical equipment damaged, from any source, during a conflict can be repaired quickly to restore an adequate level of mission capability. BDR comprises assessment, design, approval, acceptance and repair. Aircraft Battle Damage Repair (ABDR) is the subset of BDR that uniquely applies to aircraft. ABDR is used to restore sufficient strength and serviceability to permit damaged aircraft to fly additional operational sorties or to enable those aircraft that are damaged beyond unit repair capability to make a one-time ferry flight to a major repair facility. In doing so, ABDR may vary the intrinsic level of safety embodied in standards of technical airworthiness. Similarly, ABDR may affect mission capability in that full functionality or performance may not be provided for all mission types.⁵

Centre of Gravity

A military centre of gravity is a vital element whose loss would cause significant difficulties. A base—particularly a forward operating base—is a centre of gravity in air operations. If it were lost or damaged, and air operations consequently impeded, then the war could be lost. For this reason, airfields are important targets for enemy action and should be well protected.⁶

Contingency Maintenance

Contingency Maintenance (CMAINT) comprises those maintenance activities, which are performed during a declared contingency operation. CMAINT may involve revised servicing schedules, component lifing strategies (plans) and repair philosophies (including Battle Damage Repair) which will maximise operational availability while constraining and managing risk.⁷

Contingency Operation

Contingency Operation is defined as the preparation for, and participation in, short-warning conflict.⁸

⁵ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 1, Chap 1, para 6.

⁶ Ian MacFarling, *Air Power Terminology*, 2nd edn, Aerospace Centre, Canberra, 2001, p. 21.

⁷ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 3, Chap 10, para 8.

⁸ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 3, Chap 10, para 7.

Control of the Air

Control of the air is the primary air power capability. It is the ability to use the third dimension and the surface below it, without being threatened or attacked by an opponent's air power. It is, without doubt, the prerequisite for successful military operations, both in attack and defence.⁹

Cross-Trade Employment

Cross-Trade Employment is the employment of technical tradespeople on maintenance tasks normally performed by members of technical trades other than their own.¹⁰

Deeper Maintenance

The focus of Deeper Maintenance (DM) is asset preservation. This level of maintenance includes tasks that are more complex than operational maintenance and normally require specialised equipment and technical skills. DM relies on access to extensive support equipment and workshop facilities for successful conduct.¹¹

Direct Supervision

Direct Supervision denotes the highest degree of control over the work of others than that exercised under normal supervision. The key difference is that when direct supervision is in effect, the supervisor assumes responsibility for the correctness and quality of any specific tasks performed by the person under supervision. Personnel performing the direct supervision of personnel carrying out maintenance tasks are not to be employed on other tasks or duties during the period of direct supervision.¹²

Fitter

In the ADF, the term fitter is used to describe a tradesman who has completed trade training but has yet to complete the on-the-job experiential requirement (normally two years) to qualify them for a technician's certificate.

⁹ MacFarling, *Air Power Terminology*, p. 30.

¹⁰ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 7.

¹¹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 3, Chap 1, para 7.

¹² AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 22.

Force Structure

Force structure can be defined as the size, organisation, and technical and operational characteristics of a force-in-being.¹³ Government policy, strategy, and equipment and manpower limitations are taken into account, to configure a military organisation to undertake its assigned roles.¹⁴ Force structure includes the composition and distribution of hardware (aircraft, facilities and supporting equipment) and personnel (operators, maintainers and support personnel), and the management infrastructure that ensures the force structure remains robust, flexible and capable.

Independent Inspector

An Independent Inspector is a tradesperson who is authorised by the Senior Maintenance Manager (SMM) to perform Independent Inspections.¹⁵

Inspection

An Inspection is the process of determining compliance with engineering/maintenance standards and applicable maintenance documents.¹⁶

Maintenance

Maintenance is the ongoing activity necessary to ensure that an aircraft is preserved in an airworthy state to meet operational requirements. Maintenance activities include inspection, servicing, repair, overhaul, calibration, testing, rebuilding, reclamation, modification incorporation, recovery and salvage of technical equipment.¹⁷ Additionally, the scope of maintenance encompasses the managing, planning, scheduling and supervising of maintenance activities, and the engineering and regulatory frameworks that support those activities.

Maintenance Authorising Body

The Maintenance Authorising Body (MAB) is an organisation with control over a maintenance organisation either through organisational authority (for ADF Authorised Maintenance Organisations) or contract authority (for commercial organisations). For example, an MAB may be a Force Element Group (FEG) (an organisational authority), or System Program Office (SPO) (acting as a contracting authority).¹⁸

¹³ Australian Air Publication (AAP) 1000, *Air Power Manual*, 3rd edn, Air Power Studies Centre, Canberra, 1998, p. 12.

