Unexpected Turbulence: The Barriers and Challenges Faced by Women Pilots in the Australian Defence Force

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UNEXPECTED TURBULENCE: THE BARRIERS AND CHALLENGES FACED BY WOMEN PILOTS IN THE AUSTRALIAN DEFENCE FORCE

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A thesis submitted in fulfilment of the requirements for the degree of

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School of Humanities and Social Sciences

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Unexpected Turbulence: the Barriers and Challenges Faced by Women Pilots in the Australian Defence Force

Unexpected Turbulence is a feminist, multidisciplinary study of women in non-traditional occupations. Using Australian Defence Force (ADF) pilots as a 'case', the research examines factors impacting women's selection of a flying career; identifies the gender-based barriers and challenges women pilots face through different career stages; and delivers a model for increasing women's representation in non-traditional fields.

The analysis draws on seventy-five semi-structured interviews and twelve focus group discussions designed to capture women and girls' experiences in and perceptions of civilian and military piloting careers. The study also encompasses valuable practical and theoretical insights from delivering, within the ADF, a targeted implementation strategy to mitigate the numerous challenges identified throughout the research.

This thesis contends that ADF women pilots face pervasive and sometimes insurmountable gender-based hurdles, both structural and cultural, at every career stage. These barriers are primarily borne from women's extremely low numerical representation and the hegemonic masculinity found within military flying. Women's lack of critical mass in this highly masculinised occupation presents some difficult choices between isolationism and adopting the dominant male paradigm.

In seeking a way forward, the study highlights several essential elements in analysing and responding to the challenges faced by women in non-traditional occupations; including the value of applying a feminist lens to each research and reform stage and maintaining an occupational (not organisational) focus. The research also demonstrates the criticality of addressing *both* supply (choice) and demand (power) factors impacting women's choices, attitudes and experiences and translating those insights into a comprehensive strategy for delivering occupational reform.

The study makes a number of significant contributions, such as extending current theoretical frameworks pertaining to gendered occupations and locating ADF women pilots as 'case' within these frameworks. Most importantly, the study also introduces an original concept called 'occupational feminism' and an applied diversity reform model called 'Feminist Occupational Intervention'; each of which has the potential to be applied more broadly in both academic research and organisations and/or industries.

Occupational feminism provides a framework for bridging feminist research and human resource development practice, to significantly improve the way organisations attract, select, train, and retain women in non-traditional occupations.

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Although this research focuses on the Australian military context, I would like to dedicate this thesis to military and civilian women pilots all over the world; past, present and future.

You are truly inspirational.

ABSTRACT

Unexpected Turbulence is a feminist, multidisciplinary study of women in non-traditional occupations. Using Australian Defence Force (ADF) pilots as a 'case', the research examines factors impacting women's selection of a flying career; identifies the gender-based barriers and challenges women pilots face through different career stages; and delivers a model for increasing women's representation in non-traditional fields.

The analysis draws on seventy-five semi-structured interviews and twelve focus group discussions designed to capture women and girls' experiences in and perceptions of civilian and military piloting careers. The study also encompasses valuable practical and theoretical insights from delivering, within the ADF, a targeted implementation strategy to mitigate the numerous challenges identified throughout the research.

This thesis contends that ADF women pilots face pervasive and sometimes insurmountable gender-based hurdles, both structural and cultural, at every career stage. These barriers are primarily borne from women's extremely low numerical representation and the hegemonic masculinity found within military flying. Women's lack of critical mass in this highly masculinised occupation presents some difficult choices between isolationism and adopting the dominant male paradigm.

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The study makes a number of significant contributions, such as extending current theoretical frameworks pertaining to gendered occupations and locating ADF women

pilots as ‘case’ within these frameworks. Most importantly, the study also introduces an original concept called ‘occupational feminism’ and an applied diversity reform model called ‘Feminist Occupational Intervention’; each of which has the potential to be applied more broadly in both academic research and organisations and/or industries.

Occupational feminism provides a framework for bridging feminist research and human resource development practice, to significantly improve the way organisations attract, select, train, and retain women in non-traditional occupations.

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LIST OF ABBREVIATIONS

2FTS	Number Two Flying Training School
ADF	Australian Defence Force
ADFA	Australian Defence Force Academy
ADHREC	Australian Defence Human Research Ethics Committee
AFHQ	Air Force Headquarters
AHRC	Australian Human Rights Commission
AWPA	Australian Women Pilots' Association
BFTS	Basic Flying Training School
BAv	Bachelor of Aviation
CAF	Chief of the Air Force
CASA	Civil Aviation Safety Authority
CDF	Chief of the Defence Force
DFR	Defence Force Recruiting
DGPERS-AF	Director General Personnel – Air Force
FOI	Feminist Occupational Intervention
GA	General Aviation
GSO	General Service Officer (Army)
HR	Human Resource
HRD	Human Resource Development
PPL	Private Pilot's Licence
PSA	Pilot Selection Agency
RAAF	Royal Australian Air Force
RMC	Royal Military College (Duntroon)
ROSO	Return of Service Obligation
RAN	Royal Australian Navy
SLT	Senior Leadership Team (Air Force)
SME	Subject Matter Expert
TD	Temporal Discipline

CHAPTER ONE – FLIGHT PLAN

THESIS INTRODUCTION

CHAPTER ONE – FLIGHT PLAN
(THESIS INTRODUCTION)

'Gender integration amounted to a double assault on their manhood: first you had women thinking they should join in this manly sport of war, now they wanted to fly your goddam air-plane too!' Gandt, 1997:35

Introduction

On 04 April 2013, the Chief of the Royal Australian Air Force (RAAF), Air Marshal Geoff Brown, proudly launched '*Flying Solo: A Handbook for Women Pilots'.* This glossy 'women's magazine' style document was designed *by* military women pilots *for* military women pilots based on many of the findings emanating directly from the research detailed in this thesis. *Flying Solo* is a brutally honest and sometimes confronting guide designed to help women understand and mitigate some of the gender-based barriers they are likely to face as women pilots in the Australian Defence Force (ADF).

These guidebooks are just one of many interventions designed by the Air Force to mitigate the multitude of gender-based barriers and challenges determined throughout this doctoral research project. The publication of *Flying Solo* and other strategies for increasing women pilots' participation represents a significant step in the Air Force's cultural journey towards greater gender inclusion for women in both pilot and other non-traditional employment roles. The research detailed in this thesis has formed a critical part of the Air Force's current gender diversity strategy and broader cultural reform journey.

Unexpected Turbulence: The Barriers and Challenges Faced by Women Pilots in the Australian Defence Force is a feminist, multidisciplinary research project that explores and then seeks to rectify the multitude of gender-based barriers and challenges faced by women pilots in the ADF. This thesis uses military piloting as a 'case' to study gendered organisations and women in non-traditional employment,

adding women pilots' narrative to the small, but growing, body of literature addressing flying as a non-traditional occupation for women.

Due to both the nature of their work and their organisational context, women pilots in the military must operate within three distinct layers of non-traditional employment: the military itself; their specific Service (Navy, Army or Air Force); and the field of aviation within their Service. Each layer represents various challenges as women pilots progress their aviation careers through a range of different life and work stages.

As the Air Force is the Service with the highest overall number of pilots (747 compared with 308 in the Army and 98 in the Navy[1]), this research places particular emphasis on Air Force pilots; providing practically applicable solutions to some of the issues raised throughout. The Air Force was a focus not only because of their higher pilot numbers, but also because it manages most of the pilot selection processes and initial flying training pathways for the entire ADF. It is also the sphere in which I, as an Air Force Officer, had the most ability to deliver the practical organisational interventions that were conceptualised throughout this research.

While other studies of non-traditional occupations generally focus on just one or two aspects of employment (for example, attraction, entry, training, retention or progression barriers), *Unexpected Turbulence* encompasses barriers and challenges faced at *all* stages of the employment cycle. The research explores women's initial interest in flying and recruitment to the ADF, through to training experiences and retention considerations. Cultural and structural barriers impacting on women's success at all stages of the career cycle are considered in depth, and illuminate key areas of organisational dysfunction that must be addressed if the number of women pilots is to increase in the future.

[1] Data extracted from Defence Personnel Database, PMKeyS, accessed 11 June 2013

A key feature of *Unexpected Turbulence* is the inclusion of the Air Force's targeted response to many of the research findings. While this research is not strictly 'action research' in the traditional sense, it certainly has an *action orientation* as, from the outset, my intent was to develop practical human resource interventions that might increase the ratios of women pilots in Defence beyond the current levels.

Including the Air Force's response to this project's findings demonstrates the linkages between research outcomes and practical human resource strategies and the value of 'occupational feminism' as an approach to understanding and addressing the challenges of gendered organisations and non-traditional employment. This research has also resulted in a research-to-action model, Feminist Occupational Intervention (FOI) that may be helpful to other highly masculinised industries seeking to increase women's representation in non-traditional employment fields.

Aim and research questions

Unexpected Turbulence explores the problem of why so few women enter, succeed and remain in military piloting roles. This is achieved through determining the barriers and challenges faced by women through different career and life stages. This research commenced with two overarching aims that were developed during the early stages of the process:

1. to contribute Australian military women pilots as a 'case' to ongoing theoretical debates about gendered occupations/organisations and the barriers faced by women who choose non-traditional careers; and
2. to develop a research-based model that will enable organisations to attract and retain higher numbers of women in non-traditional occupations.

The first of these aims makes clear the academic contribution of this thesis while the second encapsulates the intended practical aspect or 'action orientation' that was a key goal from the outset. One of the defining features of feminist research is the focus on 'the improvement of the status of women' (Eichler, 1997:10) and a desire to 'facilitate personal and societal change' in support of women (Neuman,

2006:103). These feminist intentions and my strong personal desire to practically assist the ADF to attract and retain higher numbers of women pilots were key considerations at every stage of the research journey.

The above overarching aims were of paramount importance when refining the study's scope and deciding on a research method. As the research progressed, they were also integral to guiding the development of the questions that formed the foundation of the research. While the wording and intent of these questions were modified at various stages, in essence, they remained true to the original research aims. The research questions are:

1. Why do so few women seek ADF flying careers?
2. What are the gender-based barriers and challenges impacting on ADF women pilots and how do they affect their progression in the ADF?
3. How do current theories pertaining to gendered organisations and non-traditional workers apply to the case of ADF women pilots?
4. How might any identified barriers and challenges be mitigated through targeted human resource development interventions?

Methodology and theoretical positioning

Mixed methods were used to develop the empirical contributions of this study. The research was qualitative, drawing on the personal experiences and perspectives of women pilots and giving a voice to their reflections on negotiating their gender in the male-dominated world of military flying. Data from semi-structured interviews with seventy-five women pilots, past, present and future (across a range of different aviation organisations) provided the basis for the arguments presented throughout. Focus groups held with non-pilot women and girls also helped to illuminate the question of why so few women pursue flying careers in both military and civil aviation.

While the research primarily focuses on military aviation, civilian women pilots' experiences are also captured and included in many aspects of analysis and discussion. The inclusion of civilian pilots' experiences and an understanding of the

civilian context are beneficial to making comparisons across different aviation settings. These comparisons are necessary to ascertain whether the barriers identified are exclusive to military aviation or experienced more broadly by other women pilots. Including civilian pilots' perspectives in this study is also pivotal to understanding why the ratios of women pilots in civil aviation are so much higher than those in the ADF.

This research project is located within feminist epistemology. Feminist theory, as it pertains to the study of women in non-traditional employment, forms the theoretical framework for all aspects of the methodology, analysis and discussion. While there are divergent views regarding what constitutes modern feminism (or feminisms), there are common threads that unify feminists as both theorists and activists. One of the major premises of all forms of feminism is that 'traditional accounts of socio-political life are prejudicial to women' (Gatens, 1991:1).

This premise is supported by an underlying belief that gender is socially constructed rather than biologically predetermined (Sprague, 2005). Feminist research is usually conducted 'for women rather than about women' (Hesse-Biber & Leckenby, 2004:213) and has an overarching commitment to take action to remedy women's disadvantages (Morawski, 1997). This research's action orientation and impact on the working lives of military women pilots is addressed in Chapter Eight of this thesis.

Theoretical perspectives of women in other non-traditional employment illuminate the analysis and discussion, and provide a helpful point of comparison with other highly masculine fields. Bagilhole's (2002) in-depth research examining women in a range of non-traditional employment fields provides insights that were essential to the conceptualisation and ongoing development of this research. Whittock's (2000; 2002) studies of both men and women in non-traditional employment have also been invaluable to the research's formulation and development. This study draws on a range of other academic works focused on women in other non-traditional fields, such as Greed's (1991) research on the surveying occupation, and extensive

studies of women in construction (for example, Gale, 1994; Bennett et al., 1999; Fielden et al., 2000; Andrew, 2009; Ericksen et al., 2009).

Acker’s (1990) theory of gendered organisations has enriched all stages of this research’s planning and development, especially her view that the deeply embedded, highly gendered nature of organisations actively subordinates women in almost all modern workplaces. Acker’s ‘call to arms’ was a key inspiration for embarking on this project to expose the deeply gendered nature of military flying and the impact that gender has on a woman’s ability to ‘survive and thrive’ within this environment. Kanter’s (1977) seminal theory, which addresses the impact of group proportions on women who work as a very small part of a male-dominated work group, remains an authoritative framework for researchers examining non-traditional employment. Kanter’s theory is tested and extended within this thesis, as a means of exploring and explaining the numerous cultural barriers impacting on women pilots and their acceptance in the ADF.

Past studies of the barriers and challenges facing women pilots in other aviation fields and in different countries help to establish whether those identified through this research are unique to Australian military aviation or also prevalent in other aviation organisations. Neal-Smith and Cockburn’s (2009) examination of cultural sexism in the United Kingdom’s airline industry and Davey’s (2004) study of the human factors affecting civilian flight training *ab initio* show some similarities to the findings from this research.

Mitchell et al.’s (2005) cross-national study provides insights into Australian men pilots’ perceptions of their women colleagues that resonate with the findings outlined throughout *Unexpected Turbulence*. The literature pertaining to the gendered nature of a military institution enriches this research but does not form the primary theoretical position of this study. While the gendered nature of militaries has been well documented by other researchers, my focus is on the field of aviation within such a gendered institution.

The case for military pilots as a research topic

Feminist researchers are implored to illuminate the key decisions that are important to all stages of the research process (Letherby, 2003); arriving at a topic was a significant aspect of my research journey. There were many reasons, theoretical, personal and practical, why the occupation of pilot was chosen as a case study of non-traditional employment within the military. The academic aspect of this decision is outlined in the forthcoming discussion targeting the contributions and significance of this study while this section outlines the more practical and personal reasons.

I am a senior Officer in the Royal Australian Air Force, working in the gender diversity field and with a research interest in women in non-traditional employment. From a purely practical perspective, to gain financial support, study leave and Defence ethics committee permissions, it was necessary to select a topic of interest and value to the Air Force's leadership. Women's low representation in military flying has been of concern to ADF leadership for a number of years, for a number of valid reasons. Firstly, the ratios of women pilots in the ADF are half those in civil aviation. In Australia, women comprise around six per cent of the *commercial* and *general aviation* piloting workforces[2] which approximates estimated percentages in other countries (Turney et al., 2002, Mitchell et al., 2005, Neal-Smith & Cockburn, 2009).

While this percentage appears small, at just three per cent, the ratios of women in ADF piloting roles are substantially lower. Pilots comprise the largest Officer occupational group in the Air Force (18.67 per cent of the total Officer workforce[3]) but have the *lowest ratios of women* in all Officer roles. Even when compared with other military organisations within Australia, the Air Force, the primary deliverer of air power, has the lowest representation of women pilots across the three Services.

[2] Approximated by combining CASA licensing data with other estimations (Mitchell et al., 2005; Marchbank, 2010)

[3] Based on data extracted from Defence's Personnel Management Database, PMKeyS, as at 11 June 2009

As at June 2009 when this study commenced, the ADF ratios of women pilots were as follows: Navy 3 per cent; Army 3.8 per cent; and Air Force 2.4 per cent[4]. While there are promising signs of women increasing their numbers in civil, Army and Navy aviation, women's representation in Air Force piloting roles has remained steadfastly low. This difference across contexts is deeply puzzling to Air Force leaders, especially when the ADF generally outperforms industry in terms of women's employment in non-traditional fields[5].

The Air Force leadership's interest in increasing women pilot's representation also has a practical aspect. The ADF has not met recruiting targets across all three Services for the past eight years[6]. The employment roles for which the ADF traditionally fails to meet recruiting targets are those skill areas that are also in high demand by industry, such as technical, engineering, aviation and some health-related fields. There are strong indications that the ADF will face fierce competition for pilots in the future due to predicted pilot shortages caused by a recovering post-2009 world economy, globalisation, the rapid growth in Asia's aviation industries and an ageing pilot population (Craver, 2007; Blakely, 2008).

In relation to all ADF occupations, Gibbon notes that, in future years, 'competition for talent, especially for the 17 – 25 years olds who make up the majority of entrants to the ADF, will be fierce' (2013:253). While already problematic, the recruiting situation may worsen over the forthcoming decade as Australia's population is rapidly ageing (Social Policy Division, 2004) and the size of the ADF's traditional recruiting target group, young men, is shrinking (Smith & McAllister, 1991).

Worldwide, other aviation industries are already actively targeting women for flying roles, possibly as a potential antidote to these predicted shortages (Bennett, S.,

[4] Based on data extracted from Defence's Personnel Management Database, PMKeyS, as at 11 June 2009

[5] A comparison of industry and ADF data in 2009 demonstrated that ADF women's representation in other non-traditional roles such as air traffic control (19%), policing (20%) and civil engineering (12%) exceeds industry representation levels

[6] Based on data obtained from Defence Force Recruiting's Data Manager, accessed 2012

2006; Morley, 2008; Foster, 2010). As industries' interest in recruiting women pilots will further increase the competition for piloting talent, the ADF will need to work hard to retain a competitive edge. This research will assist this endeavour.

Currently, based on its numerical representation, the ADF is only fishing in half the talent pool of potential pilots while the 'best and brightest' may be swimming in the other half. Enticing higher numbers of women to enter the pilot selection pool can only improve the overall calibre of pilot candidates. Defence leaders have publicly stated the numerous benefits that diversity brings to organisations (Richardson, 2013) and this may be especially true of piloting.

Research into flight safety and human factors in aviation indicates that women pilots may actually offer some advantages over their male counterparts (Vail & Ekman, 1986; McFadden, 1996). For example, McGlohn et al.'s study of the psychological characteristics of military pilots concludes that women pilots 'seem to have more of a "good thing" in terms of positive personality traits' and 'it could just be that women make better Air Force pilots than men' (1996:17). They contend that, within military aviation, while men may have the egocentric 'right stuff', women 'appear to have more of what may be the "good stuff"' (McGlohn et al., 1996:14).

Improving diversity in the pilot group may also have broader organisational benefits that are unrelated to flying skills. In the Australian Air Force, like most Air Forces, the vast majority of senior leaders tend to be pilots. The Chief of Air Force and his deputy have always been drawn from the pilot specialisation, as have the majority of the Air Force's senior policy makers, capability managers, project-leaders and personnel specialists. Despite the overall representation of women in the Air Force being 18.9 per cent (AHRC, 2012), in 2012, only one woman (1.9 per cent) was among its fifty-three star-ranked Officers. The Australian Human Rights Commission (AHRC), in its review of the treatment of women in the ADF, observed that this is attributable to senior leaders being 'customarily drawn from categories which have historically been male dominated, such as aircrew and engineering' (2012:107).

These low numbers of women in the Air Force's senior leadership team has reputational consequences for an organisation seeking to position itself as an employer of choice for women. Apart from affecting its reputation, the nature of warfare and the global security environment are rapidly changing, with technology and the information revolution already having had major impacts. This rapid change will continue as newer technologies, such as robotics, drones and nanotechnology, further transform armed conflict (Metz, 2000). The complexities and multi-dimensional demands of modern warfare mandate different skills and approaches to complement those found within more traditional war-fighting paradigms (DeGroot, 2001; Bridges & Horsfall, 2009).

Gender diversity in all ADF occupational groups may become critical for generating a diverse and agile senior leadership team capable of negotiating complex future conflicts. The AHRC's recent review further observed that, 'in no uncertain terms', 'increasing the representation of women … goes to the very heart of the sustainability and capability of the ADF' (2012:20). Unfortunately, the Air Force is simply not currently accessing the numerous benefits that diversity can bring to organisations in a rapidly changing global environment. Air Force's senior leaders are aware that increasing the numbers of women pilots in leadership roles is essential to resolving this issue over the longer term, which presents another compelling reason for choosing this particular topic.

Beyond the aforementioned practical reasons for choosing military pilots as a case study, another rationale is that increasing women's representation in flying pertains to the Air Force's reputation on the international stage. Women currently fly all available rotary wing platforms in the Australian Army and Navy. In the Air Force, women pilot almost every aircraft type, including medium and small transport/cargo, maritime patrol, refuelling/multi-role tankers and airborne early warning. Fighter aircraft are the notable exclusion.

Although the 'fast-jet' employment stream was opened to women in the late 1980s, Australia has thus far been unable to graduate a single woman fast-jet pilot. This seems to be an issue unique to Australia, as numerous westernised countries, such as the United States, Canada, the United Kingdom and New Zealand (before they decommissioned their fighter aircraft), have produced multiple numbers of women fast jet pilots for many years.

More recently, women have even succeeded in flying fast jets in a range of Muslim countries, where women's employment options can be limited by their gender; Pakistan is a recent addition to this growing list (Sayah, 2009). Australia's inability to produce that elusive 'first female fighter pilot' is an issue which has drawn media speculation (Veness, 2011), political interest and been of ongoing concern to Air Force leaders (Dodd, 2009). This adds an intriguing dimension to the research and further enhanced Air Force leadership's support for this research project.

Unexpected Turbulence also has a practical application beyond Defence. While aviation organisations are expressing increased interest in recruiting greater numbers of women pilots, there is minimal practical guidance for informing their quest. Flying remains an under-researched field of non-traditional employment for women. Although its focus is on military aviation, *Unexpected Turbulence* provides information about the barriers and challenges impacting on *all* women pilots, which may be beneficial to an industry seeking to diversify its flying workforce.

Further, as military pilots are an ongoing source of skilled workers for commercial aviation, increasing the number of women pilots in Defence is likely to have a tangible, positive impact on the gender diversity of civilian airlines. Accordingly, this research is both timely and practical which adds further to the appeal of this particular topic as a field of inquiry. Beyond aviation, this research has led to the development of 'occupational feminism' and the FOI model, which also have potential application to a range of other non-traditional occupations, organisations and industries.

Academic contribution and significance of this study

There are many academic reasons why this research forms a significant contribution as a field of inquiry to the study of women in non-traditional employment. Piloting, in general, is an under-researched occupation within the literature addressing the barriers and challenges faced by women in non-traditional occupations. The gap in the literature is more like a gaping chasm, in contrast to the voluminous amount of literature encompassing other non-traditional fields, such as construction, engineering, information technology, the sciences and technical trades, while research targeting women in military aviation is even less evident.

Of the few sociological studies addressing the gendered nature of flying and piloting as a non-traditional occupation for women, even fewer consider the perspectives of *military* women pilots. Mitchell et al. (2005) noted their research team's inability to access military pilots for the purposes of their cross-national study of flying. It seems that militaries are highly distrustful of 'outsider' research. My 'insider' access to military pilots enables the experiences of women military pilots to be captured and documented for the first time within an Australian context. This was an enticing prospect for a researcher seeking to make an original contribution to the academic field of women in non-traditional employment. As such, this research builds on and adds to the small extant pool of research into flying as a non-traditional occupation, which includes studies by Davey and Davidson (2000), Neal-Smith and Cockburn (2009), Vermeulen and Mitchell (2007) and Vermeulen et al. (2009).

Further, as a case study of women in non–traditional employment, military pilots offer some valuable insights that are not limited to the military or flying. Women pilots in the military must negotiate their femininity through intertwined layers of hegemonic masculinity, an idealised form of masculinity which subordinates, or makes inferior, images of femininity or other masculinities (Connell, 2005). Militaries, by their very nature, are *highly gendered* in accordance with Acker's theoretical framework, where 'advantage and disadvantage, exploitation and control, action and emotion, meaning and identity are patterned through and in

terms of a distinction between male and female, masculine and feminine' (Acker, 1990:146). Radical feminist Enloe observes that 'the military, even more than other patriarchal institutions, is a male preserve, run by men and for men according to masculine ideas…' (1983:7). As such, a military institution creates an overarching masculinised construct in which women pilots must function.

While the military is generally known to be a deeply masculinised context, hegemonic masculinity has also been reported as *extreme* in both civil and Defence aviation constructs (Barrett, 1996; Mills, 1998; Mitchell et al., 2005). Women pilots' gender-based barriers and challenges are exacerbated in a culture where men actively seek to 'stave off the threat of feminization' (Ashcraft, 2005:84) to maintain the dominant culture of this 'bastion of masculinity' (Mitchell et al., 2005:43). This overt masculinity may have a military basis and stem from the elite 'Top Gun' image of military pilots who reek 'with self-confidence, privilege and the conviction that they are the best' (Kellner, 1995:77). The extreme hegemony found within both the military and aviation generally, means that military aviation is a particularly rich platform for research of this nature.

From my perspective, one of the most valuable contributions of this thesis is providing a platform for *military* women pilots, sometimes for the first time, to speak freely and safely, about the gender-based challenges they have encountered throughout their aviation careers. Military pilot's perspectives very rarely feature in research addressing flying as a gendered occupation or field of non-traditional employment. *Unexpected Turbulence* is the first interview-based, feminist study of military women pilots in Australia that enables women to share their stories *in their own voices*. Many of the interviewees expressed their appreciation for the opportunity to reflect on their experiences with an empathetic and informed listener. Like their sisters working in other non-traditional fields, women pilots have many stories to tell. This thesis captures only a small selection of the many rich narrative accounts shared by the seventy five pilots interviewed for this study.

This study's research design and theoretical framework also offer a point of difference between it and other research into non-traditional employment. Although feminist theory provides the overarching epistemological framework, the multifaceted nature of the research (and the desire to build implementable solutions on the basis of that research) necessitated the use of additional supporting theories to inform the examination of each entry/career-stage examined throughout this thesis. This approach presents a different theoretical construct for studies of this nature which may have a broader application to other studies examining barriers to diversity.

Beyond merely identifying the gender-based barriers and challenges faced by women pilots, *Unexpected Turbulence* shows how they can be transformed into practical organisational outcomes. Feminist theorists, such as Meyerson and Kolb (2000), Bierema (2002) and Howell et al. (2002), have implored feminists to move 'out of the armchair' (Meyerson and Kolb, 2000:553) by building bridges between theory, research and human resource development (HRD) practice. Their collective goal, in encouraging work of this nature, is to ensure research outcomes are translated into measures that will actively and tangibly improve the working lives of women. This thesis, by introducing occupational feminism and the FOI model, demonstrates how organisations and industries seeking to change the demographics of their workforces might proactively use targeted academic research to inform their endeavours.

Locating myself as the researcher

As part of rejecting the value-neutral position claimed by positivists, feminist researchers openly acknowledge that 'objectivity is limited by the researcher's situation' (Harding, 1993:51) and truly value-free science is impossible. Feminist researchers are therefore implored to make clear, from the outset, the values, beliefs, biases and experiences that that they bring to research (Harding, 1993; Sprague, 2005). Greed further contends that 'in the tradition of feminist research it is more acceptable, even obligatory, 'to leave the researcher in'' (1991:13). This brief biography and statement regarding my values and beliefs is included to

acknowledge my 'specific social position, biography and agenda' which enables me to 'see some things and makes me overlook or even be completely wrong on others' (Sprague, 2005:3).

At the time of writing, I am an Anglo-Saxon forty-five year old woman born to a working-class Australian family. My husband and I have two daughters, aged eleven and thirteen, who are the centre of our world. Motherhood has strengthened my desire to continue working to make the world a more equitable, limit-free place for women and girls.

Most of my adult life has been spent serving as an Officer in the Royal Australian Air Force. My academic and working background is primarily centred on organisational development, strategic human resource management, recruiting and education. I have been an active champion for women's rights throughout my career, which has led to my being appointed to positions such as Unit Equity Advisor and Service Women's Advisor. A personal desire to increase women's overall participation in the Air Force was a key motivator towards initially embarking on this research project. My current and most recent positions within Defence have each entailed progressing gender and other forms of diversity. Recent academic pursuits have been extremely complementary to my professional roles, with synergies that have benefited both this research and other professional achievements.

My own experiences as a woman in the ADF have been inordinately positive. Before commencing this research, I was quite naive about what working life was *really* like for ADF women working in non-traditional employment roles. This research has opened my eyes to the overwhelming challenges faced by some of my military peers and colleagues in their everyday working lives. This awakening has further fuelled my desire to help my own organisation (and others) to overcome some of the cultural and structural barriers highlighted throughout this thesis. I remain deeply committed to this cause.

Situating and contextualising the study

To fully appreciate the forthcoming analysis and discussion, readers require a rudimentary appreciation of past and current initiatives towards gender inclusion within the ADF. A basic appreciation of the contexts referenced throughout this thesis, civilian aviation, military aviation and the wider ADF, will help to situate the range of issues addressed throughout this study. This section provides a brief overview of some contextual information which is further extrapolated in future chapters, as appropriate.

From a civilian aviation perspective, in the vast and geographically isolated country of Australia, aviation is a highly visible and necessary industry, with citizens depending on pilots for numerous aspects of their daily lives. From cattle mustering to crop dusting, facilitating interstate visits to grandparents, delivering school supplies and flying medical services, pilots are an integral part of Australian life. Aviation in Australia can be broadly grouped into three major areas: Defence; commercial; and General, the meanings of which are explained in forthcoming paragraphs.

With regard to commercial airlines, Virgin Australia and Qantas are the two major domestic and international carriers in Australia, with a number of smaller airlines servicing regional and/or remote areas. Several international airlines also fly limited numbers of routes, with Melbourne and Sydney considered the major international hubs. Although more senior, experienced pilots in Australia generally prefer to fly short-haul domestic routes, most pilots commence their commercial careers either with regional airlines or flying long-haul international routes with Virgin or Qantas. Domestic commercial positions are hotly contested by Australian pilots.

From a Defence perspective, while all three arms of the ADF, the Navy, Army and Air Force, have aviation components, the Air Force is the primary employer of pilots. Both the Navy and Army conduct rotary-wing operations (helicopters) in support of their respective primary roles of sea and land warfare while Air Force pilots fly a wide range of different aircraft types, each with a distinct role in

providing air power capability. Current Air Force platforms encompass large, medium and small transport/cargo, fighters, maritime patrol, refuelling/multi-role tankers and airborne early warning and combat. The Air Force, as the primary Service delivering air power, is responsible for the majority of pilot selection and training processes for all three Services.

Within the broader Defence organisation, there have been recent interventions and activities pertaining to gender that intersect some of the research outcomes detailed in this thesis. Understanding these interventions is necessary to differentiate between the practical reform processes generated by this research and those targeting the wider ADF.

From a historical perspective, women have been actively contributing to Australian Defence Force (ADF) operations, to varying degrees, since May 1899, when they were first employed in health support roles in the Army Nursing Service (Bassett, 2001). Since the late 1800s, women have continued to gain increased stature within the Australian Services. Today, women actively participate in ninety per cent of all ADF occupational employment streams[7]. That said, while women currently represent 46 per cent of Australia's workforce[8], they comprise only fourteen per cent of uniformed ADF personnel (AHRC, 2012); this figure has remained somewhat static over the past few decades. Pre-2013 efforts to increase women's overall participation in the ADF have, to date, been largely unsuccessful.

After many years of half-hearted efforts to increase women's uniformed representation (Burton, 1996; AHRC 2012), the ADF has recently begun a noticeable period of activity targeting women's recruitment and retention. This has arguably stemmed from one particular event in 2010, which is colloquially known as 'the Skype incident'. The incident entailed an ADF Academy (ADFA) cadet, 'Kate',[9] having

[7] Based on Defence workforce data, accessed June 2013

[8] Based on data accessed from the Australian Bureau of Statistics Database; 4125.0 Gender Indicators, 2013

[9] 'Kate' is a media-generated pseudonym

consensual sexual intercourse with another first-year cadet, which was live-streamed via Skype to a nearby room. This footage was watched by a number of men cadets, allegedly without Kate's consent or knowledge.

When Kate became aware of the Skype streaming, she allegedly reported it to the hierarchy but felt dissatisfied by ADFA's management of her case. Prompted by a perceived lack of action, she elected to share her experiences with a member of the Australian media (Wadham, 2012). The subsequent public outcry garnered ongoing political and media attention which has resulted in several major outcomes of relevance to this research project. Firstly, a number of past victims of sexual offences felt sufficiently empowered by Kate's actions to report incidents of their own abuse to a legal firm tasked with initially reviewing ADF sexual abuse cases. The large volume of complaints prompted the establishment of formal inquiry and taskforce processes which remain ongoing today.

The then-Defence Minister and Chief of the Defence Force (CDF) also invited Australia's Sex Discrimination Commissioner, Elizabeth Broderick, to facilitate two large-scale reviews into the treatment of women in the ADF. The first focused on the treatment of women at ADFA (AHRC, 2011) and the second addressed gender inclusion in the wider Defence Force (AHRC, 2012). These reviews created substantial movement in the ADF's cultural reform space, providing tangible impetus to addressing the numerous issues raised in the AHRC's reports.

In my professional Air Force capacity, I worked closely with the AHRC team during various stages of their second review. As the Director of Workforce Diversity in the Air Force at the time, I was one of the Air Force's primary contacts for liaison with the AHRC team. This role enabled me to share some of my perspectives and ideas for cultural reform directly with the AHRC, especially in relation to women working outside the more feminised ADF professions. My research, although specific to pilots, afforded some insights into the barriers and challenges faced by women working in other non-traditional employment fields within the ADF.

While ethical considerations precluded my ability to provide the AHRC with raw interview data, I actively encouraged a number of ADF pilot interviewees to make contact with the AHRC review team. I felt it was critical that women shared their experiences with an agency powerful enough to invoke positive change. Data drawn from their discussions with pilots and other women in non-traditional occupations had a tangible impact on the AHRC reviews' outcomes and recommendations, as evidenced within the 2012 report.

My research and work with the AHRC ultimately led to my being selected as the Project Director responsible for implementing the AHRC review recommendations across the ADF. This role entailed conceptualising and coordinating Defence-wide agreement to a range of organisational interventions to both increase women's representation in the ADF and improve their workplace experiences. This role has been a great privilege and an opportunity to breathe life into some of the interventionist ideas formulated earlier in my research journey.

Research boundaries and limitations

The discussion of gender-based barriers to women in non-traditional employment lends itself to numerous approaches, theoretical positioning and peripheral issues. However, in a word-limited document, it is impossible to encompass every aspect of a research problem. Accordingly, this thesis has a range of boundaries and limitations which ensured that the scope of the research remained manageable and focused, as addressed in this section.

One key limitation is choosing not to include the examination of barriers for women pilots as they relate to race, class and sexuality. Some feminist researchers implore the consideration of such factors in all research of a feminist nature (Hesse-Biber & Yaiser, 2004; Weber, 2004). Other researchers have found that gender, race, class and sexuality may be problematic in aviation, observing that flying generally tends to be heavily dominated by middle class, white, heterosexual, men (Hansen & Oster, 1997). I have opted, however, to maintain the focus of this thesis on only the gender-based barriers and challenges experienced by women. Focusing only on

gender enabled a deeper analysis of this particular aspect of diversity in piloting. I am hopeful that the outcomes of this study will complement any future research encompassing additional, equally necessary aspects of diversity in Australian military and civil aviation.

Another potential limitation of this thesis is that the research findings were drawn only from interviews with women; men pilots were not formally interviewed for the purposes of this research. The primary reason for not encompassing men’s perspectives was the intent for *women* to describe their *own* journeys and reflections on how their gender has impacted on their own workplaces and lives. It would have been an entirely different study to ascertain men’s perceptions of the barriers and challenges faced by women pilots. Further, men’s perceptions of their feminine flying colleagues have already been explored, analysed and documented in a variety of academic studies (for example, Mills, 1998; Ashcraft, 2005; Mitchell et al., 20056; Kristovics et al., 2006) and popular discourse (for example, Goyer, 2010; PPRuNe, 2012). It is *women’s* voices that have tended to be neglected in these dialogues.

Books and articles generally discussing pilot sociology, history or other aviation issues tend to represent the dominant male-only world-view. Women pilot’s stories are often ignored or ‘glossed over’, as noted by Pateman (1997) and Nolen (2002). For these reasons, *Unexpected Turbulence* deliberately focuses on data generated from *women’s* perspectives, although there are some indications in the literature that men may also experience their own range of specific gender-based challenges and pressures (Barrett, 1996; Ashcraft, 2005; Bennett, S., 2006). For example, men unable to ‘perform masculinity’ in a manner deemed acceptable by other pilots may also struggle within such a hyper-masculine context. This thesis’ focus on women is not intended to diminish or negate the gender-based barriers experienced by men; it is just one perspective of a complex and multi-faceted issue.

It should be noted that while men were not formally interviewed for this study, numerous men, predominantly pilots in senior Defence leadership roles, played an

integral role in assisting with and supporting all aspects of the development of this thesis. Through my research travels, I encountered many men, pilots and non-pilots, in all aviation contexts, who are genuinely passionate about seeing greater numbers of women enter and remain in flying careers.

Another limitation of this research is the non-inclusion of barriers and challenges that are not gender-based. Including non-gender-based barriers would have made the scope of this research untenable and shifted its focus beyond a feminist research framework. To situate the barriers outlined in this thesis, it warrants mentioning that *all* pilots, Defence and civilian, face a multitude of challenges/barriers through different career and life stages. For example, the high cost of flying training is a barrier that affects many trainee civilian pilots, irrespective of gender (Commonwealth of Australia National Aviation Policy Green Paper, 2008).

Civilian pilots also face practical hardships in their early flying years, which may include poor pay, a lack of available flying positions and, sometimes, having to undertake high-risk and/or remote flying roles to gain the flying hours necessary to progress into the commercial airlines (Marchbank, 2008; Bamber et al., 2009). Even after being accepted by an airline, civilian pilots continue to face challenges associated with a fickle aviation employment market that is highly susceptible to global financial conditions, international events and airline cost-cutting measures (Commonwealth of Australia National Aviation Policy Green Paper, 2008; Hannan, 2010; Macey, 2010; Thomson, 2010).

A pilot's lifestyle is another challenge as flying generally involves lengthy periods of time away from home, time-zone changes and irregular hours/shiftwork (Bennett, S., 2006). Irrespective of context, all pilots also face the challenge of having to maintain high levels of medical health, as there are some common medical and/or health issues that may result in a pilot being unable to enter or remain in a flying career.

Military pilots face a range of different challenges that are specific to Defence aviation. A major barrier for military pilot candidates is the highly competitive nature of entry to ADF flying careers and the difficulty of passing ADF flying training (which has a course failure rate of 30 – 50 per cent[10]). Even after passing pilots' course, there are challenges bourn from unplanned and responsive nature of military tasks, frequent postings to different geographical locations and a lack of local family support (especially after having children). While these challenges may appear to be 'gender-neutral', the degree to which they impact on ADF men and women differently is further explored through the analysis and discussion in this thesis.

Assumptions

Unexpected Turbulence is based on two key assumptions regarding women's low representation in military flying that are significant to the research aim and theoretical position. The first is that women's low representation in flying cannot be attributed to a lack of time. Women have been flying in various aviation fields since 1908 (Lewis, 2004), only a few years after the Wright Brothers first took to the air in 1903. Throughout the last century, women aviators entered the public consciousness through the achievements of renowned aviatrixes, such as Amelia Earhart, Amy Johnson and Jacqueline Cochrane, and in Australia, Nancy Bird (later, Nancy Bird Walton).

In Australia, as in many countries, women were once restricted from entering civil and military aviation flying careers. However, any remaining impediments to their full access to flying roles in all contexts were removed more than two decades ago. Australia's first woman commercial pilot (Deborah Wardley) was hired in 1980 and the Australian Air Force graduated their first two women pilots (Robyn Williams and Deborah Hicks) in 1988 (Arnold, 2010). As over twenty-five years have passed since the removal of any formal barriers, this research assumes that women's under-representation in military and civil flying cannot be attributed purely to timing.

[10] Based on course failure-rate data provided by ADF flying training staff, 2012

The second assumption is that women's low representation is not attributable to their inferior flying skills. The myth that women are somehow less innately capable of, or less physiologically/psychologically suitable for, flying in the military has been rigorously debunked through past studies. Research spanning a range of different aviation contexts has uncovered only negligible differences in flying ability/aptitude between men and women pilots (see Vail & Ekman, 1986; Caldwell & Caldwell, 1996; McFadden, 1996; McGlohn et al., 1996, 1997; King et al., 1997; Caldwell & LeDuc, 1998; Smart, 1998).

In fact, research into flight safety and human factors in aviation actually suggests that women pilots may offer some advantages over their male counterparts, especially in the areas of safety, appropriate caution and more inclusive decision-making processes (Vail & Ekman, 1986; McFadden, 1996). The literature has not provided evidence of any skill-based factors likely to impede women's entry and progress in military aviation, which indicates that there must be other explanations for their ongoing under-representation.

Writing style and voice

One of the key decisions made by all authors is determining a narrative style that maximises meaning and accessibility as 'finding one's voice' is a crucial process of their research and writing' (Reinharz, 1992:16). One of the challenges of finding an appropriate 'voice' for this thesis was the varied nature of its intended audience which potentially includes military officers, examiners, pilots and, hopefully, other (feminist) researchers.

This thesis was always intended to be accessible beyond academia, channelling the beliefs of feminist luminary Gloria Steinem who held the view that 'knowledge that is not accessible is not helpful' (Steinem, quoted in Denes, 2005). Noting the variety in the intended audience of this document, terminology, theories and language that might be unfamiliar to non-academic readers are explained where possible. Specific definitions of flying, and military jargon and acronyms are included in the glossary

to assist readers from non-aviation and/or non-military backgrounds. Commonly used terms and abbreviations are explained in full the first time they are used within each chapter and then subsequently abbreviated.

An active voice in the first person is used throughout this thesis ('I' and 'my'). An active voice is strongly encouraged within feminist research because the passive voice 'does not just hide the agency of the researcher; explanations in the passive voice hide social power' (Sprague, 2005:24). Sprague further contends that a passive voice helps to hide the researcher in the text by encouraging readers 'not to think and feel' (2005:24). Feminist writers use an active voice to challenge traditional positivist academic authority, which prefers 'emotional flatness', disinterested discourse and 'discredits speakers who show feelings like caring, anger or outrage' (Sprague, 2005:23).

Sprague's perspective resonates with my own views on feminist authorship. The methodology adopted for this thesis and the highly personal nature of the information disclosed through the interview process would not fit within a clinical, impersonal narrative. Using an active voice locates my position as a 'situated knower' within a feminist epistemological framework.

Terminologies and conventions

The term 'non-traditional employment' is used extensively throughout this thesis. Bagilhole describes non-traditional employment as 'any occupation which is, or has been, traditionally undertaken by a man' (2002:3). When defining 'non-traditional' from a numerical representational perspective, different theories attribute different ratios ranging from 25 – 30 per cent or less participation by one gender. As women's representation is less than six per cent in *all* Australian aviation contexts, the occupation of pilot is 'non-traditional', by any definition of the term.

When describing the particular aviation context under investigation, pilots working for the Navy, Army or Air Force in Australia are described interchangeably in this thesis as Defence, military or ADF pilots. Where denoting their particular Service is

necessary, they are referred to specifically by that Service, for example, ‘Air Force pilots’. To avoid any confusion, all non-military pilots are referred to as ‘civilian pilots’, irrespective of the type of aviation field in which they are engaged. For the purpose of this thesis, ‘civil aviation’ refers broadly to all flying agencies and organisations outside those of Defence.

Quotes of civilian pilots are used within the analysis and discussion in this thesis, primarily to highlight some of the differences between the various aviation pathways. Civilian aviation can encompass many different types of aviation organisations and, where relevant, the quotes identify pilots’ aviation organisation at the time of our interview. Commercial pilots are those ‘licensed to carry passengers or cargo for compensation or hire under certain conditions’ (Kumar et al., 2004:162).

The term ‘general aviation’ (GA) is used differently in certain countries, but for the purpose of this thesis, ‘general aviation’ comprises any aviation context that is not considered either Defence or commercial. GA encompasses ‘charter operators, aeromedical operators’ … ‘fire-fighting services, training’ and ‘private, business, recreational and sports’ (General Aviation Action Agenda Secretariat, 2007: foreword). All pilots undergoing flying training at the time of our interview, military or civilian, are identified in the quotes as ‘students’ or ‘trainees’.

From a terminology perspective, although ‘female pilot’ seems to sound more correct than ‘woman pilot’, the latter is preferred by feminist researchers. ‘Girl’ appears to be the acceptable noun when referring to young or adolescent female people. During our interactions, a number of interviewees expressed their dissatisfaction with having their gender highlighted through the use of gendered terminologies, such as ‘lady pilots’, ‘women pilots’ or ‘female pilots’. This is because women pilots, like their engineering and science colleagues, simply want to be referred to as pilots, engineers and scientists, without patronising gender references. Unfortunately gender references are patently unavoidable in a study about gender and flying. I apologise to pilot readers of the feminine persuasion for

the numerous unavoidable references made to 'women pilots' throughout this thesis.

Thesis overview

The remainder of this thesis is structured as follows.

Chapter Two situates the research by providing a brief overview of its key theoretical considerations and relevant literature insights. Any gaps in the literature briefly identified in this chapter are further explored in greater depth, especially those pertaining to flying in the military as a field of non-traditional employment for women.

Chapter Three provides a detailed description and justification of the methodology used to develop all stages of this research. It also discusses the features, benefits and disadvantages of the qualitative feminist methodology selected for the empirical contributions of this thesis.

Chapter Four examines a range of barriers and challenges impacting on the ADF's ability to recruit women pilots, as well as possible opportunities for mitigating the barriers and challenges in future.

Chapter Five addresses the barriers that impact on women's recruitment, selection and entry to ADF flying roles. This discussion also encompasses the numerous barriers that prevent higher numbers of women from succeeding through the military aviation training pipeline.

Chapter Six explores in depth the organisational culture of military aviation by using Kanter's (1977) 'token' theory as a framework for discussion and analysis. This chapter addresses the impact that military aviation culture has on a woman's ability to 'survive and thrive' in the deeply masculinised world of ADF pilots.

Chapter Seven analyses the barriers impacting on the progression and retention of women pilots, with a particular focus on those occurring during key life stages such as motherhood.

Chapter Eight explores the comprehensive nature of the changes that have been introduced within Defence (in a large part in response to the findings of this research) and situates and analyses those practical human resource interventions within an occupational feminism framework. It also addresses the potential

appropriateness of occupational feminism and the applied FOI model to guide gender reform in other areas of non-traditional employment.

Chapter Nine draws together the key points from the preceding chapters and relates this study’s findings to broader academic theory. This concluding chapter also examines the way forward in building gender and other forms of diversity in occupations and organisations.

CHAPTER TWO – PREPARING FOR TAKE-OFF

THEORETICAL AND CONTEXTUAL CONSIDERATIONS

CHAPTER TWO – PREPARING FOR TAKE-OFF: THEORETICAL AND CONTEXTUAL CONSIDERATIONS

Introduction

> *'… when you turn the tube [of a kaleidoscope] ….different lenses come into play and the combinations of colour and shape shift from one pattern to another. In a similar way, we can see social theory as a sort of kaleidoscope – by shifting theoretical perspective the world under investigation also changes shape'. (O'Brien, 1993:10-11)*

O'Brien's (1993) description of the changing lenses of a kaleidoscope and how they impact on the image viewed is useful to illustrating the trans-disciplinary theoretical framework used for this research. Gender and military aviation, as fields of inquiry, might be viewed through a kaleidoscope of inter-changeable theoretical lenses located across a range of academic disciplines. These include, but are not limited to, business/human resource development, sociology, psychology, gender studies and aviation studies more generally.

In her feminist thesis discussing the inequalities and barriers impeding Australian Defence Force (ADF) women peacekeepers, Bridges notes that 'locking into a single theory can be restrictive' (2005:21) and observes the limitations of viewing a problem through just one theoretical lens. Her research provides a compelling argument in favour of using a more trans-disciplinary theoretical approach to feminist research to ensure a deeper understanding of the phenomena under investigation. Drawing on Bridge's example, this research does not lock into a single theory, academic discipline or literature focus but, rather, draws on aspects of various theories and literature to develop a framework that best facilitates an understanding and development of the question under consideration.

Feminism, as it applies to the study of women in non-traditional employment, is the primary overarching theoretical framework on which this thesis is based. Within that framework, there are a range of perspectives, across different academic disciplines that complement and support the feminist positioning of the research. This research project is broad and multi-faceted, as it encompasses barriers and challenges encountered across the spectrum of a pilot's career and life stages. As a diverse range of literature is necessary to understanding a specific topic, each chapter includes a brief review of the relevant theory to provide a framework for the impending analysis and discussion. Therefore, this chapter focuses on only the *overarching theory* and literature relevant to the thesis as a whole.

Theoretical Considerations

In examining the challenges and barriers facing women in non-traditional employment and how they might be addressed, it is critical that the analysis reflects the most appropriate framework for assessing them. During the early stages of this research, when deciding on a primary theoretical position, my only criterion was 'anything but feminism'. I wanted this study to be supported by the Defence hierarchy but, as you may imagine, feminism is not a wildly popular concept within the deeply masculine culture of Defence. After many years of service within Defence, I too had adopted a view shared by many senior Defence women that there is no place in the military for 'the f word' (feminism). I have lost count of the number of times I have heard senior Air Force women profess that 'Look, I am not a feminist, but …'. Over the years, perhaps through osmosis, I too found myself actively denying my feminist leanings.

The great irony is that my bookshelf has always been filled with popular works by widely read, iconic feminists, such as Naomi Wolf, Germaine Greer, Virginia Wolf, Judith Butler, Margaret Attwood and Susan Faludi. My Air Force performance appraisals have always contained comments such as 'Dee has been an active champion for female cadets' and 'she has proactively supported gender diversity in the organisation', so it is quite difficult to understand how or when my openly identifying as a feminist became so untenable.

While the majority of the literature used during the early stages of my research was clearly feminist, I still sought to avoid using a feminist perspective. My original intent was to draw on organisational systems theories (for example, Robbins & Barnwell, 1998; Harvey & Brown, 1992) to analyse the impact of organisational processes and policies on women pilots. As a systems theory approach is very clinical and rational, I felt it would be more readily acceptable to a military audience. However, from my very first fieldwork interviews, it became obvious that systems theory simply could not explain or capture the substantial array of gender-based cultural issues that were so clearly impeding ADF interviewees.

In hindsight, feminism is the *only* theoretical position which offers explanations for the many cultural and structural barriers impacting on ADF pilots; a fact which became increasingly apparent as my research progressed. From the outset, this research was borne from my desire to bring about positive change for Defence women. I sought to challenge and change the masculine organisational paradigms and structures so prevalent in my organisation. I wanted to create a platform for women's unheard voices to finally be heard. With those activist goals in mind, feminism was inarguably the most suitable theoretical positioning suitable for this research. Rediscovering my feminist identity and helping other Defence women to discover their own feminist leanings has been a gratifying aspect of delivering this thesis.

Positioning feminisms

As previously noted, this study is grounded in feminist sociology and was designed to accord with the founding principles of feminist research methodology further described below. In broad terms, feminist sociological research is an inquiry 'focused on agency, power relations, shifting positionalities, voice, individual experience and socially constructed knowledge' (Howell et al., 2002:113). Feminism can be broadly described as a theory, doctrine or perspective that 'attempts to describe women's oppression, to explain its causes and consequences and to prescribe strategies for women's liberation' (McLaren, 2002:5). At the 'most

simplistic level', a modern feminist is 'a person who seeks economic, social and political equality between the sexes' (Bierema, 2002:246).

Defining 'feminism' as both an academic discipline and theoretical orientation is increasingly complex as modern feminism (or feminisms) comprise very broad and, sometimes, contrasting spectra of views, positions and beliefs. Much of this is historically based as different movements or 'waves' of feminism sought to rectify perceived deficiencies of the previous wave (Freedman, 2007; Shaw & Lee, 2009). While feminist perspectives may differ and there is some 'disagreement concerning a specific definition' (Shaw & Lee, 2009:11), there are key beliefs which unite all feminists.

The first of these is the aim to eliminate the injustices and inequalities that impact on women's lives, and to seek 'human dignity and equality for all people, women and men' (Shaw & Lee, 2009:11). The second is that feminism is 'inclusive and affirming of women' … 'as a personal perspective as well as a political theory and social movement' (Shaw & Lee, 2009:11). A major premise of nearly all forms of feminism and feminist research is the underpinning commitment to bring about positive social change that benefits women (Shaw & Lee, 2009; Morawski, 1997).

To appreciate the feminist positioning of *Unexpected Turbulence*, a brief historical perspective is necessary. All forms of feminism are politically orientated, commencing with the first wave which began with suffrage in the nineteenth and twentieth centuries. Early feminism saw women advocating for improved working conditions, political empowerment and educational rights (Schneir, 1994). Although early feminists did not use the term 'feminism' to describe their activism, a more defined 'feminist movement' emerged as a second wave through the 1960s and 1970s (Gillis et al., 2004).

Simone de Beauvoir's social constructivist position that 'one is not born, but rather becomes a woman' (quoted in Bair, 1989: foreword to 1989 edition of de Beauvoir,

1949) was critical of feminist thought during this period. Friedan's (1963) call for women to challenge existing feminine conventions also formed the basis for much of the feminist theory developed through this period.

Second-wave feminism focused on the inequalities of laws and women's rights in the workplace, and also addressed cultural inequities, such as reproductive rights, sexual violence, sexuality, domestic labour, mothering and women's place within the family and society generally (Schneir, 1994; Gerhard, 2001; Gillis et al., 2004). The main forms of feminist theory emerging through the first and second waves of feminism were primarily liberal, radical and socialist/Marxist. Liberal feminism is based on the premise that, as women and men have similar skills and abilities, they have the same right to participate and be treated equally in the workforce (McLaren, 2002). One of its key goals is to gain equal access for women to traditionally male-dominated professions (Offen, 1988) which aligns with the intent of this thesis.

Radical feminism differs from liberal feminism in a fairly distinct way. Liberal feminists seek to work within the boundaries of current systems and bring about change through political, legislative and policy intervention. Radical feminists reject current systems, believing them to be fundamentally oppressive to women (Shaw & Lee, 2009). Shaw and Lee describe this philosophical clash rather succinctly: 'liberal feminists want a piece of the pie, radical feminists … want a whole new pie' (2009:11). Marxist feminism attributes women's oppression to capitalism, blaming private property ownership for the economic inequities that subordinate women (Cornish, 1976).