¹⁴ MacFarling, *Air Power Terminology*, p 56.

¹⁵ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 24.

¹⁶ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 25.

¹⁷ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 1, Chap 1, para 15–16.

¹⁸ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 27.

Maintenance Authority

Maintenance Authority is the authority to undertake specific maintenance activities.¹⁹

Maintenance Documents

Maintenance Documents include the orders, instructions, publications and forms utilised by technical personnel when conducting maintenance. They include; Defence Instructions, *Standing Instructions*, *maintenance forms*, *Special Technical Instructions*, specifications and work sheets.²⁰

Maintenance Manager

A Maintenance Manager (MM) is a person who has been authorised by the Senior Maintenance Manager (SMM) to manage maintenance activities on a nominated aircraft or aeronautical product within an Authorised Maintenance Organisation (AMO). A person authorised as a Maintenance Manager will be assigned a level of responsibility commensurate with their experience, training, competence and rank level.²¹

Maintenance Task

A Maintenance Task is an activity having a defined start and finish. The task may include one or more actions which will be potentially effective in preventing or detecting failures, will restore equipment to a serviceable condition or prepare an aircraft for a particular mission. Such maintenance activities include replenishment, scheduled servicing and rectification. A particular maintenance task may rely on other maintenance tasks for completion.²²

Missionworthiness

Missionworthiness covers the technical and operational worthiness of weapons platforms, weapons systems and ordnance, and their interfaces, for specified missions. The missionworthiness concept encompasses all 'worthiness' (eg. *airworthiness*, *sea worthiness*) considerations employed by the Services in a combined approach to defining fitness for purpose.²³

¹⁹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 28.

²⁰ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 29.

²¹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 30.

²² AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 32.

²³ Defence Instruction (General) LOG 08-8, *Maintenance Policy*, 21 March 1996, Annex A.

Mustering

A mustering is a discreet group of personnel who are identified by a common gradation list for progression within the mustering/trade and pay group. For technical tradespeople, skill levels within a trade, for example Fitter and Technician, differentiate musterings within each trade.²⁴

Normal Supervision

Normal Supervision is a degree of control exercised over the work of others such that personnel carrying out maintenance under normal supervision remain responsible for the correctness and quality of any specific tasks performed by the tradesman. Normal supervision requires that all critical maintenance activities be closely supervised.²⁵

Occupational/Trade Specification – Air Force

Occupational/Trade Specification – Air Force is a document that defines the employment requirements of a specific group. Information in the Occupational/Trade Specification includes the tasks performed by different ranks within the group, the minimum standards to which the tasks are to be performed, the requirements for entry to the group, and details of training and advancement within the group. Note that the term 'Trade Specification' is still in use for some Air Force groups, however, the term 'Occupational Specification' has superseded 'Trade Specification'.²⁶

Operational Maintenance

The primary aim of Operational Maintenance (OM) is mission generation. Tasks directly related to the preparation of equipment for immediate use, recovery and minor repair of the equipment after use. OM tasks require a limited range of support equipment and may involve the limited use of workshop facilities.²⁷

Preparedness

Preparedness is the ability of a defence force to undertake operations in a timely manner, that is, being ready for a contingency.²⁸ The high cost and long lead-times associated with the procurement of modern weapons require armed forces to be prepared to fight with the people and equipment they have available at any given time. '... Most professional armed services stress preparedness, either explicitly or

²⁴ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 8.

²⁵ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 33.

²⁶ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 9.

²⁷ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 3, Chap 1, para 6.

²⁸ AAP 1000, *Air Power Manual*, p. 12.

implicitly, as a principle of war. It covers the weapons systems and their logistics support, and the personnel and their training and education.²⁹

Self-Certifying Maintainers

Self-Certifying Maintainers (SCM) are Technicians of Corporal (or equivalent) rank and above, who have been authorised to certify in the role of both Technician and Trade Supervisor (first and second level of certification) for work they have personally performed. Self-Certifying Maintenance may be applied to all maintenance carried out on Aircraft and aeronautical product by an Authorised Maintenance Organisation (AMO).³⁰

Senior Maintenance Manager

The Senior Maintenance Manager (SMM) is the senior appointment, within an Authorised Maintenance Organisation (AMO), with accountable responsibility for the maintenance function performed. Examples include Senior Engineering Officers (SENGOs), Aircraft Engineer Officers (AEOs) and Commanders of maintenance wings, squadrons or units.³¹

Ship's Flight

A Ship's Flight is a Flight dedicated to a ship and integrated under the operational command of the Ship's Commanding Officer. A Ship's Flight may be detached from their designated ship to come under the operational control of other authorities as required.³²

Squadron Flight Support Cell

A Squadron Flight Support Cell is a dedicated group of personnel within a Squadron that oversees Ships Flights and contributes to their administrative, training and technical support.³³

Supervision

Supervision is the control exercised by one member over the work of others. This control includes the authority to guide and direct others.³⁴

²⁹ MacFarling, *Air Power Terminology*, pp 102–3.