One of the primary criticisms of all second-wave feminist positions is their perceived focus on heterosexual middle-class white women and failure to address social issues pertaining to class, colour and sexuality. Thus, third-wave feminism (sometimes called post-feminism or post-structural feminism) began almost as a 'backlash' against the perceived non-inclusiveness of the second wave (Heyward &

Drake, 2003). It commenced in the late 1980s/early 1990s and draws on a post-structuralist interpretation of gender, power and sexuality whereby it emphasises individuality, personal empowerment and freedom of choice (McLaren, 2002; Gillis et al., 2004).

Post-structuralist feminism contends that attention must be paid to language and discourse which construct both subjects' positions and subjectivity (McLaren, 2002). This third wave has invoked a range of distinct *feminisms*, many of which build on the key foundations of the second wave's liberal, radical and Marxist agendas. These include (but are not limited to) eco, black, post-modern, individual, standpoint, cultural, critical theory and womanism, with each movement supporting feminism through philosophically differentiated political agendas and beliefs.

Although not yet widely accepted within academia, activists claim that there is an emerging 'fourth wave' of feminism that is 'a new kind of activism that's guided and sustained by spirituality' (Peay, 2009:703). Peay contends that this new feminist paradigm is based on 'a fusion of spirituality and social justice reminiscent of the American civil rights movement and Gandhi's call for non-violent change (2009:704). This burgeoning fourth-wave movement is supported by on-line activism, the global reach of technology and a renewed interest in women's rights and positions within third-world societies.

After consideration of the various feminisms and analysing their application to the research topic at hand, liberal feminism was selected as the primary theoretical position underpinning this research for a range of reasons. Bagilhole, in her analysis of women in four non-traditional occupations, noted that 'individualistic solutions that women have adopted in the past have been unsuccessful' (2002:193). She argues for 'the crucial assistance of positive action and targets from national legislation' to 'strategically transform organisational swamps' (2002:193).

She maintains that women's own agency, while significant, is simply not enough to transform the highly gendered nature of many occupations and organisations. A key argument of this research, based on Bagilhole's stance in relation to non-traditional employment, is that dramatically shifting organisational cultures and removing structural barriers to women's entry and progress in non-traditional areas requires targeted policy and legislative interventions. This position aligns with classical liberal feminism.

Another key liberal feminist position is that 'if women had greater representation, then gender bias in the paid workplace would be progressively eradicated' (Agostino, 2000:64). This position has relevance to this research in terms of implementing targeted legislative action to invoke widespread cultural reform (Tuttle, 1987). Liberal feminism supports legislative reform and the application of *affirmative action* to increase women's participation (Shaw & Lee, 2009). Although the term *affirmative action* seems to have been replaced in recent years with possibly less divisive terms, such as 'temporary special measures' (AHRC, 2012), this thesis presents a compelling argument for positive (affirmative) action to overcome the many barriers and challenges identified through this research. Once again this aligns with a liberal theoretical position.

Beyond Defence and looking at flying as a non-traditional role for women, researchers have called for increased numbers of women pilots in order to bring about positive change within aviation. Davey suggests that the airlines 'take active steps to encourage applications from women' (2004:644) to 'reduce the feelings of extreme isolation and improve levels of support' for women in piloting roles (2004:645). Mitchell et al. contend that 'when the size of the female cohort in flying reaches some 'critical mass', 'there will be more acceptance of females as professional pilots' (2005:58-59). Neal-Smith and Cockburn also strongly argue the case for increasing women pilot numbers to improve the overall culture within aviation (2009).

Critics of this 'critical mass' approach (or 'add women and stir' approach as it is colloquially referred to) argue that merely adding women, often through quotas and other forms of affirmative action, fails to challenge the power imbalances inherent in most male-dominated constructs (Rasmussen & Hapnes, 1991; Greed, 2000). I agree that *just* increasing the numbers of women, without any other intervention, is unlikely to eradicate the barriers and challenges faced by ADF women pilots. However, if the numbers are increased *in conjunction with* a range of other targeted interventions, this will benefit both individual women pilots and women pilots as a collective group.

At different stages of its development, this thesis also draws on aspects of standpoint and individual feminist positions. Other feminist theoretical perspectives were considered but rejected as unsuitable for fulfilling the overall aims of this research project. Radical feminists reject the notion of militaries as 'male institutions' and further object to women participating in military service (Enloe, 2000). Therefore, the radical perspective is philosophically in opposition to research which actively seeks to increase women's participation in the ADF.

The post-structural feminist perspective emphasises a non-unitary position and draws attention to individual differences associated with 'class, race, ethnicity and sexuality' (Agostino, 2000:80). Women pilots in the ADF are all individuals, with different backgrounds, experiences and perspectives. However, by the very nature of their roles and their extremely low representation, they do share perspectives and experiences that unite them as a group. It is these s*hared* experiences and perspectives that hold great importance when seeking to understand the barriers and challenges they face in the ADF.

Although post-structural feminism is helpful to theorising women's under-representation in ADF flying roles from an individual perspective, my view is that as an overarching theory for the purposes of this research, it perhaps does not adequately accommodate women pilots' voices as a *unified collective*. My belief is

that women pilots' *shared* perspectives, collective voice and sense of solidarity are necessary to create the impetus to change the extant paradigm.

Individual feminism also has some merit when considering barriers and challenges faced by women in non-traditional employment fields. Siegel, a proponent of equity/individual feminism, argues that 'feminism should no longer be about communal solutions to communal problems but individual solutions to individual problems' (2007:123). Individual feminists argue that legislative approaches, such as affirmative action, are unnecessary and that the focus should be on preparing/developing individual women to better succeed in work and life (Siegel, 2007). While individual feminism seems to sit in contrast to the liberal position, I believe elements of *both* are necessary to ensure enduring cultural reform.

While both focusing on and supporting individual women is absolutely critical, even the most supported, strong and well-intentioned women in non-traditional employment roles face structural barriers and cultural disadvantages. As Bagilhole observes, 'some women may be drawing on their own agency in an attempt to transform the local or meso situations of particular workplaces, but they have a hard and possibly impossible struggle' (2002:191). This thesis supports this theoretical position. The women pilots in this study do not lack individual agency; they are robust, highly capable, competitive and determined individuals who have managed to succeed in an environment that can only be described as hostile.

Unexpected Turbulence demonstrates that women's individual agency and personal power have not been effective in transforming the Defence aviation culture to render it more welcoming to them. Individual interventions, however well-intentioned, may be ineffective when women face an avalanche of deeply patriarchal, capitalistic power structures that impede their progress. Irrespective of how well they are individually supported and *armed*, women can only thrive in non-traditional occupations if the organisational culture is receptive to their entry and advancement.

Therefore, although individually based interventions may be necessary for helping women negotiate their femininity in deeply masculine military contexts, they must be actualised in conjunction with the targeted application of more communally based approaches. Accordingly, this thesis argues that there is a need for a *multi-pronged* approach that relies on and draws from a range of different feminist positions.

Epistemology, method and methodology

Although feminist theory was integral to all the stages of this research, it was particularly vital to the development of the research methodology. Feminist research is 'conducted by people, most of them women, who hold a feminist self-identity and consciously use a feminist perspective … they use research techniques to give a voice to women' (Neuman, 2006:102). Research which identifies as 'feminist' is highly flexible, employs a wide range of knowledge-creation strategies and can be interdisciplinary (Reinharz, 1992). A primary goal of all forms of feminist research is to improve the equality of men and women through advocacy and challenges to male dominance and patriarchy (McNabb, 2010). As such, feminist research is almost orientated towards improving the status of women (Eichler, 1997).

Some feminists, such as Harding (1987) and Letherby (2003), contend that there is actually no such thing as a 'feminist method' but, rather, that the method is purely an evidence-gathering technique which may be either pro- or non-feminist. While Letherby (2003) denies the existence of a feminist method per se, she acknowledges that it is the way the chosen method is used or applied that makes it *feminist.* Sprague's description of feminist methodology resonates: the 'terrain where philosophy and action meet, where the implications of what we believe for how we should precede get worked out' (2005:5).

Feminist philosophy, principles and ideals have underpinned all aspects of the methodology used for this project, from its broad epistemological stance and

decisions made regarding the collection of data, analysis and coding considerations, through to the choices made when drafting the final document. There are a range of critical considerations and beliefs that support pro-feminist epistemology and methodology, with perhaps the most significant being the underlying belief that gender differences are 'essentially cultural, rather than biological, bases' (Millet, 2000:28).

Feminists, in particular post-structural feminists, believe that 'categories and identities are socially constructed, rather than essential' (Davey, 2004:629). In her feminist analysis of the human factors that affect ab initio pilot training, Davey (2004) notes the significance of Foucault's (1977, 1979) theories for understanding the relationship among gender, power and the means by which 'knowledge, meaning, values and subjectivities' are 'socially constructed' (2004:629).

This research is based on the feminist perspective that gender is a primary category of experience and that 'understanding how things work is not enough — we need to take action to make the social world more equitable' (Sprague, 2005:3). Research categorised as 'feminist' must be 'research for action' and have an overarching intent to bring about positive change for women. From the outset, bringing about positive workplace change for women working in the non-traditional field of military aviation was a primary goal of this research project.

In discussing how epistemology is applied within feminist research, Sprague and Kobrynowicz state that an 'epistemology directs us in how to approach an understanding of a phenomenon' (2004:78). Although terminologies vary, an epistemology can be defined as a theory or philosophy of knowledge about who can know, what can be known and under what circumstances knowledge can be developed (Reinharz, 1992; Sprague, 2005).

Thinking epistemologically involves understanding the relationship between the knower and known, and appreciating how knowledge is constructed within the

research. A core belief that forms the basis of research that identifies as 'feminist' is that most science is based on a masculine view of the world and way of 'knowing' that omits, distorts and/or diminishes women's experiences (Oakley, 1974; Reinharz, 1992). Feminist research actively rejects the features of positivism by challenging the 'implicit male perspective of the dominant paradigms, ethnological structures and theoretical assumptions' (Bologh, 1984:388). As research that identifies as feminist always keeps gender at the heart of the inquiry (Reinharz, 1992) and places a central focus on women's experiences (Hesse-Biber & Leckenby, 2004); it is research *for* women rather than *about* women.

Practitioners of standpoint feminist epistemology contend that the positivist position and dominant conceptions of knowledge (attribution, acquisition and justification), methodology and objectivity are flawed. They maintain that positivist research serves to disadvantage women through a range of means, including (but not limited to) excluding women from the inquiry altogether, producing theories that misrepresent women or position them as inferior and/or rendering women and their voices 'invisible' (Reinharz, 1992; Sprague, 2005). Feminist theorists also claim that positivist research reinforces established gender hierarchies that disadvantage women and other groups, fail to acknowledge difference and are dismissive of 'women's ways of knowing' (Belenky, 1997; Reinharz, 1992; Sprague, 2005).

The standpoint feminist position was particularly influential when selecting a method for the empirical contribution of *Unexpected Turbulence.* As it contends that women are able to show and maintain their equality through their own actions and choices (Hoff Summers, 1994), it is based on the belief that feminist social research must be practised from the perspective of women as 'situated knowers'. This research makes women's voices and women's experiences central to developing an understanding of the world from the perspective of women; which is central to bringing about positive change for women, especially in organisations (Calvert & Ramsey, 1992).

Feminist research shows sensitivity 'to how relations of gender and power permeate all spheres of social life' (Neuman, 2006:103) by removing sexism from research assumptions, concepts and questions. Where traditional positivist research methods value 'objectivity' and oppose any form of emotional involvement by researchers, a feminist epistemology supports the opposite position (Reinharz, 1992). Much feminist research actively rejects this alleged 'objectivity' and openly encourages the development of personal, empathic connections between the researcher and those being researched (Reinharz, 1992). Greed (1991), in her feminist research on the non-traditional occupation of surveying, notes the importance of the researcher's emotional involvement in building the equal, mutual relationship so central to feminist epistemology.

Hesse-Biber and Leckenby (2004) argue that a feminist approach to knowledge-building recognises the essential importance of examining women's experiences, a principle underpinning this research project's method for deriving empirical data. *Unexpected Turbulence* focuses on *women's* experiences; it is their thoughts, words and voices that have driven every stage of this research project, from identifying their barriers and challenges to mitigating those barriers through targeted interventions. A key factor influencing the design of this study was the strong desire to provide a platform to enable women pilots to share their stories and experiences in their *own voices.*

Again, in contrast to traditional positivist research, feminist research values the feelings, emotions, beliefs and experiences that the researcher brings to the research, and encourages researchers to 'leave these in' (Reinharz, 1992). My strong desire to allow my own voice, experiences and feelings to remain within the research, particularly throughout the analysis and discussion stages, was a source of some discomfort to my more traditional (non-feminist) supervisor. He worked to reduce any perceived subjectivity and emotionality on my part while I persisted in making my own emotions, feelings and beliefs active components of my research.

Negotiating this minor tension resulted in a thesis with which we both felt comfortable.

That said, this thesis may appear too 'subjective' for non-feminist academic readers while feminist academics may feel the content is, at times, lacking in emotionality and personal insights. Seeking to achieve a blend between these two perspectives was perhaps a way of bridging the gap between informing future feminist studies (into non-traditional occupations) and maintaining the impact of the research for practical implementation within a traditionally strongly gendered organisation. I hope readers appreciate the complexity around achieving that balance.

This research was always intended to have practical outcomes that would both directly benefit ADF women and serve to remove some of the systemic gender biases prevalent within the military institution. Many of the studies of gender and organisations through the 1990s and early 2000s also sought to actively explore the systemic organisational biases impacting on women working in highly gendered organisational and societal contexts (for example, Acker, 1992; Britton, 2000; Martin & Collinson, 2002). However, 'there is little research or theory …. on how to use this work to change organizations in ways that will make them more gender equitable' (Meyerson & Kolb, 2000:553).

To rectify this oversight, feminist researchers, such as Meyerson and Kolb, implore researchers to 'move out of the armchair' and work towards developing theoretical frameworks that 'bridge the gap between feminist theory and practice' (2000:553). This position is supported by academic activists, such as Bierema (2002) and Howell et al. (2002), who also argue the case for a feminist approach to human resource development, with the goal of ensuring that feminist research findings can be translated into practical organisational outcomes to create what Chertos (1987) describes as 'usable research'.

Maguire et al. note the frustration experienced by 'many action-orientated feminist researchers' due to the 'lack of an articulated framework for translating feminist insights into concrete actions aimed at achieving social change' (2004:xii). This presents opportunities for researchers seeking to bring about positive organisational change to use feminist sociology to inform their quest. The intent, at all times throughout this research journey, was to heed feminist calls pleading for greater attention to be paid to building frameworks to bridge the gap between theory and practice. This has been achieved in this thesis through the introduction of 'occupational feminism' and Feminist Occupational Intervention (FOI), which is introduced in Chapter Eight.

As stated in Chapter One, *Unexpected Turbulence* is not 'action research' in the traditional sense in which interventions and feedback loops form the basis of the actual research framework (Reinharz, 1992). There is, however, an *action orientation.* This research demonstrates how sociologically orientated feminist research has and continues to be applied within the Air Force and the wider ADF to bring about positive change for women pilots entering and remaining in that occupational group. *Unexpected Turbulence* builds on the theoretical perspectives offered by other researchers to deliver the FOI model, which has been designed to shift the demography of non-traditional employment groups. I am hopeful that this framework will have a far broader practical application beyond the realm of the military and the occupation of pilot.

Theoretical perspectives on gender-segregated occupations

Theoretical insights relevant to explaining gender-segregated occupations are necessary to appreciate the case of women pilots in the ADF. Women's under-representation in ADF flying roles is not a unique phenomenon. There is extensive literature offering explanations for the enduring worldwide, occupational segregation which exists 'in every region, at all economic development levels, under all political systems and in diverse religions' (Anker, 1997:315).

Anker (1997) argues that there are numerous benefits associated with redressing the balance between gender and occupation. He specifically notes that 'excluding a majority of workers from a majority of occupations is 'wasteful of human resources, increases labour market inflexibility, and reduces an economy's ability to adjust to change' (Anker, 1997:315). Occupational segregation also has a disproportionately negative effect on women as highly feminised occupations generally tend to be devalued by society both financially and culturally.

Padavic and Reskin observe that 'the more women in a job, the less both its male and female incumbents earn' (2002:140). They further contend that the feminisation of a profession reduces the profession's cultural status and social standing (Padavic & Reskin, 2002). Occupational segregation by sex has been cited as contributing to the distinct income gap between men and women workers in Australia (Workplace Gender Equity Agency, 2013). Anker also believes that the 'persistence of gender stereotypes has a negative effect on education and training and thus causes gender-based inequalities to be perpetuated into future generations' (Anker, 1997:315).

From an international perspective, it seems that Australia is particularly problematic in terms of occupational segregation by gender as it has one of the highest rates of occupational sex segregation in the world (Karmel & MacLachlan, 1988; Rawstron, 2012). Australian men and women seem wedded to traditional occupations, with very little change in the gender profile of occupations over the past century of employment (Rawston, 2012).

In Australia, women currently comprise over sixty per cent of workers in just the three occupations of clerical/administrative, community and personal service, and sales (Workplace Gender Equity Agency, 2013). Australian men are also over-represented in roles that 'traditional' for them. These occupations tend to be technical and/or labour-intensive roles, with men comprising sixty per cent of workers in occupations such as machinery operators, drivers, technicians, trade

workers and labourers (Workplace Gender Equity Agency, 2013). This extreme degree of occupational segregation in Australia suggests that attracting higher numbers of women into non-traditional fields such as flying will be challenging.

As previously stated, there is minimal explicit literature that postulates the reasons for flying remaining such a gender-segregated field of employment for women, both domestically and worldwide. However, theories relating to occupational segregation by sex (Anker, 1997; Reskin & Roos, 1990; Bagilhole, 2002) illuminate the issue by offering broader possible explanations for the various barriers and challenges likely to be experienced by women pilots in the ADF. The primary theories are analysed in the next section to assess their possible usefulness to explaining women's under-representation in flying.

When seeking to explain occupational segregation by sex, theorists 'usually distinguish between labour supply and labour demand factors' (Anker, 1997:316). This supply/demand pluralism has also been described by other theorists as 'choice versus power' (Bagilhole, 2002). Although their terminologies differ, these theories are based on the same premise. 'Supply' (choice) theories maintain that women *prefer* to work in certain types of occupations. 'Demand' (power) theories focus on why *employers/industries* stream women and men into different employment roles and/or limit women's access to certain occupations. To provide a complete picture of the barriers and challenges faced by women pilots in the ADF, both supply and demand factors are considered through this research.

Supply-based theories argue that women choose, for a variety of reasons, to pursue more traditional employment roles. Bourne and Özbilgin, for example, note that 'gendered career choice is one of the root causes of persistent gender inequalities at work and in life' (2008:320). Researchers exploring the issue of women's under-representation in other non-traditional fields have found a direct link between women's and girls' unwillingness to pursue certain careers and the permanently low numbers of women entering those professions (Whittock, 2000; Andrew, 2009).

Women and girls today may explore a wider range of career choices than they may have in the past (Francis, 2002). However it appears that 'gender, rather than ability, is still playing a large part in students' choices of occupation and by implication, their future life paths' (Francis, 2002:86). A range of different theories have been offered to explain the gendered nature of girls' occupational choices. Gottfredson (1981, 2002), a vocational choice theorist, attributes gender-based choices to a complex iterative process whereby children gradually eliminate occupations during their different developmental stages.

Her theory of 'conscription and compromise' suggests that children gradually integrate information about the ability required to perform a job, the status of that job and the people (men or women) who normally do it. This information is synthesised and processed through different ages and stages of childhood, eventually resulting in children/teenagers 'ruling out' any job they deem unsuitable on the basis of their world view (Gottfredson, 2002). Gender plays a critical part in these occupational decisions, with women eliminating occupations that are not deemed 'gender appropriate' throughout this iterative process (Gadassi & Gati, 2009). For pilots, this theory would indicate that girls may rule out flying as being 'gender inappropriate' as early as their primary school years.

The Social Cognitive Career Development Theory explains gender-based occupational segregation somewhat differently. This theory is grounded in Bandura's (1977) seminal 'Social Cognitive Theory', which emphasises the relationship between self-efficacy or self-belief and an individual's willingness to undertake a task. Bandura's theory is based on the premise that 'personal agency' is a key factor influencing an individual's career choice. Supporters of this theory, such as Lent et al. (2000, 2002), contend that personal agency and 'self-efficacy' can be influenced by a range of factors observed through everyday life, including interactions with others, observations of the world, and influences of friends, family and media (Lent et al., 2000).

For pilots, social cognitive theories suggest that girls might avoid flying careers because they lack self-efficacy and thus believe they are unlikely to succeed in that occupation. Other researchers have found this to be true in other non-traditional fields. For example, in their research on women in information technology, Michie and Nelson (2006) discovered that women have a reduced belief in their own ability to perform duties in technologically-based occupations even when they are academically competent in aligned subject areas.

Occupational sex stereotyping is another supply-side explanation for occupational segregation. This theory maintains that most people hold deeply felt stereotypes regarding certain occupations, including 'the personalities of people in those occupations, the work they do, the lives they lead … and the appropriateness of that work for different types of people' (Gottfredson, 2002:85). This theory suggests that gendered stereotypes, which are often formed as children, directly discourage women from entering certain professions (Archer & Lloyd, 2002). In their study of young people's career perceptions, Millward et al. found that 'the gender segregation in today's labour market' is 'perpetuated through young people's perceptions that certain jobs are more or less appropriate for them depending on whether they are male or female' (2006:10). Stereotype theories suggest that women may stereotype flying as a 'masculine' career requiring masculine characteristics and accordingly, not an appropriate occupational choice for them.

Also on the supply side, neo-classical/human capital theories 'assume labour markets operate in a non-discriminatory fashion, rewarding workers for their productivity' (Padavic & Reskin, 2002:51). These theories would suggest that women's minimal representation in flying is caused by their personal preferences for other, more traditional, occupations. Human capital theory postulates that women tend to seek employment roles that align with their family/career preferences and the degree to which they are prepared to invest in education and

training (Anker, 1997; Padavic & Reskin, 2002). These theories suggest that women actively avoid occupations such as piloting because they do not accord with their families' needs. Neo-classical/human capital theories further attribute women's unwillingness to pursue flying careers to a propensity towards more humanities-based school subjects that do not prepare them for technically orientated flying careers.

Aspects of gender-role socialisation theories also support 'supply' arguments for women's under-representation in non-traditional employment. These theories contend that women's reluctance to pursue flying may be attributable to their lifelong socialisation into traditional occupations that are deemed 'gender-appropriate' (Bagilhole, 2002). Eagly (1997) and Eagly & Wood (1999) maintain that, as women are predominantly engaged in nurturing roles inside the home and are consequently stereotyped by society as 'nurturers', they choose their careers accordingly. Gender-role socialisation theories support the view that the imbalance between men and women pilot numbers may stem from childhood during which girls are socialised into nurturer/carer roles while their brothers are encouraged to undertake more action-orientated and adventurous pursuits.

At the other end of the spectrum, demand or power theories are based on the premise that 'institutions … play an important role in determining who is hired, fired and promoted' (Anker, 1997:321). This position argues that women *may* seek non-traditional careers but are prevented from succeeding. The feminist position in relation to demand/power theories is that the structures, rules and selection criteria of male-dominated organisations are designed to accommodate the 'ideal' male worker (Bagilhole, 2002). Walby (1990) observes that patriarchal organisational functions are designed to actively accommodate men and/or passively thwart, impede and subordinate women's progress. Cockburn summarises the feminist perspective rather neatly, contending that 'behind occupational segregation is gender differentiation and behind that is male power' (1988:41).

Demand theories suggest that, even after entering a non-traditional field, women can be subsequently 'prevented from progressing in their careers in parity with men by the cultural environments they encounter' (Bagilhole, 2006:118). This is because, within patriarchal, male-dominated organisations, what is 'expected and needed for success is a career model based on men's experiences, needs and life-cycle patterns' (Bagilhole, 2006:115, paraphrasing Wajcman, 1998). Feminist demand theories, when applied to the case of ADF women pilots, suggest that women's low representation is borne from strong, gender-based organisational and institutionalised biases against their entry and progression.

While supporting supply-based explanations, occupational stereotyping is also used to support demand-based explanations for occupational segregation. Occupational stereotyping explanations support the contention that organisations are unwilling to hire workers deemed to be not 'gender-appropriate' according to societal norms (Anker, 1997, Padavic & Reskin, 2002). Seemingly in agreement with this particular theoretical explanation, Miller and Budd's (1999) study determined that 'airline pilot' was one of the most strongly gender-stereotyped jobs, alongside architect, secretary and hairdresser. Mills concurs with demand-based arguments by observing that the tightly held, stereotyped 'masculine' images of piloting and 'cultural rules about the ideal typical characteristic of the job holder' have 'contributed to the exclusion of women' from commercial aviation (1998:172).

Gender-based stereotypes pertaining to women's suitability for certain types of employment may also explain sex-based occupational segregation (Padavic & Reskin, 2002). Anker notes that there are five 'major negative stereotypes' about women generally: their disinclination to supervise others; low physical strength; lack of ability in the fields of science and mathematics; reduced willingness to travel and little inclination to face physical danger and use physical force (1997:327). Of note, three of these stereotypes seem pertinent to flying which requires a maths/science inclination, involves a high degree of travel and may be perceived to entail a higher level of danger. Physical force may also be considered an attribute

for military service. Accordingly, gender-based stereotypes may have some applicability to explaining women's low representation in flying.

Hakim's controversial preference theory (2000) was developed in response to perceived inadequacies of extant supply and demand theories offered to explain ongoing occupational segregation by gender. She maintains that women's comparative lack of success in the labour market is due to many of them preferring to raise children rather than participate in paid work. This theory implies that a military flying career may become untenable, due to women's preference for more nurturing, 'caring' careers. The theory implies that occupations like flying may become even less desirable once women pilots have children due to the requirements for a great deal of travel, lengthy absences from home and family and irregular working hours.

Irrespective of their different theoretical positions, occupational-segregation theorists seem united in their belief that no one theory offers a complete, inarguable explanation of the ongoing phenomenon of gendered occupations (Bagilhole, 2002; Padavic & Reskin, 2002). A cursory review of the theories offered regarding gender-segregated occupations indicates that supply *and* demand explanations may offer insights into the reasons behind women pilots' under-representation in both the ADF and aviation more broadly. Accordingly, to provide a complete account, theories addressing both supply and demand were considered throughout this research.

Gendered nature of military institutions

Examining the barriers and challenges faced by women in the wider Australian Defence Force (ADF) is necessary to understanding military aviation as a 'case' within the broader context. This section examines historical, cultural and contextual considerations relevant to the 'case' of women pilots in the Australian Defence Force. The ADF's organisational environment is complex; women entering the occupation of military pilot operate within three distinct layers of non-traditional employment: the broader ADF, their Service (Army, Navy or Air Force)

and the aviation culture within that Service. This section provides the background, context and relevant insights applicable to both the military and aviation-specific barriers addressed in this thesis.

With regard to an overarching philosophical stance, studies of the military as a gendered institution generally adopt one of three distinct positions regarding women's place. The first of these is strongly opposed to women in the military. One argument supporting this position is that women have no place in the 'manly' art of war and that women are physiologically and psychologically unsuited to the rigours and intent of combat. These studies also focus on the negative impact of women on morale, operational cohesion and overall effectiveness (Mitchell, 1998; Simons, 2001). Radical feminists, such as Enloe (1983, 2000), actively oppose 'the militarisation of women', believing the military to be harmful to women and societies more broadly.

The second position favours women's entry into the military, both philosophically and ideologically. Studies in this 'pro' camp critically analyse the cultural, structural and other barriers and challenges that impede women's progress into and success in the military. Many of the studies targeting barriers and challenges conclude by offering suggestions as to how they might be mitigated so that higher numbers of women might enter and remain in military careers (for example, DiSilverio, 2003; Evertson & Nesbitt, 2004; Solaro, 2006; Woodward & Winter, 2006).

The third position is neutral regarding women's place in the military; in these studies, the military is used merely as a 'case' or platform for a particular research subject (for example, Segal, 1995; Barrett, 1996; Hosking, 2003). Of these three different stances, this thesis is strongly aligned with the second 'pro' position, a distinction that is necessary to the analysis of the military as a gendered institution detailed in forthcoming paragraphs.

Beyond feminist theory, to examine the non-traditional employment role of pilot within a military construct, it is necessary to draw on the literature pertaining to both gendered institutions and occupations. Acker's understanding of gendered organisations is essential to this discussion. Her seminal theory, *Hierarchies, Jobs and Bodies: A Theory of Gendered Organizations* (Acker, 1990), was ground-breaking as it both builds on and challenges paradigms presented by luminaries such as Cockburn (1985, 1988) and Kanter (1977). A key premise outlined in Acker's (1990) theory is that jobs are not necessarily 'gendered' because men and women perform them but, rather, that gender is a socially constructed constitutive element in many modern organisations. This theory drew attention to the dearth of literature addressing the tangible linkages between feminist theories and the gendered construct of most modern organisations.

Acker's premise of the gendered organisation is that 'advantage and disadvantage, exploitation and control, actions and emotion, meaning and identity, are patterned through and in terms of a distinction between male and female, masculine and feminine' (Acker, 1990:146). She argues that, as 'the abstract worker is actually a man', women's bodies and bodily functions are treated as 'suspect, stigmatized and used as grounds for control and exclusion' (Acker, 1990:152). For this thesis, it is essential to appreciate the deeply patriarchal and highly masculinised military institution in which women pilots must operate.

The military institution has been described as 'the most prototypically masculine of all social institutions' (Segal, 1995:758). Militaries are also associated with extreme manifestations of 'hegemonic masculinity' (Enloe, 1983; Kronsell, 2005; Zeigler & Gunderson, 2005; Hinojosa, 2010), a gender practice which guarantees the dominant position of men and the subordination of women (Connell, 2005). This hegemony stems from an organisational construct whereby warrior men must prove their worth through violence and the domination of others, sometimes through sexual means (Schmid, 2010).

A number of theorists have highlighted the extreme nature of the military as a gendered institution; for example, Barrett (1996) writes of the 'othering' of women who challenge the dominant hegemony found in the US Navy, and of the tests women must endure to be accepted within that culture. Shaw and Lee observe that the military is 'a male dominated arena, not only in terms of actual personnel who serve but in terms of the ways it is founded upon so-called masculine traits' (Shaw & Lee, 2009:629), such as 'violence, aggression, hierarchy, competition and conflict' (2009:630).

In her study of gender in relation to militarism and peacekeeping, Whitworth postulates that women seeking to serve must 'self-consciously cultivate' the 'qualities demanded by militaries – the requisite lust for violence (when needed) and a corresponding willingness to subordinate oneself to hierarchy and authority' (2004:155). Cockburn also attributes men's ongoing resistance to women entering the domain of war to the idea that 'women by definition spoil the notion of the masculine military community whose raison d'etre is the protection of 'their' women and children' (2007:250). Combat roles are 'seen by some as a way for males to reaffirm their maleness' (Nemitschenko, 2001:38) and 'a validation of their own virility' (Campbell, 1993:322).

Women's entry into frontline combat roles creates a further 'challenge to the traditional image of the male warrior' (Barrett, 1996:133) and diminishes the 'manliness' of the activity (Campbell, 1993). The suitability of women to fulfil frontline 'warrior' roles within the military continues to be an oft-debated and contentious issue in political, sociological and academic circles. DeGroot observes, somewhat facetiously, that 'for men to dress wounds and peel potatoes seems an unnatural waste of male talent' (2001:32). As such, women have generally been welcomed into and accepted in supporting roles, such as nursing, administration and communications (Smith & McAllister, 1991), while their entry and integration into frontline combat roles has been far more divisive.

On an international and domestic level, debates still rage about women's physical and psychological capabilities to undertake combat. These arguments centre on women's impediment to male bonding, their hygiene issues and society's willingness to accept women soldiers' deaths and/or sexual abuse by enemy soldiers (Smith & McAllister, 1991; Segal, 1995; Nemitschenko, 2001; Youngman, 2000; Hosking, 2003; AHRC, 2012). The interest in women's ability to fulfil frontline combat 'warrior' roles has intensified as some countries, including Australia, have considered removing combat restrictions from women's service. Of note, Australia removed all remaining combat restrictions from frontline war-fighting roles in 2012. This was more than a decade after nations such as Canada, New Zealand and Denmark removed their restrictions but prior to other allied countries such as the United Kingdom (UK) and the United States of America (USA).

Women's challenge to the dominant hegemonic masculinity of the military institution has also featured heavily in recent discussions about the treatment of women in military service within Australia and beyond. Military culture can be unwelcoming and/or hostile towards women and this hostility can be manifested through insidious means. Media attention has recently been drawn to a spate of cases of sexual harassment, assault, bullying and other forms of abuse aimed at servicewomen, both locally and worldwide (Hankin et al., 1999; Schmid, 2010; AHRC, 2011, 2012).

The USA's military is known to be particularly problematic in terms of abuse towards military women (Hankin et al., 1999; Schmid, 2010). Schmid, for example, observes that 'United States' military women are more likely to be raped by a fellow military member than killed by enemy fire' (2010:475). Within Australia, as noted in Chapter One, the ADF has also been plagued by media coverage of 'sex scandals' which recently intensified following the ADFA's 'Skype incident'. The level of criminal behaviour by men towards their Servicewomen peers suggests a culture that remains so highly resistant to women's presence that men feel it necessary to actively thwart women's integration through sexual means.

That said, sexual harassment, assault and bullying in the military is not limited to women as many of the recently reported incidents have been male-on-male and occurred prior to women's entry into the ADF. As sexual predators are known to target those who may be vulnerable, military women may be more of a target because it 'is easier and safer to target individuals when they are in the minority rather than numerically dominant' (Chamberlain et al., 2008:285).

Chamberlain further contends that 'mutually supportive co-workers are less likely to prey on one another' (2008:268). Therefore, in non-traditional fields, military women's lack of social support and low numbers increases the likelihood of their suffering harassment and abuse. Cleveland and Kerst (1993) also found that women who are perceived to threaten men's masculinity are likely to incur higher levels of abuse. For these reasons, Nemitschenko (2001) believes that levels of sexual discrimination and harassment are more likely to increase as women make their way into previously restricted military combat roles, such as piloting.

Irrespective of focus, the literature overwhelmingly indicates that women's ongoing integration into the military remains problematic and fraught with continued controversy. It seems that Servicewomen still face cultural, traditional and institutional barriers to their full integration and progress. A very small number of studies have addressed these barriers within the ADF. The most relevant of these are Burton's (1996) study and a more recent report by the Australian Human Rights Commission (AHRC, 2012).

Although now quite dated, Burton's 1996 report, 'Women in the Australian Defence Force: Two Studies' (colloquially known as 'The Burton Report'), highlights issues starkly similar to those identified through more recent reviews. It paints a disturbing picture of an organisation in crisis in terms of gender inclusion and highlights numerous structural and cultural issues that are still being experienced by ADF women today. The AHRC (2012) report, which was produced in response to the

after-effects of the Skype incident, shows very similar findings to Burton's much earlier report. This perhaps indicates the ADF's past lack of action in addressing the issues detailed in Burton's insightful review.

Other studies of gender and the Australian military highlight a wide range of barriers facing women who seek to serve their country in the ADF. The literature shows that the barriers can be both structural and cultural in nature, and can impact on women in all career stages (Agostino, 2000; AHRC, 2012; Burton, 1996). The primary barriers and challenges faced by women at the point of entering the ADF include: a lack of interest in or unwillingness to pursue military careers (Manderson, 2000); barriers through recruiting and selection processes (Manderson, 2000; Smith, 2000; Harris, 2009); and training regimes that fail to accommodate the needs of women students (AHRC, 2012).

Regarding long-term retention, further barriers include rigid and inflexible career pathways that do not accommodate different life stages (Burton, 1996) and limited access to working models that consider women's needs (Burton, 1996, McConachie, 2000; AHRC, 2012). ADF women also face barriers and limitations to their progression and promotion (Goyne, 2008); each of which is explored through *Unexpected Turbulence.*

The literature encompassing all career stages indicates that many of the aforementioned gender-based barriers stem from the ADF's unwillingness to acknowledge and, where necessary, mitigate the differences that exist between men and women. In the ADF, as in most patriarchal organisations, there has been minimal 'recognition that women's work experience may be different to that of men's as a result of power relations that differentiate society at large' (Wilson, 1996:825). Within such deeply gendered institutions, the 'ideologies of difference which define us as men and women' (Wilson, 1996:825) can produce inequalities that tend to adversely and disproportionately impact on women.

To succeed within the military, all ADF women, irrespective of their employment field, must manage complex negotiations of femininity within a highly gendered environment. These negotiations are often conducted in isolation, without women peers, instructors, role models and/or mentors to offer guidance and support through their career journey (Burton, 1996; Bridges, 2005). While many resilient women have 'survived' and sometimes 'thrived' in Defence careers, survival can come at a high personal cost (Burton, 1996, AHRC, 2012). This study of women pilots in the military provides compelling evidence of the barriers and challenges faced by some military women, especially those in non-traditional fields.

Flying as non-traditional employment in civilian and military aviation

Flying is a field of non-traditional employment in both military and civilian aviation. Women pilots in the ADF, as previously noted, operate within three levels of organisational hierarchy and the literature suggests that a different range of gender-based barriers and challenges exist within each level. This section addresses those specific to aviation generally before exploring those evident within each Service.

Some theorists note the distinction between gendered occupations and the degree to which an occupation might be numerically dominated by either men or women. Britton, for example, notes that 'describing an occupation as feminized or masculinized, or more generically, as gendered, is not at all the same as noting that it is male or female dominated' (Britton, 2000:424). She suggests that it is necessary to differentiate between the sex composition and 'gender type' of particular organisations, noting that 'gender typing is the process through which occupations come to be seen as appropriate for workers with masculine or feminine characteristics' (2000:424). In the case of piloting, especially within the military, the occupation is *both* numerically male dominated as well as highly gendered as a 'masculine' profession.

From a numerical perspective, Hansen and Oster observe that 'aviation occupations, although changing, do not mirror the diversity of the overall American

workforce … pilots and senior managers continue to be predominantly white and male' (1997:4). Mitchell et al. note that 'there is little argument that female pilots are underrepresented in the aviation industry' (2005:44), both within and beyond Australia. The high degree of gender segregation has implications for the culture of aviation and treatment of women pilots working within that field.

In establishing the degree to which flying is a gendered occupation, the available literature is limited, especially compared with that relating to other non-traditional fields for women. Fields such as engineering (Gilbride et al., 1999; Powell et al., 2006; Kongar et al., 2009), technical trades (Bennett, A., 2006; Ericksen et al., 2009; Shewring, 2009; Denissen, 2010), construction (Gale, 1994; Bennett et al., 1999; Andrew, 2009; Fielden et al., 2009) and policing (Austin, 2000; Prokos & Padavic, 2002; Rabe-Hemp, 2008) have all received ample attention from academics. Women's roles and experiences in flying are, by comparison, under-researched.

This paucity of research might be explained by a number of factors. Firstly, most of the research into non-traditional professions tends to be conducted by women working in that occupation or a related industry (for example, Greed, 1991, 2000; Eisenberg, 1998 and Moccio, 2009). Until recently, all military and civilian pilots were primarily trained through non-university vocational/military channels. Without the necessary undergraduate qualifications, few pilots would be likely to proceed to post-graduate research where they might examine the gendered nature of their own profession. This may change as higher numbers of women pilots pursue flying careers through Bachelor of Aviation programs, especially within Australia. Of note, since the commencement of my doctorate, I have been contacted by at least five students pursuing research into flying as a non-traditional career.

Secondly, there has been little past incentive for industry or Defence to sponsor research into attracting 'untapped demographics' into piloting. Reskin and Roos (1990) theorised that the impetus for research on women's entry and progress into

specific occupations occurs only if there is a *shortage* of willing and available *men* to meet industry demands. As there has traditionally been an abundance of young men willing to fill military and civil aviation piloting roles (Hansen & Oster, 1997), until recently, research targeting women's entry into flying has not been a key consideration for the aviation industry or Defence. However, the expected worldwide pilot shortages over the next decade (Craver, 2007; Blakely 2008; Commonwealth of Australia, 2008) have invoked recent interest in attracting women into flying roles (Bennett, S., 2006; Morley, 2008; Foster, 2010). While women are viewed as an 'as yet untapped' source of future pilots (Turney, 2000, 2004a), there is little research available to support industry's quest to increase their numbers.

The limited literature available portrays an occupation and industry that is deeply gendered and dominated by highly masculine values and practices. Sociologically orientated studies addressing civilian aviation show that their organisational cultures can be highly problematic in terms of women's integration into piloting roles (Davey & Davidson, 2000; Davey, 2004; Neal-Smith & Cockburn, 2009).

Germain et al. further note that 'misogynistic behaviours are common in male-typed professions' (2012:444), and there is overwhelming evidence in the literature supporting this claim in relation to civilian aviation (Mitchell et al., 2005; Neal-Smith & Cockburn, 2009; Hynes & Puckett, 2011). Mitchell et al.'s (2005) cross-national study of pilot attitudes toward gender across the USA, Norway, South Africa and Australia located a wide spectrum of views pertaining to women pilots, some positive and some very negative. Aviation culture worldwide appears to be steeped in negative stereotypes and myths regarding women pilots.

Mitchell et al.'s (2005) study exposes the existence of patronising attitudes, hostile sexism and a widespread belief that women pilots receive special treatment and are 'less safe' than their male colleagues (Mitchell et al., 2005). Hynes and Puckett's study of women who had achieved captaincy in commercial aviation reported their

receiving 'ridicule, harassment, alienation, malicious comment from co-workers and passengers' and having to prove themselves capable of 'doing the job' (2011:5). Ashcraft, in her study of occupational identity within a commercial airline in the United Kingdom, found that commercial pilots apply a range of strategies to 'stave off the threat of feminization' (2005:84) in order to maintain the dominant masculine culture of their working environment. Despite women's increased presence in flying roles internationally, piloting appears to remain a 'bastion of masculinity' (Mitchell et al., 2005:43) steeped in highly masculinised values that serve to diminish and make women pilots 'other'.

A military perspective is unusual in studies of the gendered nature of flying. Such studies have generally been positivist and quantitative in nature, focused on detecting any gender differences in flying skills, physiology, aptitude and personality traits between women and men (McGlohn et al., 1996; King et al., 1997; Smart, 1998). This lack of academic oversight necessitates looking to non-academic sources to gain some understanding of the barriers women pilots may face within this context. However, although these sources, whether in the media or historical studies, contribute insights into gender and military aviation, the picture they present is mixed.

Media reflections and Defence-endorsed accounts tend to paint a glowingly positive picture of women's participation in military flying (Debenham & Stafford, 2001; Williams, 2003). For example, a recent US Air Force magazine editorial states that 'Women pilots who fly Air Force fighters and bombers have made their mark and earned respect' (Grant, 2002). Although Grant (2002) provides an overwhelmingly positive account of women's integration into military combat flying, popular or 'official' depictions sit in stark contrast to the far less cheerful accounts shared through women pilots' biographies (Flinn, 1997; Spears, 1998; Cummings, 1999).

Former US Air Force pilot Kelly Flinn's biography is described as a young woman's 'fight' to gain a place in 'a military establishment run by men, many of whom are

not yet ready to accept a female combat pilot' (1997: cover insert). US Navy pilot Hirshman's biography speaks of the distrust the US Navy has of women's ability to 'manage our own bodies' (Hirshman & Hirshman, 2000:81). She reflects further on the loneliness, lack of support and inability to integrate experienced by some of her Navy women peers, both pilots and non-pilots (Hirshman & Hirshman, 2000). The disparity between the different accounts makes it difficult to gain an accurate understanding of women's experiences in military aviation from the existing literature, especially within the Australian military.

While Mitchell et al.'s (2005) study did not include an Australian *military* perspective; it did find that 'gender was much more of an issue for Australian pilots' (2005:51) than their South African, American and Norwegian peers. A recent Australian newspaper article about Air Force women piloting the C17 Globemaster bore the headline 'RAAF Barbies Steal GI Joe's Big Toy' (Bedo, 2009:4), which suggests some less than progressive Australian societal attitudes towards women and military flying.

It is tempting to surmise, on the basis of past findings, that *all* aviation cultures, military and civilian, are equally dysfunctional in terms of gender integration. However, some theorists believe that the root cause of this dysfunction, irrespective of aviation context, has a military basis. Military aviation culture is often cited as a contributory factor to explaining civilian aviation's hyper-masculinity and culture of hegemony (Davey, 2004, Neal-Smith & Cockburn, 2009). Hansen and Oster further contend that the prevalence of men in key commercial aviation jobs is an enduring legacy of military culture 'which gave heavy emphasis to the masculine nature of flying' (1997:114).

Some researchers have even suggested that the highly masculine nature of commercial aviation can be attributed to the large numbers of military pilots who transition to that context and take their culture with them (Davey, 2004, Neal-Smith & Cockburn, 2009). On this basis, while civilian aviation may sometimes be

unwelcoming to women aviators, it might be assumed that women entering a *military aviation* culture are likely to experience similar, or *perhaps worse*, cultural barriers than their civilian pilot peers.

Women pilots in the ADF

When seeking to understand the barriers and challenges faced by women pilots within the ADF, the varying roles of pilots across the three different Australian Services; the Navy, Army and Air Force has some significance that will be explored here. While essential to military operations, Navy and Army rotary-wing pilots are *not* the *primary* war-fighters, as their roles are to *support* the sailors and soldiers delivering sea and ground. The war-fighter 'warriors' and primary deliverers of capability in those Services are, respectively, Principle Warfare Officers (PWOs) and Infantry Officers.

The Air Force also offers aviation platforms that fulfil operational support roles, such as surveillance, personnel and cargo transportation, and air-to-air refuelling. However, the elite and most prestigious aviation role within the Air Force is that of the fast-jet fighter pilot. In all Air Forces and other services with fighter capabilities, fast-jet pilots are the ultimate 'warriors', the elite of the elite, 'the most masculine and most prestigious' (Barrett, 1996:136) of all military flying roles. They are viewed as the most skilful of all pilots as only the most successful students through flying training have an option to be selected for this role.

The distinction between warrior and non-warrior pilots across the three Australian Services has implications for the findings of this thesis, especially in understanding the cultural and structural barriers faced by women pilots. On the basis of some of the arguments outlined in this chapter regarding the treatment of women 'warriors' and hegemonic masculinity more broadly, it seems likely that women pilots entering the Air Force flying culture may face more extensive cultural barriers than those undertaking supporting roles in the Navy and Army.

There seems to be a distinction in the ADF between women's opportunities to fly platforms in support of military operations versus the fast-jet 'warrior' platform, as noted in Chapter One. Perhaps tellingly, as previously observed, Australia has thus far failed to graduate a single woman fighter pilot despite women being permitted to fly fast jets since the early 1990s. Air Commodore Smart's 1998 prediction that the Australian Air Force's first female FA18 pilot was 'probably not far away' (1998:7) now seems somewhat optimistic. The previous Chief of the Air Force, then-Air Marshal Binskin, attributes Australia's lack of women fighter pilots to both overall recruiting application numbers and women *choosing* alternative flying pathways:

> *"Becoming a fast jet pilot is hard – for both men and women" because of the 500 pilot applications received by Defence Force Recruiting, only ten will successfully complete their training as fighter pilots … as the numbers of female pilots continue to increase, I would like to think that Air Force's first female fast jet pilot is not far away. Women are already flying fast jets in the United States, France, Turkey, and Israel to name a few; and in our Air Force we had recent female graduates from pilot training who were capable of flying fast jets, but who chose to fly other types of aircraft instead," (AFHQ, 2011).*

Although Air Marshal Binskin's (AFHQ, 2011) belief is situated within the supply-based arguments outlined in this chapter, history offers another possible explanation for Australian women's non-entry into the fast-jet realm. Australia has been slower than some allied countries to allow women access to all flying roles which possibly reflects a broader societal attitude permeating Australian culture with roots in World War II. Women in other countries, such as the United States of America (USA), Russia and the United Kingdom, were permitted to fly military aircraft in either direct or indirect support of their country's war efforts (Merryman, 1998; Noggle, 1994; Merry, 2011). Australian women pilots, however, were not permitted to contribute in this way. Mann notes that 'although qualified female

pilots volunteered their services to the war effort, their inclusion was steadfastly resisted' (1986:19).

Australian women pilots' inability to fly during the war is more disappointing because of the impressive war efforts of their aviatrix sisters in other countries. These women flew a full suite of combat and transport aircraft, conducted bombing missions, lost their lives and demonstrated incredible skill and manoeuvrability in the air (Hansen & Oster, 1997; Myles, 1987). However, despite proving themselves highly competent pilots and logging many flying hours, women pilots had to leave their flying careers once the war had concluded which reflected wider societal values regarding women's employment.

That said, post-war, both Russia and the USA removed bans preventing women from military piloting roles many years before Australia. Women pilots were accepted into the United States military flying roles thirteen years before Australia's bans were removed in 1987 and Russian women have been permitted to fly in military roles since the 1970s (Naughton, 2002). Women's World War II flying exploits may have been pivotal to those earlier decisions to remove barriers to women pilots and, since then, women's progress into military flying has been quite successful in other allied countries. Over the past fifteen years, the United Kingdom has graduated numerous fast-jet pilots, commencing with Jo Salter in the mid-1990s.

Women have excelled as military fighter pilots during operational combat (Grant, 2002; Barnett & Rivers, 2004), contributed as astronauts and test pilots (Pateman, 1997), achieved captaincy on nearly all military combat aircraft, and now comprise four per cent of the US Navy's Hornet (fast-jet) pilots and two per cent of the US Air Force's *fighter* pilots (Scarborough, 2013). Australia is an anomaly when examining women's entry into the fighter pilot role. As noted, there are a range of possible explanations as to why this might be the case. A relevant secondary question for this thesis is whether (apart from the more frequently offered explanations) women

may have been actively *prevented* from succeeding as fighter pilots, possibly to ensure the enduring primacy of that particular warrior role.

Conclusions

A range of theoretical perspectives and research contributions influenced the multifaceted, interdisciplinary framework used to construct this research which explores gender-based barriers and challenges faced by women pilots in the ADF. To develop this research, it was necessary to understand how gender is constructed in both the military and aviation in general. These perspectives helped to situate the empirical contribution of this research and allowed comparisons to be drawn among ADF aviation, civil aviation and other fields of non-traditional employment for women.

Liberal feminism's emphasis on legislative and policy-based reform to increase the numbers of women in non-traditional fields was deemed the feminist positioning most appropriate to this research. A combined liberal/standpoint perspective informed the development of all its stages, from selecting a methodology through to recommending practical interventions for increasing women's participation in ADF piloting. Women's experiences are central to the discussions and analyses in all stages of this research, a position that aligns with feminist standpoint epistemology.

Theories addressing ongoing occupational segregation by gender are useful for examining the problem of women's low representation in ADF flying roles. The applicability of these theories, in relation to the empirical data, is addressed through the results and discussion chapters of the thesis. A key contribution of this study is its demonstration of how to apply sociologically based feminist research to the development of interventionist human resource development policies, with the aim of shifting the demographics of a non-traditional occupation. Hopefully, the framework outlined in this thesis for bridging the gap between theory and practice will be applicable to other non-traditional occupations in contexts other than Defence and aviation.

As noted in the introductory chapter of this thesis, there are seemingly no physical, mental or skill-based reasons preventing higher numbers of women from entering and succeeding in ADF flying roles. This implies the existence of structural and cultural barriers which may sit across the supply/demand spectrum; these will be investigated through this thesis. Within the two broad areas of structural and cultural barriers, the literature highlights a wide range of considerations that relevant to explaining women’s low participation in non-traditional occupations. This includes women’s motivation to pursue non-traditional careers, barriers to their entry and in training, the impact of disproportionate caring responsibilities being placed on women and historical perspectives.

Each of these areas is explored in terms of women’s participation in military aviation in the analysis and discussion chapters of *Unexpected Turbulence*. This research examines the known barriers and challenges facing women in other non-traditional employment fields, including civilian aviation, to provide a complete explanation of the reason(s) for the numbers of women pilots in the ADF remaining so low. Only once these barriers and challenges are known can they be addressed in order to increase women’s representation in this non-traditional field.

CHAPTER THREE – METHODOLOGY

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Introduction

This chapter describes the methodology employed in *Unexpected Turbulence*. Observations, challenges, lessons learned and the emotional impact of the research are also described, primarily to 'set the scene' for the subsequent results, analysis and discussion chapters. Letherby contends that 'feminist research accounts acknowledge the 'messiness' of the research process and consider the detail of doing research and the relationship between this and the knowledge produced' (2003:6). Therefore, I have attempted to leave some of this 'messiness' in by detailing some of the dilemmas and problematic issues faced throughout the development of my research.

The methodology, as detailed in this chapter, encompasses an explanation of the methods used, why they were chosen and the underlying beliefs regarding knowledge that lead to their application. Also included are factors such as ethical considerations, practical aspects of the research and an analysis of the method's success in achieving the research aims. This chapter addresses any dilemmas faced as part of the research process and how data was produced, managed and presented (the 'findings').

Multiple methods were employed throughout this research. The primary empirical contribution draws on semi-structured interviews with seventy-five women pilots across a wide range of aviation contexts both within and external to Defence. Although focus groups were used to inform discussions regarding women's and girls' perceptions of flying (Chapter Four), as the data from them is not generalisable or conclusive, I decided to concentrate on the primary data-gathering method of semi-structured interviews. Coding and analysis were achieved using a 'blended' method entailing aspects of standard thematic analysis and grounded theory, with feminist research principles strictly adhered to through all research stages.

Feminist perspective

Feminist research is 'conducted by people, most of them women, who hold a feminist self-identity and consciously use a feminist perspective … they use research techniques to give a voice to women' (Neuman, 2006:102). A key factor influencing the design of this study was the *feminist perspective* and the strong desire to provide a platform to enable women pilots to share their stories and experiences in their *own voices*. The methodology for feminist research is built on the foundation of a feminist epistemology and comprises techniques for gathering data that are applied according to feminist research principles.

This research sought to contribute Australian military women pilots as a 'case' for ongoing theoretical debates about gendered occupations/organisations and the barriers faced by women who choose non-traditional careers. The second aim was to provide a research foundation for future strategies for enabling organisations to attract and retain higher numbers of women to non-traditional employment roles. These aims encapsulate the 'action-orientation' that influenced many of the methodological decisions discussed later. The intent, at all times, was to develop a usable thesis with tangible practical applications beyond the realms of academic theory.

The research questions that drove the key methodological decisions are detailed in Chapter One. They, together with the research aims, feminist framework and action-research orientation, collectively form the foundation of the methodology. Chapter Two contains the descriptions of feminism and what constitutes feminist epistemology, and the method and methodology which are important to a holistic understanding of this work.