³⁰ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 36.

³¹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 37.

³² AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 38.

³³ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 39.

³⁴ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 40.

Supervisor

A Supervisor is any person with delegated responsibility for the management and/or supervision of other personnel.³⁵

Sustainability

Sustainability can be defined as '... the ability to maintain an operation for a long period of time'.³⁶ However, the term sustainability pertains to more than just the conduct of operations. In order to be able to sustain operations, the armed force itself must be sustainable, the supplies and supply lines to that force must be sustainable, and the will of both the force and the nation must endure. External to operations, it is the sustainability of the force itself that is the key issue affecting the ADF's ability to prepare for, conduct and sustain effective operations.

Task Authorisation

Task Authorisation is the legal authority allowing a person to perform a specified maintenance task, in recognition that the person has completed the prerequisite training relevant to the task and has demonstrated competency in performance of the task.³⁷

Technical Airworthiness Regulator

The Technical Airworthiness Regulator (TAR) is the person with the ultimate delegated responsibility for day to day technical airworthiness management of ADF aircraft and aircraft-related systems. Within the ADF, this responsibility rests with Director General Technical Airworthiness (DGTA).³⁸

Technical Equipment

Technical equipment is specifically used in support of operations and includes weapon platforms and systems. Technical equipment normally requires engineering processes to ensure that its design, configuration, performance and availability satisfy operational and safety requirements.³⁹

³⁵ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 41.

³⁶ MacFarling, *Air Power Terminology*, p. 128.

³⁷ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 10.

³⁸ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 42.

³⁹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 11.

Technical Mastery

Technical mastery is the possession of the knowledge and skills needed to professionally control technical equipment including the complete management of maintenance of technical equipment at all levels. Therefore, technical mastery is an inherent level of accumulated knowledge, experience, proficiency, skill and expertise of a given engineering or technical discipline.⁴⁰

Technical Tradesman

A Technical Tradesman is a person who has satisfactorily completed a formal ADF recognised technical trade training course that qualifies that person to perform maintenance tasks, subject to task authorisation, associated with the relevant trade discipline.⁴¹ (See also Tradesman)

Trade

A trade is a single mustering, or group of musterings, identified as a trade according to the discrete characteristics detailed in the applicable Occupational Trade Specification.⁴² For example, there are five aviation trades in the RAAF—Aircraft, Avionics, Aircraft Structures, Aircraft Life Support and Aircraft Surface Finishers. Each trade is further divided into musterings; for example Avionics Fitters, Avionics Technicians, Advanced Avionics Technicians and Avionics Systems Technicians are all discrete musterings within the avionics trade.

Tradesman

A Tradesman is a person who has satisfactorily completed a formal ADF, aircraft trade training course which qualifies the person to perform maintenance tasks, subject to authorisations, associated with the relevant trade discipline.⁴³ The word *tradesman* has been used in lieu of *tradesperson* to reflect the tradition of the term rather than any gender bias. In the same way that the term *chairman* in business can refer to either a male or female or female incumbent, a *tradesman* can be either male or female.

⁴⁰ Defence Instruction (General) LOG 08-8, *Maintenance Policy*, 21 March 1996, Annex A.

⁴¹ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 12.

⁴² AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 4, para 8.

⁴³ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 43.

Trade Supervisor

A Trade Supervisor is a Corporal (CPL) or above who is authorised by the Senior Maintenance Manager (SMM) to supervise tradespeople and perform required Progressive Inspections. Note that for Army a Trade Supervisor may be a Lance Corporal (LCPL) who has successfully completed Trade Supervisor Assessment (TSA).⁴⁴

⁴⁴ AAP 7001.059, *Aircraft Maintenance Management Manual*, Sect 2, Chap 5, para 44.