Method

The data informing the research findings, analyses and discussions was drawn from a four-year multi-methodology research project. A range of data sources contributed to the development and delivery of this research project. Perhaps the most essential of these was an initial review of the academic literature. This review

encompassed a range of theoretical areas, including gendered organisations, occupational segregation by sex, flying as a field of non-traditional employment, historical perspectives of women in the military and aviation, the military as a gendered organisational construct and other studies of women in non-traditional employment.

Another source imperative to the research was a series of demographic data drawn from Defence’s personnel management system which provides current and historical pictures of women’s representation in flying and the ADF more broadly. From an empirical perspective, the primary data source used to develop this research was drawn from seventy-five, face-to-face, semi-structured interviews with women pilots, past, present and future, across a range of different aviation types. A secondary data source was focus groups which sought to contribute to the dialogue regarding women’s and girls’ perceptions of flying as a possible career choice.

Defence-generated studies helped to inform some aspects of this research. Of particular interest when examining barriers to entry was Defence Force Recruiting-generated research on women in non-traditional employment fields (Horizon Research, 2012). My own personal reflections and experiences as both a researcher and member of the ADF were also integral to all stages of the research’s conceptualisation, development and eventual outcomes aimed at increasing women’s representation in ADF flying roles.

As previously noted, semi-structured interviews provided the primary data-set on which this research was based. This section discusses the decisions that lead to selecting this method for gathering empirical data while Chapter Two provides an overview of how the literature and demographic data were used to inform this project. The focus group data comprised a very small, non-generalisable component of the empirical contribution of this research, as discussed towards the end of this chapter.

Selecting primary method for data collection

The selection of a method or data-gathering technique that best facilitates answers to the research question/s is of paramount importance to all research projects. As 'feminist researchers use just about any and all of the methods of social inquiry' (Harding, 1987:2), a range of different data collection methods were considered and rejected through the early developmental stages of this thesis.

Feminist research 'works to create personal, empathic connections between the researcher and those being researched' (Reinharz, 1992). Letherby advises the necessity of 'adopting a flexible research approach which adapts to the emerging data' (2003:102). These requirements discounted the use of impersonal quantitative methods, such as quantitative surveys, from the outset. Indeed, the personal connections made with interviewees through this study became one of the richest and most invaluable aspects of this research.

After considering a range of qualitative methods, qualitative interviews were deemed the most appropriate and epistemologically sound method for capturing data about women pilot's lived experiences. Ethnographic approaches and comparative case studies were briefly considered and rejected during the design process as neither would have afforded the breadth required to encompass the numerous different aviation contexts under investigation. I felt that these approaches were too limiting and would not adequately address the four research questions underpinning the research design.

The qualitative interview 'provides a unique access to the lived world of the subjects who in their own words describe their activities, experiences and opinions' (Kvale, 2007:9). This method also affords the necessary levels of depth and coverage for generating meaningful and generalisable data (Kvale, 2007). The qualitative interview method has been successfully employed in research addressing gender and flying (Davey & Davidson, 2000; Neal-Smith & Cockburn,

2009) and other studies of women working in non-traditional employment (for example, Powell et al., 2006; Andrew, 2009).

Another consideration when conceptualising this research was the decision to use semi-structured interviews as a data-gathering method. Semi-structured interviews have 'become the principal means by which feminists have sought to achieve the active involvement of their respondents in the construction of data about their lives' (Graham, 1984, in Reinharz, 1992:18). Like completely unstructured interviews, they enable 'free interaction between researcher and interviewee' and produce 'non-standardized information that allows researchers to make full use of differences among people' (Reinharz, 1992:18-19).

When reviewing similar studies about women and men working in non-traditional employment, it became apparent that semi-structured interviews are one of the more widely used methods for research of this nature (see Gale, 1994; Cross & Bagilhole, 2002; Whittock & Leonard, 2003; Andrew, 2009). Highly structured (or standardised) interviews were disregarded as being too restrictive and inflexible, especially given the exploratory nature of this research. I also felt that *completely* unstructured interviews would not have ensured coverage of the barriers and challenges evident through the preliminary literature review.

The semi-structured interview format seemed to enable sufficient flexibility for interviewees to detail their experiences in their own voices whilst also providing some structure to ensure coverage of previously identified themes. This was confirmed once fieldwork commenced. As demonstrated by others researching women and men's experiences in non-traditional employment, this style of interview is also ideal for feminist research of this nature (Whittock, 2002; Andrew, 2009).

Technology has afforded researchers ever-increasing ways of accessing interviewees in disparate locations (for example, web-camera, Skype, conference

call). However, given my desire to make personal connections with interviewees, the decision was made to conduct all interviews in person. High response rates and the ability to probe and ask complex questions are key advantages of the face-to-face interview approach (Burns, 1990; Neuman, 2006).

Methodologically, face-to-face interviews also brought a level of ethnography and observation into the mix, as entering people's homes and workplaces afforded an insight into these women's worlds that would not have been possible otherwise. This is another cited advantage of using this method over technology-based approaches (Neuman, 2006) which considerably enriched the entire interview process. Another attribute of face-to-face interviewing is the ability to create a close and equal relationship which feminists believe can lead to the acquisition of more open and honest data (Oakley, 1981; Greed, 1991).

Face-to-face interviews proved critical to making these equal and empathetic connections. I believe an alternative approach would have comprised women's willingness to openly and honestly share their stories and lives. This would ultimately have impacted on my quest for the 'truth' regarding the barriers and challenges faced by women pilots and, perhaps, compromised the research outcomes.

Once the use of face-to-face, semi-structured interviews had been decided, it was necessary to develop a flexible interview guidance sheet, with sample questions or prompts, covering the key areas of interest for this study. Interview themes/possible areas of inquiry were formulated on the basis of a range of different inputs, including the research aims and questions, the styles of questions used in similar research projects and themes that emerged from the preliminary literature review.

Before developing the interview questions, and with ethical considerations in mind, I developed a 'checklist' of criteria that was necessary for conducting the interviews.

This checklist and subsequent interview questions and prompts, were approved through the University of New South Wales (UNSW) ethics approval process, as discussed in more detail in this chapter. The checklist information served as a useful reminder when planning and ensured that all critical information was covered prior to each interview. A copy of the checklist is provided in Appendix 3.1.

As elucidated in Chapter Two, the literature dedicated to piloting as a field of non-traditional employment for women (Davey & Davidson, 2000; Neal-Smith & Cockburn, 2009) provided initial insights into some likely barriers for women pilots. So too did similar studies of other fields of non-traditional employment. However, these possible barriers were not directly raised through the questioning process. To maintain the integrity of the research, I avoided influencing the interviewees' thinking, pre-empting their answers or leading them down a particular path of inquiry. Rather, most of the themes and prompts on the interview sheet were designed to invoke open and unfettered responses to interview questions. Such a sheet is referred to as an interview *aide memoiré* by Letherby (2003:89).

The themes/prompts/questions detailed on the interview guide were divided into four main thematic areas:

- biographical details and factors possibly important to becoming a pilot;
- pathways to flying and training experiences;
- flying, life experiences and career plans; and
- interviewee's own ideas and thoughts about the general topic.

Interview questions and prompts for all aspects of the interview are included in Appendix 3.2.

The first part of the questioning sheet, which addresses biographical information and factors important to becoming a pilot, was initially more 'structured' than other parts of the interview as the aim was to collect data of potential importance/relevance to women's decisions to become pilots. This aspect of the questioning was based on Whittock's contention that, in order for researchers to

‘understand the reasons so few girls and women continue to select non-traditional careers‘, they must ‘uncover factors which persuaded those who are involved to select a career of this nature’ (2000:5).

Whittock’s views are further supported by Sprague who suggests that ‘in order to guide social change, we need to understand the mechanisms that are creating the situation within which people identify their options and choose from among them… we need to understand how women get sorted into different kinds of jobs than men do …’ (2005:91). Beyond the factors leading or influencing women’s selection of flying as a career, it was also necessary to explore the reasons for their choosing a particular flying pathway leading to an aviation career as opposed to alternative ones. Establishing why civilian pilots and trainees had rejected the ADF as a viable career option was critical to informing recommendations regarding how the ADF might better situate its efforts to recruit women into flying roles.

A further aim was to explore possible similarities and differences among different types of pilots, including variations in their motivations and biographical information possibly relevant to their choosing a flying career. Accordingly, questions in this part of the interview targeted a range of themes, including a person’s early interest in flying, childhood and upbringing, schooling and academic preferences.

Questions and prompts in the second interview area addressing pathways to flying and training experiences were designed to encourage women to talk about why they selected a particular flying pathway (if they hadn’t previously addressed this question). Questions also encompassed their recruitment, selection and/or training experiences. A key aim was to identify if the training barriers and challenges identified in other studies of women and aviation were also relevant to flying in the ADF (Davey & Davidson, 2000; Davey, 2004; Sitler, 1999, 2004; Germain et al., 2012).

A further aim was to identify if the barriers and challenges encountered by ADF pilots were exclusive to the ADF or experienced by pilots in other Australian aviation fields. The question regarding specific curriculum-based training challenges was formulated in light of literature suggesting the existence of identifiable gender-based differences and challenges for women when learning to fly (Turney, 2004b; Sitler, 1998, 2004). The specific phrasings of interview questions varied according to the career stage at which the interviewee was. If the interviewee was a current student, they might be asked 'what is your *planned* pathway towards becoming a pilot?' while a qualified pilot might be asked 'what pathway *did* you follow to become a pilot?'.

Questions in the third area of investigation, flying, life experiences and career plans, were designed to encourage pilots to reflect on their careers and lives thus far, that is, their 'lived experiences' as both pilots and women. Findings from a large range of other studies of women working in non-traditional employment (especially Bagilhole, 2002; Cross & Bagilhole, 2002; Whittock, 2002; Moccio, 2009) were used to inform and guide the questioning framework. However any questions that might pre-empt a particular response were strictly avoided.

For junior pilots, the aim of the questioning was intended to prompt their thoughts about expected future careers and lives. For more senior pilots, the aim was to discover some of the barriers or challenges they may face/have faced in current or previous roles. Once again, the questions were phrased according to the pilot's life and career stage and, accordingly, some were hypothetical in nature for very junior pilots. Where a retired senior pilot might be asked 'How did flying fit in with past life stages?', a trainee pilot might be asked how they anticipated that flying *will fit* with expected future life stages.

This technique actually brought forth a range of rich data reflecting the disconnect between the 'perceptions' of trainee or junior pilots and the 'realities' of life as experienced by more senior pilots. This was especially true for topics such as

'motherhood' and 'pregnancy', where junior pilots from all aviation pathways indicated an absence of practical knowledge about how to manage a flying career after having children. Several younger ADF interviewees were very excited about this research project because they hoped it might contain some of the practical information they were seeking about expected future life-stages. The lack of overall information about flying careers through different life stages was identified as a type of barrier in itself, and is discussed in Chapter Four.

This section of questioning also proved fruitful for determining barriers to women's ongoing employment in ADF flying roles. A number of interviewees expressed a desire to leave the ADF to pursue commercial flying careers, an insight that was critical to understanding factors impacting on pilot's longer-term careers in the ADF.

Questions in the fourth and final area of investigation, thoughts on the issue of women pilots, were slightly different to previous questions. The focus here was on garnering the interviewee's thoughts and ideas regarding women's low representation in flying. Some extremely useful and insightful data was generated from the 'any advice for others' question.

The results from this area of questioning far exceeded the expectations I had when placing it on the interview sheet, as a means of providing rich data and insights into women's feelings regarding flying careers for women. Responses ranged from 'Go for it!' to 'Run!' which succinctly captured the wide variation in the experiences of the women interviewed for this research. Data from this stage of interviewing and the interviewee's thoughts on the topic was integral to Chapter Eight which addresses strategies for removing some of the barriers identified in this thesis.

Ethical clearances and considerations

Kvale observes that 'professional ethical codes serve as contexts for reflection on the specific ethical decisions throughout an interview inquiry' (2007:25). This section discusses the process by which ethical approval was obtained for this study and the ethical considerations and decisions that were made during and after the

empirical stages of the research. Ethical clearances were required prior to commencing the fieldwork phase of this research project. Personal interactions with interviewees and the qualitative nature of the research necessitated gaining approval from the University of New South Wales (UNSW) Human Research Ethics Committee (HREC: for research with a significant ethical impact).

As part of this process, the UNSW HREC advised that ethical clearance also needed to be obtained from the Australian Defence Human Research Ethics Committee (ADHREC) prior to any Defence personnel being interviewed. These rigorous ethics processes were extremely beneficial in ensuring that any potential issues were identified prior to commencing fieldwork. On more than one occasion during the interview process, I felt grateful that the ethical standards were so rigorous. These standards ensured that I was well prepared for any events that seemed 'unlikely' during the planning stages of my research. The following information addresses some of the issues that were addressed in accordance with ethical guidelines for research.

Written consent to participate, signed by the interviewee and a witness, was attained prior to the commencement of each interview. This information was included in the written consent form that was sent to each interviewee prior to the interview and formed a mandatory part of the interview planning process. The content of the consent form and other ethical details have been extrapolated from the form and included in Appendix 3.3. Permission to digitally record the interviews was obtained as part of the consent paperwork prior to the interviews taking place. At the commencement of each interview, interviewees were once again asked if they felt comfortable having their interview recorded, transcribed and coded.

Digital recordings, once listened to and transcribed, were deleted from the digital recorder and personal computer (PC), as there was no way of removing identifying information from them. Once interviews were transcribed, any identifying information (name, location, personal details) was removed from the transcripts.

These were then given codes that enabled their tracking relevant to the particular interviewees. Other documents (such as consent forms) were/are retained in a locked filing cabinet in a locked office within a secure building.

The utmost care was taken at all times to protect the identities of the women who participated in this study. No information has been included in this, or any other document, that might inadvertently reveal an interviewee's identity. Because there are so few women pilots in Australia (especially in Defence), no specific references to an interviewee's location, rank, status, working timeframes, etc., have been included in this thesis. When quoting the words of an interviewee, a pseudonym was provided.

Although the research budget for this project restricted the ability to formally offer incentives to all interviewees and other participants, where interviews were held in cafes or restaurants and my personal budget permitted, I offered to buy interviewees drinks or sometimes an inexpensive lunch, if appropriate.

As part of the ethics process, a comprehensive risk assessment was conducted to ensure coverage of a range of factors regarding the likelihood of an adverse incident occurring during fieldwork. The nature of this research, and in particular, interviewing women about their lives and experiences, required that full consideration was given to 'worst-case scenario' procedures should the interview process cause distress for interviewees. This information was detailed in a table, with a different assessment for each different group of interviewees. The headings and sample content of this table are provided in Appendix 3.3.

The risk assessment also contained telephone numbers and contact details that might be useful should interviewees display any signs of distress or indicate the desire to talk through any issue in greater depth. A copy of this information (in the form of a card) was kept in each interviewee's folder at all times and was available to the interviewees if required. Some contact details were specific to a pilot's

location and organisation; for example, Bachelor of Aviation students were provided with numbers for student counselling services on their particular campus. However, all contact cards contained generic numbers for agencies such as Lifeline and the Crisis Counselling Hotline.

At the time of developing the risk assessment, I perhaps did not fully appreciate the requirement to have these numbers available. There were occasions, however, when it was invaluable having counselling numbers at hand to provide to interviewees. A small number of interviewees did become upset during the interviews. With interviewee welfare in mind at all times, where interviewees appeared to be distressed during interviews, I followed the protocols detailed on the risk assessment pro-forma.

The stringent ethics approval process and my inability to share interviewee data beyond the realms of the interview resulted in some unexpected outcomes. A number of ADF interviewees chose to discuss some traumatic occurrences during both their training and careers of harassment, bullying and assault during the interview process, and sometimes later via telephone or email. Some ADF interviewees stated that they felt this was the *first time* in their careers that they could safely and openly speak about their ADF experiences, with an empathetic ADF member, without fear of consequences or formal repercussions.

Thankfully, the ADHREC ethical approval process protected me from having to compromise interviewee's identities/privacy by formally reporting events to the ADF, as is normally the case when an ADF member is made aware of incidents of this nature. Some interviewees stated that the primary reason for not reporting incidents of harassment and assault in the past was their inability to control the outcomes from the process and the likelihood of their privacy being compromised. They were absolutely resolute regarding my not taking any action that might compromise their privacy and careers.

The fact that ADF women felt safe sharing their stories for the first time had implications well beyond the boundaries of this research project. It became evident that, within the current system, ADF women had no safe means of seeking help and support after incidents of harassment and assault. This oversight has subsequently been addressed to the benefit of all ADF women who may have experienced harassment and assault, as discussed in the analysis and discussion chapters in this thesis.

Research participants (interviewees)

This section addresses the methodological considerations in relation to the interviewees who participated in this study. Sampling methods for qualitative research differ substantially from quantitative methods. In qualitative research, 'the purpose of qualitative sampling is to reflect the diversity within the group or population under study rather than aspiring to recruit a representative sample' (Barbour, 2007:58). Sprague contends that researchers 'who work with human beings usually do not talk about samples or sampling frames; they talk about "subject pools"' (2005:89). This section outlines the method of recruiting and selecting pilot 'subject pools' for this study.

When commencing this study, there was no means of knowing how many civilian and ADF pilots would be willing to participate. The initial approach to sampling was via 'self-selection recruitment' which essentially meant being prepared to interview every pilot who expressed an interest in participating. This option soon became untenable due to the surprisingly large, ever-increasing number of potential respondents.

Ethics board guidelines regarding the possible 'coercion' of potential interviewees were key considerations when initially locating research participants for this study. To ensure that interviewees did not feel 'coerced' into participating in any way, I approached potential interviewees indirectly, through a third party. A third party approach ensured that there was a layer of separation between myself and potential interviewees in most (but not all) occasions. There were times when

potential interviewees were contacted directly by email but only when they were not personally known to me beforehand.

The Australian Women Pilots' Association (AWPA) was fundamental to sourcing non-Defence pilots for this study. At my request, the AWPA forwarded a very informal introductory email to all its members, asking them to contact me if they were interested in participating in this research. This invoked a large number of expressions of interest from pilots all over Australia. The content of this email is provided in Appendix 3.4.

To initially locate qualified or trainee ADF pilots, a recruiting email was sent via either a member of staff of the Air Force's Pilot Career Management agency or another Defence member. Its content emphasised the voluntary nature of participation which was especially necessary, given my standing as a Defence member. The number of positive responses from Defence pilots was quite overwhelming, with the vast majority of women pilots initially indicating a willingness to participate in this study.

Some of the richest data for this thesis was drawn from interviews with interviewees who were referred to me through other pilots. 'Snowball sampling' is an acknowledged method of locating additional future interviewees through the recommendations of existing interviewees (Neuman, 2006). Due to the non-random nature of snowballing, it can only be used in studies where 'representativeness' is not a key requirement (Abercrombie et al., 2000:318). The voluntary nature of the interview was reiterated through each stage of the process for all pilots, including, as a final assurance, at the start of each interview. The consent form also made this point very clear to all participants.

All stages of the recruiting process used to locate potential interviewees were unexpectedly successful, generating far more potential interviewees than were able to be interviewed for the purpose of this study. Prior to commencing the

interviews, a spreadsheet of potential interviewees contained the names and details of more than 100 women pilots. This increased to approximately 140 names as interviews were conducted and additional potential interviewees sourced as the result of flow-on or snowball referrals. As conducting such a large number of interviews was beyond the financial means and timeframe of this project, it became necessary to refine the sample to a more manageable number.

Deliberate or purposive sampling was the method adopted to refine the number of interviewees (Punch, 2005). Purposive (sometimes referred to as purposeful) sampling can be defined as the process of selecting 'information rich' cases in a non-random way (Patton, 2001) or, according to Punch, 'sampling in a deliberate way, with some purpose or focus in mind' (2005:187). Purposive sampling is accepted by methodologists as being one of the most important kinds of non-probability sampling in qualitative research (Welman & Kruger, 1999).

Information-rich cases in purposive sampling are those that provide insights into the issues of *most importance* to the overall aim of the research (Patton, 2001). Noting the aims of this study and the large number of potential interviewees generated through the recruitment process, a defined purposive sampling strategy was required to ensure:

- coverage of a wide range of different aviation contexts in various locations around Australia;
- an appreciation of challenges and barriers applicable to different stages of a pilot's career and non-working life (covering a range of different ages, career and life stages, family situations, etc.);
- an equal balance between the two main aviation fields, Defence and civilian aviation; and
- that all aspects of the research questions were able to be adequately addressed.

These considerations were factored into decisions regarding who to interview from the list of potential interviewees, with cost and convenience also key considerations

when refining the sample. Locations with numerous potential interviewees were preferenced over those with just one or two pilots. Interviews were conducted in various geographical locations around Australia, including capital cities and nearby suburbs in every state and territory (excluding the Northern Territory), a range of ADF and regional aviation hubs in most states, and a remote mining town.

Conducting interviews

The interviews were conducted from March 2010 – March 2012 and generally ran from forty to sixty minutes. For the most part, timings were dictated by the 'talkativeness' of the interviewee. In some cases, the more experienced pilots simply had more stories to tell and experiences to share than their more junior colleagues, which lengthened the interview process.

One of the key considerations for feminist researchers is 'minimizing status differences between interviewer and respondent, and developing a more equal relationship based on trust' (Punch, 2005:173). To facilitate equality and ensure that interviewees felt comfortable, they dictated the terms of an interview, and its timing and location. The majority of interviews were conducted in 'neutral' locations, including cafes, restaurants, hotel bars and public places such as parks. Although my preference was to avoid workplace interviews, tight schedules and the interviewees' preferences resulted in a number being conducted in workplaces, including airports, Defence establishments and flying schools. Pilots with small children or babies usually preferred interviews to be conducted in their homes, and timed around napping and/or feeding schedules.

Interviews conducted in workplaces were slightly less relaxed than those conducted in less formal environments, such as cafes and homes. On occasion, the workplace interviews garnered unwanted attention from the pilot's workplace peers. This was particularly noticeable in certain military flying workplaces, with men pilots wanting to know why they weren't also being interviewed and openly resentful that women pilots were receiving 'special attention'. This observation was quite beneficial to

appreciating some of the difficulties expressed by interviewees, as discussed in the results component of this thesis.

When determining an appropriate number of interviews for qualitative research purposes, there seems no commonly accepted answer regarding the 'right' number. Kvale advises that researchers should 'interview as many subjects as necessary to find out what you need to know' (2007:43). Before commencing the interview process, I estimated that around thirty interviews would be needed to reach 'data saturation', the point at which 'further interviews yield little new knowledge' (Kvale, 2007:44). This estimation was based on the number of interviews conducted for other qualitative feminist research projects (for example, Davey & Davidson, 2000; Bridges, 2005; Neal-Smith & Cockburn, 2009).

Often, research doesn't go according to plan (Letherby 2003:100) and this was inarguably the case when estimating interview numbers. At around the thirty-interview stage, I realised that there was surprisingly little commonality among some of the barriers and challenges faced by ADF pilots versus their civilian counterparts. Thirty interviews suddenly seemed woefully inadequate for fully understanding the barriers faced by each distinct group of interviewees. I realised that a much larger number of interviews was needed for *each* group in order to reach 'data saturation'.

At the conclusion of the fieldwork, seventy-five interviews had been conducted with women pilots/student pilots. Although this doubling of interview numbers impacted on the timings for expected milestones, it certainly increased the amount and quality of data and proved ideal for this particular research project. A breakdown of interviewee's demographic information is provided in Appendix 3.5.

This section describes factors important to setting the right 'stage' for each interview. 'Setting of the interview stage should encourage the interviewees to describe their points of view on their lives and worlds' (Kvale, 2007:55). Beyond

choosing an appropriate location, there were other considerations that were essential to achieving a relaxed, open and informal 'tone' for each interview. Unlike aspects of ourselves that are difficult to 'disguise' (such as skin colour, age, etc.), some 'aspects of ourselves (e.g., adornment and dress) … 'can easily be adapted to the research situation' (Letherby, 2003:109).

'Impression management' and how interviewers are perceived by interviewees can enhance the level of comfort experienced by interview participants and, in turn, has implications for the nature of the data drawn from the interviews (Letherby, 2003). With this in mind, some time was spent planning my dress for the interviews to ensure that it was appropriate for the interview format and location, as well as the interviewee's life stage. At no stage did I wear my ADF uniform as I felt that this would have affected the deliberately equal status between interviewer and interviewee.

Kvale notes the critical importance of the first few minutes of an interview, noting that participants need 'a grasp of the interviewer before they allow themselves to talk freely and expose their experiences and feelings to a stranger' (Kvale, 2007:55). All interviews began very informally, with small-talk and general conversation in order to help the interviewees relax and ease into the formalities of the questioning process. With Kvale's (2007) advice in mind, interviews began with an interview preamble that occurred prior to my asking any questions of the interviewees (the preamble checklist is provided in Appendix 3.2).

All interviews were recorded via a digital voice recorder. The requirement to record the interview was contained in the consent form initially sent to potential respondents. Prior to the commencement of their interviews, participants were assured that voice recordings were primarily needed for transcribing purposes and, in order to protect their identities, would be deleted from all programs once transcription had been completed. Brief notes were also taken during the interviews to capture any early thoughts on the data as it emerged and, afterwards,

provided useful 'markers' when listening to the interview recordings and creating the memo for each interview.

Punch (2005) and Kvale (2007) observe that an interviewer's art and skill are integral to the overall success of qualitative interviews. My past ADF experience as an interviewer definitely contributed to the positive dynamic achieved during discussions. Later interviews were noticeably more interactive and 'flowing' than earlier interviews as I grew in confidence and experience with the subject matter. Punch points out that feminist researchers 'refine and elaborate the research method of interviewing as more and more experience is built up' (2005:173).

While I initially relied heavily on my interview question sheets, as I gained interview experience, I became more adept at encouraging the interviewees to speak freely about their lives and experiences in any order they wished. This less structured approach enabled women to tell their stories in their preferred ways rather than within a restrictive, defined format; for example, instead of asking a series of structured questions about their motivations to fly, I would ask:

> *'Please tell me all about how you arrived at this point in your career … start at the very beginning'.*

Aisenberg and Harrington, in their study of women in academia, confirm the validity of this type of approach. They reflect that '…we did not conduct the interviews through pre-set questions. Rather, we identified general areas we wanted to cover, but let the interviewees' responses determine the order of subjects, time spent on each and the introductions of additional issues' (Aisenberg & Harrington, 1988:x). At the conclusion of a discussion on a particular theme, the interview sheet was checked to ensure all areas had been covered. If there were identifiable gaps, more structured questions were asked to cover them, as appropriate and required.

While this less-structured questioning technique invoked more lively, natural and free-flowing discussions, coding was definitely much easier when dealing with a slightly more structured interview approach. That said, the benefits of the former approach far outweighed its negative aspects (more challenging coding, longer interview timeframes, greater interview complexity) in truly accessing the 'lived experiences' of interviewees from their own perspectives.

Many feminist researchers contend that qualitative feminist interviews should be interactive (Oakley, 1981; Reinharz, 1992) and that a researcher 'should give of herself as well as 'obtaining information' from the respondent' (Letherby, 2003:84). Although wary of talking too much, I remained open to interaction at all times during the interview, very much seeing the interview as a 'two-way' forum. Interaction tended to occur when the conversation traversed topics of mutual interest at a personal level, such as motherhood, pregnancy and, with Defence pilots, issues related to military life. I believe these personal connections and mutual exchanges of information helped to create the safe and comfortable environments so necessary to research of this highly personal nature.