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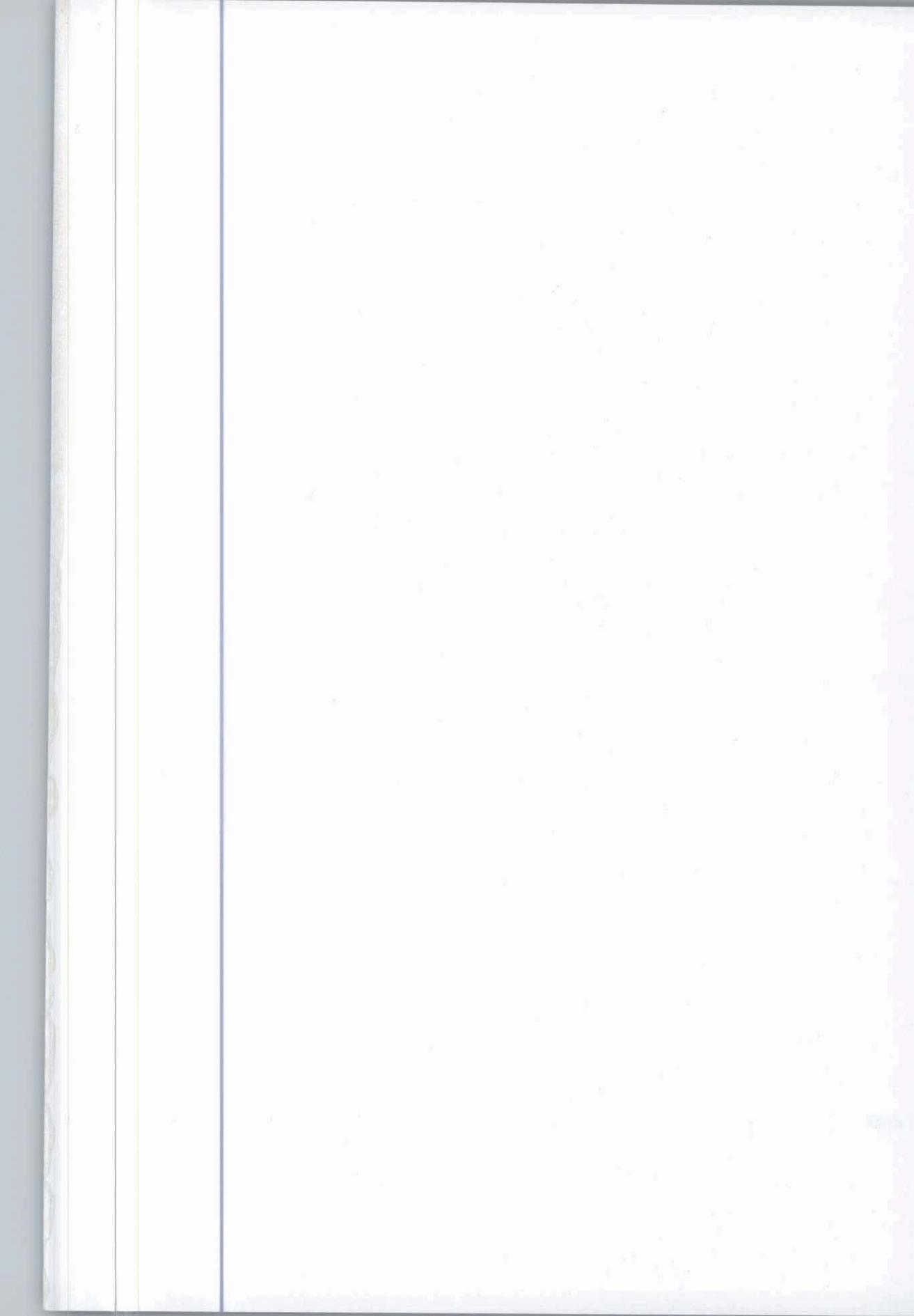
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What Makes Techo's Tick?

The Human Factor in ADF Aviation Maintenance Capability

In a world of ever increasing technology and more obscure military threat, the ability of the Australian Defence Force to maintain high levels of capability, readiness and flexibility are paramount in assuring the security of the Australian Nation and its interests. The key to any successful military operation is control of the air environment. The security of airspace usually requires the presence of airborne weapons and surveillance platforms, and ensuring such platforms are accurate, safe, reliable and operational when required is the role of the ADF's aviation technical workforce.

However, the ADF is losing its technical personnel, and the skill and experience base of its aviation tradespeople is rapidly eroding. This is a problem because people, together with equipment, form the pillars that support Australia's defence capability. It is capability, together with national will, that creates Australia's defence posture — a deterrent vital to Australia's national defence policy. No enterprise can remain effective for very long without enough appropriately trained and adequately experienced people.

This book presents as its hypothesis that the key to restoring ADF technical skills and experience is to change the philosophy by which the ADF determines and manages its force structure and people. In order to ensure its technical trades are sustainable, and that a level of technical mastery is maintained, the ADF must better understand its people and what they do. By fully appreciating what it takes to be, and means to be, a skilled technician and by understanding what they are truly capable of, the ADF can begin to develop not only the technical work force it needs to support operations, but one that is suitable and viable for the long term. The same philosophy applies equally to all musterings, trades, specialisations, Services and Defence Forces.