At the conclusion of each interview, participants were sincerely thanked, once again, for their very valuable time. They were also reminded that they could contact me at any time subsequent to the interview if they had any concerns, further thoughts or even ideas generated from the interview experience. Each interviewee was sent a follow-up email which contained a short personal message regarding an aspect of their particular interview: 'I really enjoyed hearing about your days in the Navy, especially the story about …..', or 'I really appreciated you inviting me into your home, especially when you have just had a baby'.

Post-interview procedures, and coding and analysis strategies

There are almost as many different approaches for data management, coding and analysis as there are research projects, with qualitative data lending itself to an extremely diverse range of options for both coding and subsequent analysis (Punch, 2005). As decisions made throughout data interpretation and management are

fundamental to the premise of the research undertaken, the coding and analysis processes are critical to the final research product. Silverman further describes the subsequent process of data interpretation as a ‘complicated, tricky business’ (2006:3), and this section details the data coding and interpretation processes as they occurred in this study.

At the conclusion of each interview or group of interviews, the digital recordings were securely transferred from the recording device to my PC. Then, prior to transcription, I attempted to listen to each of them at least twice, preferably immediately after the interview whilst the information was still ‘fresh in my mind’. Sometimes, the delay between an interview and listening to the recording of it was a week or so due to issues of timing or undertaking multiple interviews within a short time and travelling.

Whilst listening, I jotted down further notes and comments in my fieldwork diary to accompany those taken during the course of the actual interview. This systematic approach to note taking and record keeping was based on the four-step note-keeping process recommended by Spradley (1979) as a mechanism for making sense of what was happening through the interview process. This initial process of listening and note taking formed the first stage of data interpretation and the identification of some of the codes that would later be used during the more systematic analysis of data.

These early thoughts, themes and other impressions obtained from each interview were detailed in a one- to two-page written summary (referred to as a ‘contact summary form’ or ‘memo’ by Miles et al., (2014:121). The contact summary forms contained notes about key themes, follow-up linkages, information of particular interest and any other notes that may be relevant to the research project. Although initially time consuming, once the number of interviews increased to more than thirty, these memos were a practical means of recalling interview content for the purposes of coding and analysis.

Some methodologists advocate coding and analysing directly from audio or video tapes (Gibbs, 2007:11). While the Nvivo® qualitative analysis software facilitates this approach, I elected to work from written transcripts. This decision was made primarily due to privacy and identity protection considerations as there is no simple means of changing locational references, names, etc., within an electronic data format. Accordingly, all interviews were transcribed either personally or by an external agency. Once checked for accuracy, the transcripts were de-identified and the original voice recordings permanently deleted, with the transcripts and their links to individual interviewees tracked via a separately stored tracking system (Gibbs, 2007).

The coding and analysis framework used for *Unexpected Turbulence* was based on a range of factors, including feminist epistemological considerations, the goals and aims of the research, my intent to create usable research and linkages previously explored through the literature. This framework resulted in the data being identified and eventually organised into the final themes discussed in the subsequent analysis and discussion chapters of this thesis. Transcripts were coded using the Nvivo® qualitative analysis software through a multi-stage coding and analysis process. Methodologically, the themes identified and discussed in the results chapters of this thesis were developed through an iterative ‘blended’ coding and analysis approach. This approach entailed the combined use of two different approaches to build the conceptual schema.

The first was a standard thematic analysis or ‘framework analysis’ (Gibbs, 2007) which was used to code the data according to known or expected themes as previously identified through the literature review and other reading. Gibbs calls this a ‘concept-driven’ approach to data analysis (2007:44) while Auerbach and Silverstein call it a ‘top down’ approach ‘because one begins coding with the theoretical constructs from the previous study in mind’ (2003:104).

The second coding method was a modified grounded theory coding approach (Strauss & Corbin, 1997; Charmaz, 2006) which was used to identify 'unexpected' themes that emerged purely from the data itself. Gibbs (2007) calls this a 'data-driven' or 'open-coding' approach and notes that it entails commencing the coding process with no preconceived coding categories in mind. Auerbach and Silverstein refer to it as a 'bottom-up' approach to coding (2003:104).

My original intent was to primarily base coding and analysis on grounded-theory coding method which is described by Denzin and Lincoln as being 'the most widely employed interpretative strategy in the social sciences today' (2011:248). However, applying a purest grounded-theory approach, where themes emerge purely from the data without any preconceived ideas, became quite impossible. By the coding stage, I had already gained a strong sense of the potential or likely themes through previous reading of studies about women in non-traditional employment. Accordingly, when commencing coding, I already had in mind a reasonably developed list of possible coding nodes (nodes being the Nvivo® terminology for coding categories).

Development of the initial coding 'nodes' (or means of 'indexing or categorizing the text in order to establish a framework of thematic ideas about it' (Gibbs, 2007:38) was highly iterative. During the preliminary coding phase (working through the first fifteen or so transcripts), the list of coding nodes continued to change, grow and be refined into an effective coding framework. The inclusion of new and emerging themes required that already-coded transcripts be revisited to enable data to be re-coded according to the newly developed nodes. Therefore, developing the early coding nodes required a process of continually moving back-and-forth between codes and transcripts to ensure the best possible framework for categorising the data for the purposes of this study.

Once the final coding framework had been established and tested on five further transcripts, the remaining coding tasks were fairly procedural. Any new or

unexpected themes or data that did not neatly fit into the framework were temporarily categorised into 'free nodes' until the coding was completed. 'Free nodes' is Nvivo® terminology for nodes that remain free from the established coding hierarchy (Bazeley, 2007). These are a useful means of 'housing' emergent data or themes that sit outside the predefined coding framework. All the free nodes were revisited and analysed at the conclusion of the coding process to assess their wider application to the research's analytical framework.

At the conclusion of coding, the coded data was analysed more broadly to identify the prevalence of themes. This process 'involves sorting the different codes into potential themes, and collating all relevant coded data extracts within the identified themes' (Braun & Clarke, 2006:89). At this stage, to assist with analysis of the themes, I developed a visual thematic map to identify the relationships among themes and sub-themes, and determine data which did not fit within any of the ascribed thematic schema. This map improved my overall appreciation of the various themes and the noteworthy linkages between them.

Themes were reviewed, refined and re-examined throughout this process to determine the final themes relevant to informing the research questions. A key aspect was determining the degree to which the 'thematic map accurately reflects the meanings in a data set as a whole' (Braun & Clarke, 2006:91). It was vital that, within each theme, there was sufficient data to ensure a level of generalisability and applicability to reliably address the research questions. At the conclusion of this process, I had a 'fairly good idea of what' the 'different themes are, how they fit together and the overall story they tell about the data' (Braun & Clarke, 2006:92). These dominant themes and sub-themes formed the basis for the results, analysis and discussion in the remainder of this thesis.

The thematic data analysis also determined a range of themes which were supported by the data that did not fit within the aims of this research project. A great deal of this data was about commercial and general aviation pilots'

experiences, which did not strictly fit within the framework of 'barriers or challenges'. I found it interesting, for example, to learn of the dilemmas faced by women commercial pilots when negotiating the social aspects of flying with crews where the pilots are usually men but the cabin crew predominantly women. Although this social dilemma was not found to be a barrier to flying per se, the masculine/feminine identity conundrum within the social arena of flying may warrant further investigation through a separate project. In summary, this study generated a large pool of rich data outside the boundaries of this investigation which may be useful to future research projects.

Personal reflections on interviews

Without exception, all seventy-five interviewees were friendly, engaging and accommodating throughout the interview process, with many readily revealing very sensitive, personal information in a trusting, forthright manner. A number of women really 'went out of their way' to participate in this study, sometimes altering their work/home schedules or driving long distances (when I could not).

Most of the women interviewed were very interested in the outcomes of the research and seemed enthusiastic about my choice of topic. Only one (a student pilot and ADF member with years of military experience in an allied aviation role), although seemingly keen to participate, was quite perplexed by the nature of my research. She commenced the interview by expressing her belief that women pilots in Defence have *no* gender-based barriers/issues and as such, my research was quite unnecessary.

I assured her that her experiences were an invaluable contribution to my research and that, if my data revealed the absence of additional barriers and challenges encountered by women pilots, this would be reflected in my thesis. Perhaps unsurprisingly, given the degree to which military aviation is gendered, a range of gender-based challenges and her ways of overcoming them did emerge during our discussions. Interviewees' own perceptions regarding what actually constitutes a

‘barrier or challenge’ became a point of analysis/discussion during subsequent research processes.

As previously stated, some women revealed information that was of a highly personal and emotionally sensitive nature during their interviews. Some pilots indicated that the interview felt a ‘bit like therapy’ and whilst this was not my intention, it was gratifying to know that some women found the experience to be so positive and, in some small way, cathartic. Like other feminist researchers (Klein, 1989, Letherby, 2003), I also experienced strong emotions during interviews and, on occasion, was moved to tears. This tended to occur when pilots reflected on the loss of an influential family member or friend, disclosed negative past experiences or talked about issues pertaining to motherhood (noting that I am apt towards crying far more these days since becoming a mother myself!).

Tears during certain interviews reflected my empathy for the plights of some interviewees. Sprague contends that the ‘ability to be empathetic — to see things from the other’s perspective while at the same time retaining one’s own — is a ‘key mechanism in the intellectual work of crossing boundaries and bridging the differences’ (2005:75). Beyond emotional reactions during individual interviews, there were periods during the fieldwork phase of the research where I found myself feeling quite depressed about the past, current and perhaps future issues confronting some ADF pilot interviewees. This was especially prevalent when listening to stories about harassment, workplace bullying and/or the abject loneliness stemming from being a woman working in areas predominantly populated by men.

Strong emotional reactions appear to be common for researchers undertaking fieldwork of this nature, with Reinharz dedicating a section of her feminist methodology book to ‘stress from interviewing’ (1992:34). There are varying views regarding how the emotional nature of interviewing should be managed by feminist researchers. One suggestion is that interviewers ignore, repress or intellectualise

away emotional responses by focusing solely on the data (Lee-Treweek, 2000). At the opposite end of the spectrum, others see the emotional aspects of interviewing as being absolutely central to the research, arguing that it isn't possible to understand phenomena intellectually without experiencing them emotionally (Katz-Rothman, 1986).

My own emotional journey throughout the research was more in keeping with the latter than former stance. Even had I desired to do so, I sincerely doubt my own ability to 'intellectualise away' the strong emotional reactions to many of the stories and experiences of the women interviewed in this study. Instead of attempting to repress them, I drew strength from my emotional reactions. I still feel that they provided me with increased passion and motivation for not only this research project, but my desire to bring about positive change that might prevent more of these sad stories from being told in the future.

Three interviewees wanted to share additional information via telephone after their interview, on one occasion, many weeks afterwards. Again, it was gratifying to know that these pilots had reflected on their interviews, spent time thinking about the range of issues discussed and then felt sufficiently comfortable to call me and discuss their thoughts further. However, this information had ethical/methodological implications as it was offered over the telephone and, as such, was not in keeping with my selected face-to-face method. There were also practicalities associated with 'capturing' this data for the purposes of transcription and coding. Accordingly, while post-interview data enhanced my ongoing appreciation of women's experiences, it was not included in the coding and analysis due to ethical and methodological considerations.

I am unsure whether the levels of interactivity and openness experienced during the interviews could be attributed to a general 'pilot personality', my skills as an interviewer or that people who voluntarily agreed to be interviewed tended to feel more comfortable sharing their personal experiences. Perhaps it was a nexus

between all three elements. Needless to say, I absolutely, utterly enjoyed meeting all the women who afforded their time and perspectives to this research project. As both a group and individuals, the women pilots interviewed are truly inspirational; the very best role models for people who have career and life dreams beyond the stereotypical and routine. The memories of my interviewing experiences and the many amazing women encountered through that process will remain a much-treasured part of this entire research experience.

Focus groups

Focus groups were used as a secondary empirical method to explore the issue of women's and girls' perceptions of flying and, more specifically military flying, as a possible career choice. Addressing these perceptions was necessary to the research goal of findings ways to increase the numbers of women in ADF piloting careers. The qualitative interviews with pilots helped to gain an appreciation of factors that were/are important to women pilots choosing a flying career in military and civilian aviation. However, neither the qualitative interviews nor extant literature provided any clear understanding of why girls and women *don't* choose to fly.

Focus groups are an ideal method for determining 'the perceptions, feelings and thinking … about issues' (Krueger & Casey, 2009:8) and 'are particularly useful for exploratory research when rather little is known about the phenomenon of interest' (Stewart et al., 2007:41). Their key advantage is that interviews can determine how focus group participants respond to the topic under discussion (Stewart et al., 2007). Focus groups enable a larger number of perspectives to be gained in a relatively short period of time and allow the interviewer to interact with participants and gain access to 'large and rich amounts of data in the respondent's own words' (Stewart et al., 2007:42).

This interactive format also enables respondents to build on the responses of other participants, with the discussion of a subject affording a candid insight into how people really think and feel about it. Unfortunately, focus group findings are not reliable when creating generalisable data (Barbour, 2007). However, this method

was useful for gaining a *preliminary insight* into women's and girls' perceptions of piloting for the purposes of the overarching intent of increasing the numbers of women entering aviation careers.

These preliminary findings prompted the Air Force to commission a more detailed qualitative research project by Horizon Research (2012), the findings from which are referenced in Chapter Four. Together, these two data sources provided an insight into women's and girls' perceptions of flying which informed both this research and the Air Force's strategies for recruiting higher numbers of women pilots.

Method

Twelve focus groups, also called 'group interviews' (McLafferty, 2004) were conducted around Australia, in order to ascertain women's and girls' perceptions of flying as a possible career choice. Each group comprised four to ten women/girl participants aged from thirteen to twenty-one, with the ages of the school children ranging from thirteen to sixteen. Millward et al.'s contend that this age group is 'on the bridge between education and the world of work' (Millward et al., 2006:11) and thus ideally placed to provide insights into young women's perceptions of flying as a possible career choice.

Participants were selected to encompass perspectives from three different groups. The first comprised girls from public high schools with no institutionalised association or known exposure to aviation or the military; the second had joined Defence through the Air Force's One-year Gap-year 'work experience' program but were yet to make an occupational selection; and the third were students from Brisbane's Aviation High School, a school dedicated to preparing young people for a range of aviation careers.

These focus groups adhered to the same ethical considerations as the qualitative interviews and approval was sought through both ethics committees. Their risk assessment processes were also very similar, with consideration of actions to be

taken in the event of an unexpected negative reaction or participant distress. The focus group preparation process was as follows.

School students were asked to volunteer through the school's administration centres, with signed parental approval required for students younger than eighteen years of age. Air Force Gap-year students were asked to volunteer for the focus groups through the Air Force's Gap-year Coordinator. As all participants were aged over eighteen, they did not require parental approval. Volunteers from both groups were asked to sign participant agreement forms. All groups were briefed according to a focus group preamble similar to the preamble for the qualitative interviews.

Focus groups were recorded for transcription purposes under the same privacy and ethical considerations pertaining to the qualitative interviews. The focus groups were highly interactive discussions that ran for approximately 40 to 60 minutes and were framed around very open-ended questions designed to be free of any preconceptions or existing hypotheses. They entailed the following format:

- Ice breaker
- What are your favourite/least favourite subjects at school?
- What do you hope to do when you leave school/finish the Gap Year program?
- What comes into your mind when you hear the word 'pilot'?
- What do you think pilots do in their jobs?
- What do you think would be the difference between flying in the military and flying for a commercial airline?
- What would be the best/worst things about being a pilot in the military and civilian aviation?'
- Is flying a career you might consider in military or civilian aviation; if not, why not?

After each series of focus groups or interviews, the data was transcribed and coded in a similar manner to the coding process for the qualitative interviews. The lack of information about women's and girls' perceptions of flying meant that this coding process followed more of a grounded-theory analysis approach in which patterned

responses and meanings were determined from 'the bottom up' through systematic discourse analysis (Charmaz, 2006:139).

Findings

As the themes (elaborated in Chapter Four) were extremely easy to locate from the very first focus group, they were duplicated through each subsequent process. There were some differences in perceptions between women and girls who had experienced some exposure to aviation versus those who had not, and are discussed in Chapter Four. The focus group outcomes generated interest from the Air Force, which then commissioned further Defence Force Recruiting (DFR) market research into women's and girls' perceptions of a range of non-traditional occupations in the Air Force, including a career as a pilot.

The findings from this research, which was conducted by Horizon Research using focus groups and interviews, confirmed and validated the themes determined through this study's focus group process. While the data from the focus groups and Horizon Research is not academically defensible or generalisable across a wider population, as it was extremely useful in informing the Air Force's strategy for recruiting higher numbers of women pilots, it was a valuable aspect of the research process.

Conclusions

As a method for gathering data, semi-structured interviews provided flexibility, the ability to build rapport and a questioning framework that proved integral to generating the type of data so fundamental to the empirical findings of this thesis. Further, the opportunity to personally meet women pilots from a range of organisations and locations, and discuss their lives in a personal and intimate way was of paramount significance in developing an empathetic appreciation for the struggles and barriers identified through this research. Although I briefly considered a range of other methods (including ethnography, quantitative surveys, structured interviews and case study approaches), on reflection, the selected

method was the ideal means for facilitating the empirical aspects of this research project.

The focus groups were an effective means of supplementing and enhancing knowledge of the full paradigm of experiences explored through the semi-structured interviews as they enabled examinations of women’s and girls’ perceptions of a flying career in an economical, time-effective and interactive way. In addition, focus group data invoked the later research commissioned by the Air Force which further contributed to developing an understanding of why so few girls seek military and civilian flying careers. While this aspect of the research is not generalisable, it affords an insight that has been used to formulate a strategy for attracting higher numbers of women to Air Force piloting roles, a key goal of this research project.

The process of developing the methodology that lead to the completion of *Unexpected Turbulence* was highly iterative, with numerous lessons being learnt along the way. I maintain that the true test of a methodology is the means by which it enables the research questions to be answered. In this regard, I believe that the overall methodology and multiple methods I adopted served this purpose very well.

Appendix 3.1

Pre-interview Checklist

This checklist was used to ensure that all essential interview criteria were covered prior to the commencement of each interview. Both it and the subsequent interview questions and prompts were approved through the university's ethics approval process.

Action	Checked	Notes
Interview timing and location suggested/agreed by interviewee		
Interview scheduled confirmed via email/text		
Sufficient timing allocated to interview		
Documentation and consent forms sent/received/signed		
Voluntary participation checked by email/telephone		

Interview set-up checklist

Action	Checked	Notes
Recording device checked, battery charged		
Copy of signed consent received		
Notepad and pen for note-taking		
Appropriate question guidance sheet copied		
Location and seating set up for interview		
Sheet with contact support details, counselling services, ethics complaints numbers copied		
Text/telephone reminder of interview time and location		

Appendix 3.2

Pilot interviews preamble and question sheets

Content	Checked	Notes/comments
Very grateful for their voluntary participation		
A bit about me ….		
What the study is about/research aims		
Why pilots?		
How their contribution will help the research		
Privacy assurances, data storage and security, de-identified transcripts		
Confirm consent to record interviews		
Interview can be stopped at any time, no obligation to answer all questions		
Consent form signed (check) and witnessed		
Any questions about e, the research or the interview?		
Complaints to ethics committees; hand out numbers if interviewees require post-interview counseling		
Contact me at any time via telephone, email or in person		
Happy to proceed (check)?		

Semi-structured Interview Guidance Sheet and Prompts

Biographical details and factors possibly important to becoming a pilot **Initial opening question: 'Can you tell about how you came to arrive at this point in your career/studies'?**	
Question area	**Possible prompts/notes**
Interest in flying (initial interest, confirmed?) and age of first flight	Age first interested, what prompted interest? When was first flight?
Other careers considered/entered? What were they?	Alternative careers? Study?
Barriers or hurdles once decided to be a pilot?	Supported by family/friends? Costs? Entry/selection? Other?
Alternative pilot pathways considered?	Pilot first, military second or other way? Civilian/military flying considered? Why was this pathway preferred?
Upbringing?	Family situation, childhood, geographical considerations etc.
Teen/childhood interests and hobbies?	Awards, prizes, competitive? Non-traditional interests?
For Defence pilots: choice about platform? For civil pilots: choice about flying pathway?	Preferences for aircraft type? Jets? Transport? Maritime? Chopper?
Academic background? Awards, prizes achievements?	School subjects, best/worst school subjects, subject chosen to enhance flying career? Relevant to flying?
Anything else to add that might be relevant?	
On reflection, do you think your gender had any impact on you becoming a pilot?	

Pathway to flying and training experiences **Initial opening question: 'Can you tell me a little bit about your flying training experiences'?**	
Question area	**Possible prompts/notes**
Pathway to becoming a pilot? (planned, actual, past)	Training, selection, pathway, ADF or civil considered?
Reflect on training experiences from a curriculum perspective; anything particularly challenging, anything particularly easy?	Ground school and flying – difficulties, things that 'came naturally', most enjoyable aspects, least enjoyable aspects
Other women around when learning to fly? Impact on learning experience?	Peers? Instructors?
How is/was femininity negotiated in the training context?	Interaction with peers/instructors, social/cultural challenges, minority status, visibility etc…
Recommend training pathway to other pilots?	What advice would you offer women who pursue this training pathway?
On reflection, do you think your gender had/has any impact on your flying training experience??	

Flying, life experiences, career plans **Initial opening question: 'So, what is it like to be a pilot – can you share some of your experiences with me?'**	
Question area	**Possible prompts/notes**
Current and past flying roles – career pathway to date (actual or expected)	Career summary. Current and past positions/roles/ organisations etc…
Best things about being a pilot, worst things about being a pilot (actual or expected)	
How have you negotiated/will you negotiate your femininity in the different context/s of your work? Challenges? Anecdotes?	Social aspects of flying, 'how to be', interaction with other pilots and crew, strategies and tactics (conscious or unconscious?)
How does/has/will flying fit in with other aspects of your life, past, present, future? Future career and life plans?	Family, friends, study, sport, hobbies, etc…
Impact, if any, of gender on your flying career? Challenges or barriers? Advantages?	Problems gender-based or for all pilots? Additional challenges, barriers or advantages in their flying careers?

Ideas and thoughts regarding the topic of women's under-representation Initial opening question: 'So, why do you think so few women do what you do?'	
Question area	**Possible prompts/notes**
Any advice for women and girls wanting to become pilots?	Helpful hints? Suggestions?
Why do so few women and girls pursue flying careers? (speculation)	
Options and ideas for attracting and retaining higher numbers of women pilots?	
Anything else to add that might be relevant?	

Appendix 3.3

Information Pertinent to the Ethics Application and Ethical Considerations
Content of each participant consent form

ADHREC and UNSW HREC research approval numbers and contact details for any complaints
My contact details
An overview of the research, its purpose, and why their participation was required
What the interviews entail (length, location, nature of questions)
How the interviews are recorded, transcribed and coded
The voluntary nature of participation, even once the interview has started
The option to conclude the interview at any time and/or opt out of answering questions that they did not want to answer
Assurances that their identity will be protected at all times, and methods for de-identifying and securely storing all recordings and documents
Processes for complaints
Post-interview follow-up and how results will be disseminated
Assurances that not participating would not compromise their relationship with UNSW or Defence in any way
A form to be signed and witnessed if they wished to participate in the study
A revocation of consent form, to be used if they decided not to participate in the research at any stage

Risk Assessment conducted prior to commencing the research

The risk assessment table contained the following headings (with sample content provided in brackets to demonstrate the intent of each heading):

Activity (Interviews with qualified pilots)

Risk assessment considerations (Interviewees do not have to answer questions they do feel comfortable answering)

Risk mitigation measures (Interviewee can stop interview at any time, interviewee chose environment – comfortable for them)

Assessed likelihood of an adverse outcome (Low risk that reflecting on past/current incidents might cause some distress)

Immediate action if adverse outcome (Stop interview if interviewee wants to, refer to counsellor as per numbers listed in contacts

Follow-up action if adverse outcome (If permitted by interviewee, fill out SAE proforma and submit to UNSW)

Action for Distressed Interviewees

Where interviewees became upset or visibly distressed during interviews, the following protocols were applied in accordance with the risk assessment sheet developed prior to the commencement of each interview.

- Interviewees were asked if they would like to stop the interview.
- Interviewees were asked if they wanted to change the direction of the interview, take a break or both.
- Interviewees were advised/encouraged to seek counselling from the counselling services most appropriate to their situation and location and if necessary, were provided the numbers needed to do so.
- All interviewees were telephoned or emailed after the interview as a follow-up procedure

Appendix 3.4

Sample email content sent to possible interviewees

Dear Members,

Deanne Gibbon is undertaking research into the under-representation of women in the piloting profession. As part of her research, she is hoping to interview women pilots from a range of contexts about their lives and careers thus far. I have spoken with Deanne and she would very much appreciate talking to members from the AWPA regarding various aspects of her research. If any AWPA members are prepared to participate, please contact Deanne directly via email on XXXXXXXXX or via telephone XXXXXXXXX

Any help that you may be able to provide would be greatly appreciated.

Kind regards and thanks

(sent via the AWPA point of contact)

Dear ADF pilots,

Wing Commander Deanne Gibbon is undertaking research into the under-representation of women in the piloting profession in civil and Defence aviation. As part of her research, she is hoping to interview women pilots from a range of contexts about their lives and careers thus far. She would appreciate talking to ADF women pilots from Army, Navy and Air Force, regarding various aspects of her research. If you are prepared to participate, please contact Deanne directly. While Deanne is a Defence member, this research is being conducted through the University of New South Wales, not Defence. There is absolutely no obligation for you to participate in this study; all participants must be volunteers.

Any help that you may be able to provide would be greatly appreciated.

Kind regards and thanks

(sent via the ADF point of contact)

Appendix 3.5

Demographic Data about interviewees

Pilots will generally have experience of more than one aviation environment. For example, commercial pilots have experience with general aviation and of being a trainee pilot. A number of commercial pilots are former ADF pilots. Defence pilots may have general aviation and civilian flying school experience. The following table reflects the pilot's aviation context, at the time of our interview.

Current Piloting Context	Sub-category	Number of pilots/trainees
Current Defence Pilots	Army and Navy	14
	Air Force	17
Current Commercial pilots		12
Current Corporate pilots		3
General Aviation pilots	Aeromedical, police, search	3
	Other	9
Current student pilots	Defence	11
	Civilian (Bachelor of Aviation and flying school)	6
		Total: 75

When current and past aviation contexts are included, 46 interviewees of the 75 interviewees, had experience in Defence aviation, with service breakdown as follows:

- Air Force – 28
- Army – 13
- Navy – 5

Age

The pilots interviewed ranged in age from 17 – 65, with the majority of interviewees falling into the age bracket of 19 – 40.

Stage/context

Interviewees were at different stages of their careers and lives; some were under training or had not yet commenced their training, some were junior pilots working in either Defence or general aviation, others were more experienced, senior pilots working in Defence or general aviation. Due to the low numbers of women pilots generally, it is difficult to provide a detailed breakdown of the pilots, stages and organisation without compromising the anonymity of interviewees. For this reason, specific context and pilot stage has not been linked in this thesis. Army and Navy pilots have been grouped together as 'ADF pilots' for this reason.

The current pilot stage, as indicated in the following table, denotes the pilot's career stage of her overall flying career. For example, if a flying instructor with ten years of experience has recently joined a commercial airline as a relatively junior 'lower ranked' pilot, for the purposes of this table, she would still be deemed a 'middle career' pilot, due to her overall number of years of flying experience.

Current pilot career stage (as reflected in the interview)

Career stage	Pilots currently at that stage
Student/trainee pilot	17
Early-career pilot (0 – 5 years flying experience post initial flying qualification)	17
Middle-career pilot (5 – 15 years flying experience post initial flying qualification)	25
Senior-career pilot (over 15 years flying experience post initial flying qualification)	16

Demographic information of relevance (family situation) – ADF women pilot interviewees:

- 19 women had children at the time of our interview
- 4 women were pregnant at the time of our interview
- 9 women had decided never to have children at the time of our interview
- 46 women had a long term partner, committed relationship or were married at the time of our interview

CHAPTER FOUR – WOMEN'S AND GIRLS' MOTIVATIONS TO FLY IN THE ADF: BARRIERS, CHALLENGES, OPPORTUNITIES AND PREFERENCES

CHAPTER FOUR - WOMEN'S AND GIRLS' MOTIVATIONS TO FLY IN THE ADF: BARRIERS, CHALLENGES, OPPORTUNITIES AND PREFERENCES

Introduction

Women's lack of interest in and/or unwillingness to pursue non-traditional careers is known to be a barrier impeding their increased entry into a range of other non-traditional fields (Andrew, 2009; Gale, 1994; Dick & Rallis, 1991). Accordingly, understanding women's and girls' perceptions about flying as a possible career choice, both generally and within the military, is vital to developing a holistic understanding of women's enduringly low representation in this particular occupation.

Farmer et al. observe that 'it is important for researchers to identify the factors that both facilitate and inhibit' women's and girls' selection of non-traditional careers (1995:157). In her studies of women in non-traditional employment, Whittock also maintains that 'the provision of a holistic account of non-traditional employment for women requires us to look beyond the employment system' (2000:5). She further argues that it is necessary to first 'understand the reasons why so few girls and women continue to select non-traditional careers and, second, to uncover the factors which persuaded those who are involved to select a career of this nature' (Whittock, 2000:5).

This chapter heeds Farmer et al.'s and Whittock's advice in relation to explaining why so few girls/women seek careers as military pilots. As such, there are two distinct elements that contribute to this discussion. The first entails establishing how flying is viewed as a possible career choice by women and girls from a range of different contexts, including high school, the Air Force's Gap Year program and students at Brisbane's Aviation High School. The different types of exposure of these three groups to pilots and aviation more generally, provided some insights that were quite useful to understanding some of the negative and positive perceptions that women and girls hold about flying in all aviation streams.

Exposure to aviation, through both the Air Force's Gap Year program and Aviation High School arguably influenced women and girl's perceptions of flying, but not always in a positive way. Determining the negative perceptions is useful should the ADF seek to mitigate those perceptions in future. Positive perceptions are also helpful should the ADF wish to capitalise on any encouraging perceptions to entice higher numbers of women toward military flying careers.

The second element of this chapter relates to determining those factors that were important to women choosing flying as a career, both within and external to the military. Establishing why women chose to fly and their choice of aviation pathway is also useful to informing any future strategies for increasing women's interest in ADF flying careers. Both aspects of the analysis and discussion in this chapter pertain to theories located within 'supply' or 'choice' arguments for explaining why so few women pursue non-traditional careers. As outlined in Chapter Two, supply-based theories attribute women's low representation in non-traditional employment to their choices, arguing that women simply prefer certain types of work for a range of different societal and gender-based reasons.

From a methodological perspective, a range of considerations and data sources contributed to the findings outlined in this chapter. The discussion about women's and girls' perceptions of flying as a possible career choice is based on findings from both current literature and empirical data drawn from the focus groups with women and girls from different organisations. Another data source relevant to this discussion is the qualitative data obtained through a separate research project commissioned by the Royal Australian Air Force (RAAF) through Defence Force Recruiting (DFR), the 'Horizon Report' (2012).

The Horizon Report (2012) is a research study designed to obtain information to inform future ADF marketing strategies aimed at increasing women's representation in a range of non-traditional fields, including that of pilot. The

report contains additional qualitative findings from interviewees and focus groups that complement the data gathered throughout this research project. Together, these two separate data sets provide insights into how military flying is perceived by women and girls from different backgrounds and with varying degrees of exposure to aviation. This information is important to ascertaining whether women's and girls' inclinations or disinclinations towards flying contribute to women's low representation in that field, both within and external to the ADF.

The examination of factors important to women choosing and/or not choosing an ADF flying career is primarily based on data obtained through semi-structured interviews with women pilots, past, present and future, and at all career stages. The interviews ascertained an interviewee's motivation to fly, background, schooling, family influences and a range of other aspects that have potential relevance to women choosing this non-traditional career. When the interview data was reviewed within a framework of relevant literature, it became evident that there are common factors that encourage women's inclination towards flying both within and external to the military. Appreciating these factors will also be helpful to positioning the ADF as an employer of choice for women pilots in the future.

Analysis and discussion

The discussion in this section begins with a short story which, in many ways, sums up some of the findings from the research. In celebration of a commemorative military occasion in 2011, my friend Samantha (Sam), an Air Force pilot, was invited to speak about her flying career at my daughter's co-educational primary school. She regaled her wide-eyed audience with tales of daring aero-medical evacuations and hair-raising dirt-strip landings in Afghanistan and Iraq, and the children were awestruck through her exciting presentation. At the end of her talk, we asked the audience of eleven- and twelve-year-old boys and girls how many of them were interested in becoming pilots in either Defence or commercial aviation. Around a third (fifteen or so) put up their hands; they were all boys. Not a single little girl, including my eldest daughter, raised her hand.

After some cajoling and prompting, one young lady eventually plucked up the courage to put up her hand and said: '*I don't want to be a pilot Dee, but I would like to become an air hostess'*. This provoked a chorus of 'me too' and nods from some of the other girls. This exasperated Sam who then asked:

> '*Why do you want to be an air hostess and not the pilot*?' '*Well I just think it would be too hard and also too dangerous ... you know, in case you crash',* the girl replied. Sam explored this further: '*But you'd still be in the crash! Wouldn't you rather be flying the plane so that you could control what's happening'*? '*No*', the girl replied quite firmly, '*I think that would be more of a man's job*'.

At this point, a somewhat disheartened Sam sighed and conceded defeat. This little girl unwittingly summarised some of the themes explored in this section; that women and girls perceive the occupation of pilot as being 'difficult, dangerous and not a job for girls'. Military flying is seen as even less palatable, even by girls and women who have an interest in flying. These perceptions arguably contribute to the enduring low numbers of women in all flying roles both within and outside the ADF.

Focus groups – perceptions of flying as a career choice

The focus groups held with women and girls from a range of different contexts determined that there are some extremely positive perceptions about flying as a career choice[1]. The key questions used to generate the data informing the discussion in this section were: 'what comes into your mind when you hear the word pilot?' and 'what would be the best thing about being a pilot?' They prompted a wide range of responses that were generally very positive, with flying

[1] Note that the quotes in this chapter differentiate between Air Force pilots and ADF pilots. 'ADF' includes both Navy and Army pilots; information from whom has been combined to protect the identity of Navy pilots as their numbers are so low. Although differentiating between the Air Force and other services is not particularly important to this chapter, it is necessary in other chapters in which different services are discussed.

seen by all groups as being a prestigious and elite occupation. Numerous girls and women stated that one of the best things about being a pilot would be telling others that they were pilots, demonstrating the degree of prestige attached to a flying career.

Other perceived positives were the amount of travel, opportunities to explore the world and a career that was well paid. In a military setting, the main positive attributes included the adventurous nature of the work, 'being able to help people in need' (humanitarian factors) and being able to 'serve your country in a meaningful way'. Being a *different* or unusual career was also very attractive to participants.

> *I think just 'cause it's different. Like it's just not a typical, I don't know, it's just not an everyday job. You know, it's just different, I think that would be pretty good.* ***(High School student)***

> *I think like 'cause it's not something everyone does, like just to be able to do something that – like doing something different that nobody can do it's, like, oh I can fly a plane.* ***(Gap Year cadet)***

This data correlated with findings from the Horizon Report (2012) which also listed having a meaningful role, adventure and a desire to travel as perceived attributes of Air Force service in general. In many ways, this was a very encouraging finding as a negative occupational image has been cited as a factor deterring women from a range of other non-traditional occupations (Jurik et al., 1984; Jurik, 1985; Gale, 1994; Fielden et al., 2000; Spertus, 2001). However, while women and girls readily listed the perceived benefits and prestige associated with flying, very few actually thought they might like to pursue this career.

An examination of themes pertaining to how the occupation of flying is perceived by participants suggested that flying remains a deeply gender-stereotyped

occupation. Occupational stereotyping theory maintains that deeply gendered stereotypes about certain non-traditional careers may prevent women from considering employment in those occupations (Gottfredson, 2002; Millward et al., 2006). This theory seems to hold true in the case of piloting as an occupation for women. The majority of participants in all contexts expressed views that flying is a masculine occupation requiring 'male qualities', with focus group participants describing a typical pilot as 'a confident man'. Perhaps surprisingly, there was very little difference regarding military and civilian flying with regard to perceived 'masculinity', as piloting in all aviation streams was deemed to be 'a guy's thing'.

> *Just, whenever I think about pilots, I always think about men, mainly, pilots.* ***(High School student)***

> *… it's like, well, why would you – like, that's a man's job. You've got to leave a man to do a man's job.* ***(High School student)***

> *I guess I've always thought of it as a guy's kind of thing. Like you see it on the ads and there'll be like technicians that are females but, like, I always just thought it was a guy like, 'cause like in the movies and then like, just everything, it's always just males.* ***(High School student)***

> *… when I think of women on planes, I don't think of women as pilots. I think of them more as the tray carriers and stuff.* ***(High School student)***

These quotes, drawn from a much larger cache of similar statements, indicate that women's and girls' perceptions of flying as a 'male' occupation may limit their inclination towards this non-traditional field. When asked what they felt was necessary to becoming a military pilot, the focus group participants offered similarly strong opinions that reflected their views of military flying as being a very masculine profession. The following conversation among different focus group participants, represented exactly as it was transcribed, shows this perception in a palpable way.

[To be a pilot you have] to be confident; you have to be very confident. That's why I think it's hard for girls as well, 'cause you're a girl in a boy's world.
You're hanging with boys all the time and stuff, you kind of have to be a boy in your mind.
Yeah, you have to be a boy in mind sort of thing.
You have to be like a boy.
But you have to be a girl.
Look like a girl, flirt like a girl, but act like a boy. You're just like, seriously, it's just ridiculous…..
And there'd be so much pressure on you if you became the first female pilot.
Every single boy would be trying to find the excuse to - - -
To show you up.
- - - make a mistake, or show you up, or to prove that you're – it's still a boy's job. 'Cause I think that's the impression at the moment. I'm sure it is, within the fighter pilots, it's like it's a boy's job, just like ADGies [Airfield Defence Guards] is a boy's job.
It's only allowed to be a boy's job sadly.

Millward et al.'s (2006) contention about job perceptions being based on the degree of 'gender appropriateness' was further reinforced by other focus group data about another flying role; that of cabin crew. The traditionally feminised field of flight attending was viewed very positively, primarily by high school focus group participants with limited exposure to flying roles. Many of them referenced being cabin crew as their initial reaction when considering flying and a number of girls expressed an interest in pursuing this career path.

Women's and girls' perceptions of flying as a masculine career was further investigated with focus group participants to understand how these gendered perceptions about both piloting and cabin crew might have formed. Participant

responses suggested that limited exposure to women pilots as role models may have been a key factor. I found it surprising that the younger generations still referenced now-dated flying movies like 'Top Gun' as influencing their view of military flying as a highly masculine career. Also influential were the more recent advertisements for various airlines (Virgin Airlines was cited quite frequently in focus group data) in which cabin crew are almost always portrayed as attractive young women while the pilot is generally an older man.

> *When you've got all of this media and film, newspaper articles, ra, ra, it's all about boys, boy pilots, boys this, boys that. It's difficult to inject yourself into that world.* ***(Gap Year cadet)***

In her study of barriers to women in the non-traditional occupation of surveying, Greed (1991) notes the absence of women role models in job advertisements, brochures and other marketing literature as being a barrier to women's entry into this field. In recent years (2012 -2013), I have been very pleased to note that a number of advertisements for airlines, as well as in-flight messages, show both women in co-piloting roles and men in cabin crew positions. This is progress and perhaps reflects commercial airline managements' desire to increase the diversity of their organisations.

In terms of military aviation, when this study commenced in 2009, one of my supervisors, Dr Jim Mitchell and I reviewed the aircrew section of Defence Force Recruiting's (DFR) 'Defence Job's website and associated recruiting brochures and pamphlets. At the time, the only woman featured in the aircrew section of the recruiting website was an attractive flight attendant (called Crew Attendants in the ADF). There were no pictures of women pilots, navigators (or Air Combat officers as they are now known), flight engineers, load-masters or any other women aircrew. These ADF recruiting materials reinforced the perception that women do not or should not feature in military flying which represents another potential barrier to women's entry into this field.

Beyond media and marketing representations, focus group data indicated that the image of flying as being a highly masculine career and not a career for women also stemmed from a lack of exposure to women pilots in 'real life'. Academics examining enduring occupational segregation attribute a lack of tangible role models 'to challenge the dominant view' (Court & Moralee, 1995:29) as a key factor influencing women's and girls' views of occupations as masculine (Savenye, 1990; Court & Moralee, 1995). Researchers such as Auger et al. (2005) and Court and Moralee (1995) note the criticality of gender-appropriate role models in inspiring children to make occupational choices outside standard stereotypes. A number of respondents stated that they had never seen or met a woman pilot.

> *But I actually don't think I've ever met a female pilot in the Air Force... It just feels really unachievable.* ***(Gap Year cadet)***

> *I don't know, it just seems like more of a guy job. I've never really seen a girl flying a plane and stuff.* ***(High School student)***

Two High School focus group participants actually thought that women were still not allowed to be pilots in the military. Auger et al. specifically observe that older children 'who see examples of male nurses and female construction workers may be more apt to themselves aspire to a career that is not traditionally populated by adults of their own gender' (2005:327). As very few focus group participants (excluding girls at Aviation High School) had ever seen a female pilot in *real life*, it was perhaps not unexpected that they perceived flying to be a job for men.

The lack of tangible role models creates something of a 'Catch 22' for women's recruitment into ADF flying. Women and girls may need to see higher numbers of women pilots to consider flying as a possible career choice. However, without tangible role models, there is unlikely to be an increase in their overall numbers to enable the creation of a sizeable cache of role models.

On the topic of role model, one finding that was made evident through this research was that women's and girls' exposure to Air Force pilots 'in real life' was largely unhelpful to orientating them towards flying careers. In his article bemoaning the lack of women pilots, Barry writes that women don't get to meet many pilots but, when they do, the pilots 'tend to be male ... a little arrogant, macho and with strong views, which further enhances the perception' (2005, in Bennett, S., 2006:52). Barry's view that male pilot personas might be off-putting to girls and women was reinforced through the focus groups with the Air Force's Gap Year students.

These groups had some exposure to Air Force pilots through their work experiences and base familiarisation visits. Women in these focus groups expressed very strong negative views about flying as a career choice, primarily on the basis of their interactions with some Air Force pilots. While their interactions with non-fighter pilots were generally more positive, their interactions with many fighter pilots were for the most part, quite unpleasant. Gap Year women described fighter pilots as being 'sleazy', 'self-absorbed', 'arrogant', 'wankers' and found that they were generally quite unreceptive to the prospect of women pilots.

> *Yeah, it was like they, the pilots, found it easier to talk to the boys that were interested rather than the girls. Like, if a girl's like "Hey, I'm interested in pilot," they're like "Yeah, righto"… You have to go like "No, I'm serious".* ***(Gap Year cadet)***

The non-traditional nature of military flying as a career for women was also discussed at length with Gap Year cadets. When asked what they thought it would be like to be a pilot in the ADF, the women and girls spoke, quite insightfully, about the additional pressures of being a woman in flying, the need to prove themselves and the likely lack of support for women entering that occupational field. These perceptions were major disincentives for the young women interviewed through this process, who simply could not see themselves entering the highly masculinised

world of military flying. Of the twenty-one Gap Year focus group participants, only two women expressed any interest in pursuing a piloting career.

At least half of all Gap Year participants in this study had initially joined the Air Force due to having some interest in flying. Unfortunately, they were subsequently dissuaded by their work experience interactions, with the culture present within fighter pilot contexts proving particularly unsavoury to the young women. This finding is disappointing to an organisation seeking to encourage higher numbers of women into their ranks of aviators. It is also confronting to me, as an Air Force Officer, that women had formed such strong views during their brief tenure and limited exposure to aviation in the Air Force. Their perceptions allude to a strong cultural issue within Air Force aviation that must be addressed if the Air Force seeks higher representation in operational flying roles in future. The aviation culture within the ADF is addressed in further detail in Chapter Six.

Occupational stereotyping theories contend that, as well as 'ruling out' occupations that are deemed gender inappropriate, women also tend to view male-stereotyped occupations as being 'more difficult' and, therefore, more unattainable than female-stereotyped roles (Michie & Nelson, 2006; Millward et al., 2006). The perception of flying as being 'too difficult' was affirmed through the focus groups. The term 'difficult' appeared in numerous focus group transcripts, with many participants also reiterating that, due to its high degree of difficulty, they would probably not be 'smart enough' to succeed in this field. Even academically superior participants pursuing hard sciences and maths expressed concerns that they wouldn't be 'smart enough' to become pilots.

> *Yeah, my family kept trying to tell me, like, "If you get an opportunity go for pilot, go for pilot" but I'm not, well I'd, I'm not smart enough [laugh]. Not that I'm not smart.* ***(Gap Year cadet)***

> *You have to be really smart and confident to be a pilot and I really don't think I could do it.* ***(High School student)***

> *Like, you're going on a plane, something goes wrong, you just have to depend on yourself to save a whole plane of people. And, maybe, I'm not that brainy enough to do that.* ***(Aviation High School student)***

While civilian flying was viewed as more accessible and attainable by groups with some exposure to aviation, ADF flying was considered extraordinarily difficult by all groups, including girls at Aviation High School and in the Gap Year program. This perception acted as another strong disincentive to apply for military flying roles.

> ***So have you thought about the Air Force?*** *You need to be really smart to be that... it's just the pressure that they put - like, you have to have an OP1 [a very high tertiary entrance score], and be good at physics and all the sciences, maths and all that stuff. And I think that, personally, it would be a bit – pressure. It would be too much pressure for me. So, I guess, boys can take that a bit more… But girls would just freak out, I guess.* ***(Aviation High School student interested in a civil flying career)***

> *I definitely want to be a pilot but I'm going to go to Griffith to do the BAv (Bachelor of Aviation degree).* ***Have you considered joining the Air Force?*** *Oh, I would never pass the testing for the Air Force.* ***(Aviation High School student interested in a civil flying career)***

> *And so, whereas the rest of us are just like, "Oh", like that's so far out of reach, and because of the massive failure rates and all the massive hype about it, we all kind of go, "Oh, that's unobtainable".* ***(Gap Year cadet)***

Participants in this study who did seek flying careers had basically ruled out even attempting the testing for ADF pilot on the basis of its perceived degree of difficulty.

For Gap Year students, the belief that becoming a pilot in the Air Force was 'too difficult' was further exacerbated by exposure to Air Force personnel, both pilots and non-pilots, who reinforced this perception.

> *... Such a high fail rate… I've heard lots of stories where you stuff up one day, you're gone the next. I don't know, there's like no second chances.* ***(Gap Year cadet)***

> *and it's just like "Oh yeah, the girls don't ever get this far and then they don't get much further" …Yeah, everyone says that. I know there was one bit that they said the girls usually don't get past…this one last test that the girls never get past.* ***Who told you that?*** *Our Flight Lieutenant [Officer in charge of their group].* ***(Gap Year cadet)***

> *... and a woman can do that". And he [a pilot] was like "Yeah, but no women have ever been fighter pilots" and one of the boys goes "Oh yeah 'cause they can't pass the 3D flying blah, blah, blah" and then somebody else went "Oh yeah, girls just can't do it". So all the men in the room just started...* ***(Gap Year cadet)***

As noted by then-Air Marshal Binskin (AFHQ, 2011), selection as a military pilot in Australia *is* extraordinarily difficult for *all* applicants, especially those proceeding down the fighter pilot pathway. However, gender differences between men and women may disproportionately impact women. A girl's belief that she isn't capable of becoming a military or civilian pilot due to the perceived high degree of difficulty supports Bandura (1977) and Bandura et al.'s (2001) social cognitive theories addressing self-belief or 'self-efficacy'. Many of the participants in this study demonstrated a lack of self-efficacy in relation to flying which was disappointing coming from mathematically and scientifically inclined girls/women at Aviation High School and in the Gap Year program.

Students in the Air Force's highly competitive Gap Year program were selected on the basis of their academic prowess and suitability for Air Force employment. Many were exceptionally bright and already orientated towards careers in other scientific, technical or mathematical disciplines. Some had been accepted into medicine, engineering and other high-calibre degree streams at civilian universities. In spite of this success, they too deemed military piloting as unattainable due to its perceived difficulty, whereas civilian piloting was viewed as being much more achievable by participants in all focus groups.

Women's underestimation of their own capabilities and lack of self-efficacy are thought to be major factors limiting their progression into other non-traditional careers, especially those involving maths, science or technology (Clement, 1987; Zeldin & Pajares, 2000). As becoming a military pilot *is* definitely difficult, these perceptions are not totally unfounded. However, where young men might have sufficient self-efficacy to 'give it a go', women seem reluctant to proceed down a pathway with low prospects of success. The perception of ADF pilot testing as being 'too difficult to even attempt' seems to be an issue impeding women's entry into this occupation.

Barucky and Stone, in their United States-based study of minority groups' perceptions of flying, determined that a participant's 'strongest perception of a flying career is that it is a dangerous and therefore undesirable activity' (1999:20-6). 'Dangerous' was another negative perception that was strongly evident throughout the qualitative data from the Aviation High School focus groups, thus supporting Barucky and Stone's finding. Of note, flying was only perceived as dangerous by focus groups in which girls had not experienced direct exposure to aviation.

> *It's like it'd be a good job but there's heaps of disadvantages that you have with it. Like it's really dangerous.* ***(High School student)***

> *Crashing. Yes, crashing would be the main negative about being a pilot.* ***(High School student)***

Students with some exposure to aviation were seemingly more educated about the realistic risks of a flying career, because *danger* was not cited as a concern in any of the focus groups with Aviation High or Gap Year students. High School participants initially commented that flying would be 'dangerous' because of the risk of 'crashing'. However, when challenged further regarding this perception, the danger factor was found to be less of an issue than the degree of responsibility held by pilots. In response to being asked if they thought being an aircraft *passenger* was equally as 'dangerous', participants revealed that their fears were less about crashing and more about being 'blamed' or held responsible in the event of an aircraft emergency.

> *If something goes wrong, they'll usually blame you, even though it might not even, actually, be your fault.* ***(High School student)***

> *- - -because if you think about all of these lives that you're carrying every time that you fly a plane… you're responsible… if your plane crashed, you'd be like … blamed.* ***(High School student)***

> *Not your - you would have the crashes, like what if your plane crashes and you're gone or if, like, passengers die, you'd kind of feel responsible.* ***(High School student)***

The degree of responsibility held by pilots and their assumed accountability for passenger safety were disincentives to girls from High School focus groups that had not been exposed to aviation. This fear of responsibility may also have been related to a lack of self-efficacy and girls' concerns that they would not be sufficiently capable of managing a high-pressure emergency situation.

In summary, this aspect of research examining women's under-representation in flying has determined that supply factors do have merit as a possible explanation. The participants in this aspect of the study expressed very little desire to pursue flying careers, either within or outside the military, for a wide range of different reasons. Although there were different nuances across contexts, all focus groups held some negative perceptions of military flying, and flying generally, as a possible career choice. ADF flying was viewed as being highly masculine and unwelcoming to women, with a large number of participants speculating that they would not be 'smart enough' to pass the ADF aptitude testing for pilot entry. High School girls also viewed all forms of flying as dangerous, with high levels of responsibility. The emphatic nature of women's and girls' views about flying indicated that it will not be easy for the ADF to overcome these strongly held perceptions.

Choosing a flying career: factors influencing women pilots' non-traditional career choice

To gain a comprehensive perspective of the factors that influence women's decisions regarding whether or not to pursue a flying career, it is necessary to appreciate why a number of women have chosen, despite the apparent disincentives, to do so. Balancing the different viewpoints is essential to developing strategies and interventions for increasing women's representation in future. The analysis and discussion in this section examine sociological factors that are significant to a woman selecting a career as either a military or civilian pilot, including her background, personality type, influencers, interests and other considerations. This section also identifies the reasons behind interviewees' choices of a flying pathway, particularly regarding selecting or, rather, not selecting an ADF flying career.

Past research has explored a range of sociological correlations and factors that may be influential in encouraging women to choose non-traditional careers. Studies have found that some key influences on women's non-traditional career choices include parental attitudes and encouragement, positive portrayals of occupations and everyday exposure to different jobs (Gottfredson, 1981; Lent et al., 2000, 2008;

Tang et al., 2008; Andrew, 2009; Gadassi & Gati, 2009). Other sociological research has determined the importance of childhood socialisation for influencing non-traditional choices.

Michie and Nelson observe that 'work interests and self-efficacy expectations begin to develop in early childhood and are influenced, often inadvertently ... through the process of socialisation' (2006:13). In his research into women in construction engineering, Gale also determines that 'events and experiences in early childhood play an important part in influencing the later potential for a person to be changed or influenced' (1994:12). The data from semi-structured interviews with women pilots determined that these theories do have some relevance to explaining women's interest in becoming pilots.

Mills (1998), McGlohn et al. (1997) and Clark (2004) all determine, through different overseas-based studies, that women pilots generally made the decision to fly during childhood. Their findings correlate with those from this research project within Australia. While a small number of civilian pilots in this study discovered a later-life love for flying, the majority of interviewees could recount a childhood *epiphany moment* when they first decided to be pilots, a motivation which sustained their interest in flying through childhood and into their teen years. These moments were usually triggered by some form of tangible exposure to flying.

> *When I was about seven or eight years old, I went on a family holiday … you know when kids were still allowed to go up to the cockpit, you know … and we got invited up to the cockpit... the sky was amazing.. there were these clouds and we were flying through them, it was just, for a little kid, sensory, oh never been here before and it just had this magical appeal and that's what interested me.* ***(Leanne, Air Force[2] pilot)***

[2] In the quotes, Air Force pilots are described as 'Air Force'; Army and Navy pilots are described as ADF pilots, because the very small number of Navy pilots may enable individual women to be identified if described as 'Navy'.

> *…when I was a kid we played pilots. Every chair had a cockpit drawn on the underside of it.* ***So you did want to be a pilot?*** *Pilot or astronaut. I don't know anyone around my childhood that was a pilot. It's just one of those things that you see a plane in the sky and go that's so cool.* ***(Grace, ADF pilot)***

> *I was interested since I was about 3 years old, I reckon. This whole wanting to learn to fly and pestering my parents about it for a long time.… my dad used to take me to the end of the runway here and watch the planes take off. It was apparently something that kept me quiet and amused for a long time. That probably is where it all started.* ***(Sabine, commercial pilot)***

The age at which epiphany moments occurred may be theoretically relevant, as the majority of interviewees who cited a childhood interest were between five and ten when they first decided to become a pilot. Vocational choice theorists contend that between six and eight are critical ages in terms of career decision-making as this is the period when children orientate themselves to sex roles and decide what is 'appropriate for one's sex' (Gottfredson, 2002:96). Clearly, the women in this study did not rule flying out as being 'gender inappropriate' as children which enabled them to orientate themselves towards a non-traditional career as teenagers or young adults.

An early orientation towards flying did seem to be an overwhelmingly prevalent factor in women's non-traditional career choices to become pilots. It confirmed that flying is not a career choice made after attending a career market day, flipping through a vocational guide or hearing from a guest presenter at school. Literally, *none* of the pilots in this study made their career decisions based on high school career guidance, career fairs or other routine means of choosing careers. This finding has implications for organisations seeking to attract higher numbers of

women into flying as it suggests that non-standard strategies potentially targeting younger girls may be required to incite women's interest in this role.

Another potentially significant finding from this study was that, for women currently working as pilots or pilot trainees across all contexts, childhood dreams of flight were solidified through a tangible 'hands-on' flying experience during their teenage years. Parents actively helped to facilitate and fund these practical flying experiences, with exposure gained through flying lessons, scenic joy-flights and/or gliding club participation, and in Air Force cadet or university flying programs.

> *From when I was a very small child, I decided I wanted to fly.* ***Do you remember what triggered that?*** *I think it was watching MASH. I wanted to be the helicopter pilots that came and saved all the wounded soldiers. And so then I was really interested in flying and so my dad got me a flight, an introductory flight, when I was 16 for my birthday in a fixed-wing aircraft.* ***(Margie, ADF pilot)***
>
> *They had 30-minute free flying lessons down at the local … kind of thing, just an introductory thing to see if you're interested and Mum's like "Yeah, you know, you've always loved, you know, flying"…. so I did the flight, absolutely loved it and sort of went "Yeah, this is, you know, it's something I could definitely see myself potentially doing".* ***(Jen, Air Force pilot)***

Practical exposure has also been identified as a factor positively affecting women's entry into other non-traditional fields (Whittock, 2002; Bourne & Ogzbilin, 2008). This premise guides the development of experiential school camps for girls and targeted schemes designed to provide hands-on exposure to other non-traditional roles (for example, Queensland's 'Women in Hard Hats' program). Such experiential programs targeting school-age children are known to have had a tangible positive influence on girls' entry into other non-traditional fields, such as computer science (Doerschuk et al., 2007) and engineering (Gilbride et al., 1999).

The positive impact of having a practical flying experience on women selecting piloting careers is another finding that may be helpful to recruiting them into piloting in the ADF and perhaps other non-traditional roles.

The gender stereotyping of girls into traditional occupational roles is frequently offered as an explanation for women's disinclination towards non-traditional roles (Bourne & Ozbilgin, 2008). The degree to which parents actively supported their daughter's flying dreams may also indicate a non-gender-stereotyped upbringing. The majority of interviewees spoke of feeling that there were no gender limitations as far as their professional choices were concerned. Women pilots in this study spoke of growing up feeling empowered, being told they 'could do anything' and of being actively encouraged by their parents to pursue the non-traditional career of flying.

> *Yeah, mum and dad were pretty good. My dad had always wanted to go flying and do all that sort of stuff but never had the opportunity. So, he was pretty excited and pretty happy with it. So there was no problem. They were all, my parents were pretty liberal in a way that they're very, they didn't care what we did as long as they were supportive in whatever we did, you know.* ***(Ellie, ADF pilot)***

The significance of fatherly encouragement is noted in several other studies of women's participation in non-traditional employment (Lemkau, 1979; Fitzpatrick & Silverman, 1989). Fathers were cited as key influencers by several pilot interviewees, both civilian and military, who spoke of having an 'aviation-obsessed' father who either actively or inadvertently triggered his daughter's childhood orientation towards flying.

In her examination of women's entry into construction engineering, Andrew (2009) observes that having fathers or brothers in an associated industry provides access and exposure not normally available to most women. While around fifteen per cent

of all interviewees did have pilot fathers, the remainder did not have any family members who were pilots. This finding presents a point of departure from other studies which cite pilot-family members as creating a woman's initial interest in flying (Mills, 1998; Davey & Davidson, 2000). The majority of interviewees in this study only made personal connections with other pilots once they commenced flying themselves.

That said, over half of all *military* pilots had some form of tangible connection to the *military* during their childhood and/or teenage years through parents, friends, siblings or attending a Defence Air Show. Other interviewees lived in close proximity to an Air Force base or discovered the ADF through high school-based military cadet programs. Civilian pilots had similar early exposures to flying or aviation influences but did not cite the same connection to the military. This finding suggests that previous exposure to the ADF may be another factor that is quite noteworthy when understanding why women select the ADF over civilian aviation careers.

> *Yeah, I think my dad probably set me up in a lot of ways because he's in the Air Force, he's actually a [removed] and he's still in, he's retiring next year. He was a bit surprised when I said I want to be a pilot.* ***(name removed, Air Force pilot)***
>
> *We're not really sure where it came from. I grew up 5 minutes from a RAAF base, directly under a fight path.* ***Was your dad a RAAF-ie?*** *Well, no, none of my direct family was in the RAAF but a very close family friend of ours was, … he worked at the RAAF base.* ***(Kerryn, former Air Force pilot trainee)***

On the topic of pilot's upbringing, another unexpected finding in the data was the over-representation of both military and civilian pilots from rural backgrounds. Around half of all pilot interviewees grew up either on farms or in rural communities. One explanation for this finding may be that children engaged in

'androgynous or masculine play' are more likely to proceed into non-traditional fields (Standley & Soule, 1974). Farming children tend to grow up engaging in non-gender-stereotyped activities and generally lead more adventurous lives than their city-bound peers. As one civilian pilot interviewee astutely observed:

> *'on farms, there is no women's work or men's work, there is only farm work!'*.

An alternative theory is that rural children's attraction to flying is borne from sheer exposure as, in the vast land of Australia, aviation forms an integral aspect of rural life. Therefore, as farm children are more likely to have everyday access and exposure to flying than their city-bound peers, they simply have more opportunities to experience those 'epiphany moments'.

> *Growing up on a farm, as a country kid, aviation probably isn't a priority in your head but, at some point I thought, when I was really little, was truck driving. You know, so there was something in there... and I, kind of, looked at it and at some point, in about year nine, sort of, as I was getting through high school, I went "Oh, it can't be that hard to fly them". And a friend of ours, who runs a big farm out west further, he had a plane. So he took me for one flight, I went for one flight.* ***(Ellie, ADF pilot)***

In terms of a pilot's background and upbringing, there were no other discernible trends in this study that linked choosing a flying career to parents' education, careers or socio-economic status. Pilots hailed from a wide range of socio-economic backgrounds, debunking the myth that 'flying is the preserve of the sons and daughters of the rich' (Bennett, S., 2006:2). Bennett's (2006) study of flight crew sociology also refutes this myth in relation to commercial pilots in the United States.

The qualitative data addressing a pilot's background, family construct and upbringing was examined to ascertain evidence of other sociological factors that may be imperative to women choosing flying careers. Although I was unable to determine any identifiable trends in birth order, family construct or sibling gender, I note that semi-structured interviews are arguably not the best means of obtaining data to support findings in this regard. A more highly structured interview format or perhaps a quantitative survey may be more effective methods of ascertaining any trends in relation to the influence of family construct on women choosing flying careers.

Tokar et al.'s (1998) review of the literature addressing personality and vocational behaviour shows strong evidence that certain personality traits play a role in determining both men's and women's vocational choices. As previously noted, high levels of self-efficacy or self-belief are reported as necessary to women choosing to pursue a non-traditional career path (Betz & Hackett, 1983; Millward et al., 2006). In their study of the relationship between mathematical self-efficacy and the selection of science majors, Betz & Hackett (1983) argue that self-efficacy is key to women's success in non-traditional careers with mathematical components. Flying might be considered such a career.

Pilot interviewees from all aviation streams in this study demonstrated very high levels of confidence and self-efficacy which showed strongly through the terms they used to describe themselves at various life and career stages; 'self-confident', 'self-motivated' and 'goal-orientated'. This finding is similar to other studies of women entering maths-, science- and technology-based non-traditional careers (Church et al., 1992; Zeldin & Pajares, 2000).

> *I guess, you've got to be self-motivating… it's a fairly tough, I guess, career to, sort of, take on … a lot of that drive has to come from your own and, I think, for a lot of pilots, is probably the most common trait.* ***(Jen, Air Force pilot)***

> *Yeah, I'd definitely say we're competitive people and you have to be, I think, driven, motivated and ambitious to work hard and to put up with some of the crap and to get there, I think.* ***(Roberta, Air Force pilot)***

ADF and civilian pilot interviewees who were undertaking flying training at the time of their interviews demonstrated an innate belief that they would succeed in their chosen profession. A thematic analysis examining other words that pilots used to describe themselves determined several other self-described personality commonalities. Traits such as self-described tenacity, resilience and determination appeared numerous times through the interview data from pilots across all aviation contexts.

> *All it did [almost failing pilots' course] was egg me on. I was that type of girl and I always have been. If someone tells me I can't do something, well, I will be doing it and I will prove you wrong. Unless I physically, or can't do it, I would not question my emotional capability to do something. So, no matter how, I will do it.* ***(Sandy, former Air Force pilot)***

> *I was fairly determined about it and I'm kind of, I'm reluctant to pick something but, when I do, I generally stick with it.* ***(Peta, student pilot)***

> *Yeah, just persevere. Stubbornness will get you everywhere [laughs]. Sheer hard work and not taking no for an answer and just keep on trucking, I guess [laughs].* ***(Xanthe, Air Force pilot)***

Research into cultural and structural barriers impeding women pilots in other countries suggests that qualities such as determination may indeed be necessary to 'survive and thrive' in the highly masculine world of aviation (Davey & Davidson, 2000; Ashcraft, 2005). Military pilots, in particular, spoke of resilience and determination being necessary to '*putting up with the crap*' they experienced

through their ADF flying careers, which also alludes to cultural barriers inherent in the world of military aviation.

Focus and drive are personality characteristics cited by Mitchell et al. (2005) as necessary for women to succeed in the highly competitive and masculine world of aviation; these traits were highly prevalent in my research. The majority of both civilian and military pilot interviewees spoke of being highly competitive in many aspects of their lives, including sports and recreational pursuits, school achievement and flying. A large number of interviewees had achieved at elite levels of competitive sport and other recreational pursuits.

> *Growing up in – in high school, I played hockey, touch football and surf life-saving, and swimming. So I was a State swimmer. I was – I was in the State team for surf live saving and all that sort of stuff. So, I did really well there and then, when I went through ADFA, I started with hockey and then turned to Rugby Union, and I played nine years of Rugby Union until I flew and, like, made the Australian Training Squad for that and so I was still very competitive.* ***(name removed, ADF pilot)***

Some interviewees directly linked their success in flying to their highly competitive natures.

> *I've always been pretty competitive…I just wanted a real challenge. I wanted to go and do something really different and I always did want to do something exciting and interesting that would challenge me rather than just sit in the same job every day.* ***(Yasmine, Air Force pilot)***

> *I reckon its competitiveness and that's high competitiveness within themselves, not necessarily actually against other people … I think that's what drives you to do well as a pilot and gets you through.* ***(Jen, Air Force pilot)***

Beyond flying, both competiveness and a love of 'doing different things' manifested in women's participation in a range of sporting/adventurous recreational activities, such as motor-bike and drag-cart racing, mountaineering, water sports, hang-gliding and sky-diving. Novello and Youssel's (1974) personality profiles of female pilots, although now dated, also indicate that women pilots, like their male peers, are both 'courageous' and 'adventuresome'. In their study of the link between childhood play and choosing non-traditional careers, Coates and Overman (1992) also note parallels between competitive sports and women succeeding in non-traditional employment fields. *Ergo*, adventure and sporting clubs might be a rich source of potential pilots for the ADF, as women engaged in these pursuits may also have the 'right stuff' necessary to succeed in the competitive world of military aviation.

In conclusion, when analysing socio-economic background, motivation to fly and general personality traits (competitiveness and self-efficacy), there were minimal differences detected between the civilian and military pilot populations. However, a key point was that many ADF pilots could cite a tangible military influence in their childhood or teen years which may have directly or indirectly impacted on their decisions to pursue a flying career.

While, at face value, this finding might initially appear to suggest that exposure to both the military and flying may be necessary for women to choose a military aviation career, quite a large number of civilian interviewees in this study *did* initially explore military flying careers after leaving school. Unfortunately, a wide range of factors impacted on their willingness and/or ability to enter military aviation, many of which were also experienced by women currently flying in the ADF at some stage of the entry process. These barriers and challenges are explored in the next section.

Choosing a career path - perceptions of ADF piloting as a possible career choice

To ascertain factors important to choosing to pursue either a military or civilian flying career, interviewees were asked why they selected a particular flying pathway over other possible options. These questions were necessary to determine any evidence of perceptions of barriers that might limit civilian women's willingness to join the ADF as pilots. When identifying likely sources of possible women pilot recruits, civilian pilots or women who have already decided to become pilots offer the most potential for ADF recruitment. In already choosing a flying career, these women have already eliminated one major barrier to their recruitment; selecting a non-traditional occupation. The challenge for the ADF is convincing these women to join the ADF which is an additional non-traditional layer. To ascertain any barriers, civilian pilots were asked in the interviews whether they had ever actively considered an ADF flying career.

Factors that were important to military pilots choosing their particular career path were also considered as part of this discussion. Determining why pilots did choose a military pathway is also helpful to determining any positive attributes associated with military flying in their particular Service that might be highlighted during future recruiting strategies. Military pilots were therefore also asked why they chose to fly in the ADF and their rationale for choosing their particular military Service.

An analysis of data revealed that, in terms of women's motivation to pursue a military flying career, the majority of ADF pilots joined the military to fly; it was pilot first and military second. The military was viewed by ADF interviewees as a means of accessing affordable, high-quality flying training and an exciting, adventurous aviation career. Flying high-capability aircraft and the accelerated pace of learning offered by the ADF were also cited as key incentives by interviewees.

> *Fly first but Defence really seemed like the only way. Oh, not the only way I'd want to fly but when I weighed it all up… especially being 16 or 17 years old I just wanted a real challenge. I wanted to go and do something really*

> *different and I always did want to do something exciting and interesting that would challenge me rather than just sit in the same job every day.* ***(Yasmine, Air Force pilot)***

> *Like, when I saw the military aircraft, I was like, this is so much more me. 'Cause I've always been a bit of a, like a sporty adrenaline-type person, you know? I love, you know, ever since I was little, I loved fast rides, all that kind of stuff…. I guess, I've always been quite – enjoyed being challenged quite a lot and I just sort of felt the military aviation stream felt … it just fit so much more.* ***(Pauline, Air Force pilot)***

Despite her father being a commercial pilot, Pauline viewed the ADF pathway as being a more desirable flying option due to the 'adrenaline' aspect. Again, having some exposure to either the military generally or military aviation in particular seemed to affirm a woman's decision to apply for this career pathway.

> *… we also had another really good family friend that had gone through the Air Force pilot process and he became a Caribou pilot. And he used to come to our place and show us the course videos and all that sort of stuff, and I was like, that looks really cool… and then I thought I would look into the Air Force thing as well. And yeah, so that kicked off.* ***(Irene, Air Force pilot)***

The majority of Air Force and Navy interviewees had planned to fly in the military from their early years of high school and had made subject selections throughout their schooling specifically to meet ADF recruiting criteria. Some pilots who initially applied for the Air Force but were unsuccessful through the pilot selection process did join that Service in allied occupations, such as air traffic control, navigation or aerospace engineering. They applied again for pilot selection at a later stage, with greater success. When deciding on an ADF Service, the Air Force was generally the first choice of women seeking ADF flying careers, excluding the Army's General Service Officer Pilots who only considered flying after joining the Army.

> ***Did you consider Navy or Army?*** *I did. But that's because they make you rank them. I was always – I wanted to be a fast-jet Air Force pilot, so that was what I wanted to do. I think Army was second and Navy was third but, I mean, hey, I would've taken any pilot position but I was dead-set keen on the Air Force.* ***(Irene, Air Force pilot)***

This finding was not unexpected because the Air Force, as the primary deliverer of air power, is likely to be the first Service that comes to mind when considering an ADF flying career. However, a number of interviewees from all three Services, like Irene, were initially attracted to Air Force aviation purely for the opportunity to fly high-performance aircraft.

> ***What was the aircraft type that you were, kind of, interested in?*** *Fighter jets from day one, yeah.* ***(Erica, Air Force pilot)***

> ***What was it about fast jets that kind of attracted you?*** *I think – obviously besides all of the things that they're fast, they're noisy, they're cool, blah blah blah, is the fact that it is the most challenging and most difficult aircraft to fly…. you've got to perform the best on course and – yes.* ***(Irene, Air Force pilot)***

> ***What was it about a fast jet that appealed to you?*** *See, I am not sure, see Top Gun came out around about that time, so Top Gun may have had a bit of an influence … I don't know, something about …the noise of a plane, something about the concept of or the ideal of freedom and being able to go wherever you want to go, I guess a bit of recognition for achieving a sort of elitism was there as well.* ***(Bianca, Air Force pilot)***

Future Air Force pilots studying at ADFA or undergoing their pilot training also expressed a strong desire to fly fast jets once they completed their flying training.

This finding dispelled another myth regarding women pilots; that Australia's inability to produce a single female fast-jet pilot has been primarily related to women not seeking that career pathway. It was also evident, from interview discussions, that many women *still* harbour a strong desire to fly fast jets. This finding warrants further consideration, as the Air Force might wish to capitalise on a 'ready pool' of potential fighter pilots already in the piloting ranks. Women's evident attraction to flying fighter aircraft may also have relevance to positioning future marketing strategies to attract higher numbers of women pilots.

While most interviewees initially applied for Air Force, if offered a pilot position by Army or Navy, they happily changed Service for the opportunity to fly in the ADF. Due to Air Force's popularity and the large numbers of applicants for Air Force pilot, it can take longer to be offered a position in that Service. Further, as gaining selection in the Air Force is more competitive, many pilot candidates opt to join the Army or Navy in order to achieve their flying dream. It seems that recruiters may also have some cunning ways of convincing pilot candidates to consider joining the Service with the most vacancies!

> *And he [the recruiter] says, "Well, have you thought about helicopters?" And I said, "Well, I've never really thought about … I didn't want to be in the Army or the Navy. I always, sort of, wanted to be in the Air Force… So he, sort of, said, "Just have a think about it. Go talk to the senior naval guy here and just see what opportunities there might be". 'Cause the Navy at the time was really short of pilots.* ***(ADF pilot)***

However, irrespective of their initial preference for the Air Force, interviewees soon developed a strong affinity towards their particular Service and mode of flying. All Army and Navy pilots expressed a great passion for their Service, their flying role within it and the type of aircraft they were trained to fly.

> *… I did come up to HMAS Albatross just before Christmas (year removed). I spent some time with the pilots there, with all the squadrons and everything, and felt this is where I want to be. These are the people that I want to work with and these are the values that I want to pursue. This is the road, it just felt right.* ***(name removed, Navy Pilot)***

The majority of currently serving Air Force pilots also felt an affinity for the Air Force and their particular flying platform. However, almost all Air Force interviewees and a small number of women from the Navy and Army still harboured disappointment about not being selected to pursue the fast-jet pathway.

Military pilots were also questioned regarding whether they had actively considered a commercial aviation flying pathway. In response, ADF interviewees reported that they did not feel inspired by the prospect of flying commercially, primarily due to the perceived lack of excitement and operational purpose.

> *It was always going to be flying, yeah… like if I scrubbed from here, I don't think I'd stay in the military. It is the pinnacle of flying, and the operational, like I've never wanted to go to the airlines and I still don't.* ***Really?*** *Oh, god no [laughs]. It's just not flying, it's operating machinery, I may as well sit and operate a power plant of some description and I'm very much a kind of hands and feet, kind of just actually wanting to do flying kind of person.* ***(Peta, Air Force trainee pilot)***

> *I'm not really interested in it.* ***So what is it about commercial flying that doesn't interest you?*** *I don't know, it kind of seems like you're being a chauffeur kind of, so I don't know. I like the idea of having an air power role for something, you know, not just like carting people around.* ***(Tamson, Air Force trainee pilot)***

Peta and Tamson's quotes summarise the general feelings of ADF pilots towards commercial flying. That said, a number of Air Force pilots, at later career stages, did feel that, while perhaps less exciting and rewarding from a flying perspective, a commercial flying career may offer improved work/life balance and locational stability. Chapter Seven explores this issue in greater depth.

When asked if they had ever considered an ADF flying career, commercial and general aviation pilots spoke very highly of military flying, perceiving it to be exciting, adventurous and highly prestigious. Some civilian pilots were excited by the prospect of flying fast jets whilst others spoke warmly of the humanitarian, emergency relief and peacekeeping work conducted by all three Services. Aside from the flying aspects, being funded through flying training was also extremely attractive to civilian interviewees.

After outlining the many positives, I was surprised to learn that very few civilian pilots had ever applied to become pilots in the ADF. It quickly became evident that, while the majority of those interviewed in this study had, at some stage, actively investigated a military flying career, there were barriers impeding their entry. The main one, as evidenced in almost every interview, was the required lengthy contractual tenure for ADF pilots. This period of tenure is called a Return of Service Obligation (ROSO) and can be as long as twelve years for Air Force pilots. Learning of the ROSO stopped most potential pilot applicants in their tracks.

> *Dad was saying to me, "You know, look, if you go with the military, they're going to actually pay you, yeah. But as soon as I asked one of those pilots, I said "You know, how long's the contract for?" and he said "Something like 12 years and it's non-negotiable". And I just went nup, not happening. Crazy. Yeah, I just, I couldn't get past that in my mind, I just thought that's ridiculous … basically in the prime of my life and [laughs] and I'm tied to these people.* ***(Narine, civilian student pilot)***

> *I did think about the Air Force … I did always think maybe I could go through to do my training and get it all paid for. That would've been a really big drawcard for it, and then go onto the airlines once I've done my stint there and then it's something like ten or twelve years you have to stay with them, so that was one of the deterrents.* ***(Callie, civilian flying student)***

Like Narine and Callie, other interviewees who investigated the military flying pathway were deterred by the lengthy contractual commitment required. The data from this study determined that this was *the* primary issue impacting on civilian interviewees' willingness to pursue ADF flying careers.

> *Yeah I think so, if it wasn't as long. It is a big chunk of your life. And I suppose yes, when I look at it now, going in at 18 years, I'd be finished my return of service by now. But you don't think of it like that when you're an 18-year-old, you think, "Oh my God, 32 is old!" and I think I'm so young.* ***(Sabine, commercial pilot)***

> *When I started to learn to fly, I rang them [Defence recruiting] up and they said it was an eight to ten year return to service and when I was 18 that just seemed like forever. Because you know, I'd be like 28 by the time I got out.* ***Do you think you might have joined if the commitment was shorter?*** *Yes, definitely, because that was the reason why I didn't do it.* ***(Tiff, commercial pilot)***

The two quotes above reflect the views of almost every interviewee in this study in relation to selecting a military flying career pathway. Focus group data from Gap Year cadets showed very similar findings. When questioned about why the contract seemed so daunting, a number of interviewees referenced their desire to have children in their twenties as a primary factor.

> *I didn't want to sign up for a 10-year ROSO straight out of high school.* ***Why***

> ***not?*** *Yeah, well, because if you join up when you're 17, you still get out at 27; but most people want to have a family and whatever before that. And you can't fly if you've got – if you're pregnant. And being women, that's like – if you want a family before you're 25.* ***(Gap Year cadet)***

Others simply did not want to feel committed for such a long time so early in their lives, noting the lack of choice and freedom attached to a contractual obligation. Irrespective of their reasoning, the twelve-year commitment was completely untenable to young women seeking flying careers. These are women who had already decided to fly, and as such, present an excellent recruiting option for Defence flying roles. Although it is difficult to ascertain whether this obligation is similarly de-motivating for some young men, the ADF has never struggled to attract men into flying roles.

The contracted period is designed to ensure that the ADF reaps maximum return-on-investment from lengthy and expensive flying training. However, the ADF must decide if there are *different* organisational cost-benefits involved in attracting higher numbers of women pilots. One measure it could take would be to remove, reduce or somehow mitigate the lengthy contractual obligation.

A small number of civilian pilots, such as women and girls in the focus groups, also cited the perceived difficulty of entry into ADF aviation as another deterrent.

> ***Did the military pathway ever cross your mind?*** *I just heard about the tests being quite hard to pass, so I guess I didn't give myself a chance to look at that further.* ***(Barb, commercial pilot)***

> ***Did you consider the military?*** *Not at all. Not until one of the persons mentioned it. I don't know, after the training, one of the other girls was looking into it but I was like oh, but I never, I always got told that to be in the Air Force to be a pilot you had to be in the top two percent of your class and*

> *then that's what we always got taught ...that's like the whole myth, so I never even thought about it [laugh] which is, I don't know, if you have to be smart or not.* ***(Roxy, general aviation pilot)***

Once again, as the perceived difficulty attached to military flying may be impacting on ADF pilot recruitment, mitigating it may also be necessary to increase women pilot numbers. A small number of civilian applicants who were not deterred by the ROSO or degree of difficulty did apply to the ADF but found their entry limited by other barriers and challenges, including mandatory subject prerequisites, medical issues and an inability to pass the required pilot aptitude tests. These barriers are explored in detail in the next chapter.

Conclusions

Although flying was viewed by most women and girls in this study as an exciting, prestigious career, the negative perceptions of it outweighed the positives in every focus group. Many participants were disinclined to pursue flying careers in any aviation milieu, primarily due to their perceptions that flying is too difficult, dangerous, holds too much responsibility and is 'not a job for women'. On the basis of these findings, it would seem that supply or choice theories do indeed offer some explanations for women's continued under-representation in both military flying and flying generally.

Focus group participants without any exposure to aviation viewed flying as a manly job that should be undertaken by men. This finding supports the occupational stereotyping theory as an explanation for women's under-representation in flying roles. The 'not a job for girls' sentiment was quite confronting coming from maths- and science-inclined girls already functioning within aviation or Defence. For them, the perception of flying as a masculine career had been shaped by exposure to 'typical' pilot identities and stereotypes which could appear unwelcoming to young women. Media influences have been quite unhelpful to changing perceptions of flying as a 'boys' club'.

The perceived level of difficulty was another factor impacting on girls' views of both military and civil aviation careers, with numerous focus group respondents stating they 'wouldn't be smart enough' to become a pilot. This finding supports Bandura's (1977) renowned social cognitive theory which contends that women's and girls' lack of self-efficacy may prevent them from pursuing certain career choices. For pilots, this theory holds that women would avoid flying because they feel they are unlikely to succeed in that occupation. The data suggests that that theory is highly relevant to Air Force aviation, which was viewed as simply unattainable by all participants from all focus groups. It seems that the carefully garnered 'elite' image of Air Force pilots may prove counter-intuitive when it comes to recruiting women pilots.

The wide range of factors impacting on women's recruitment as ADF pilots demonstrates that Defence will need a multi-faceted range of interventions if it is to increase the ranks of women in military aviation. Many young women simply view all forms of flying as untenable, a perception which may be formed at a very young age. Changing these deeply entrenched and highly gendered opinions will require a multi-faceted approach targeting both supply and demand barriers. This research indicates that, without dedicated efforts to remove the barriers and change women's and girls' perceptions, there is highly unlikely to be an influx of women into piloting in forthcoming years.

CHAPTER FIVE – GAINING ACCESS TO ADF FLYING ROLES THROUGH SELECTION PROCESSES AND TRAINING PATHWAYS

CHAPTER FIVE – GAINING ACCESS TO ADF FLYING ROLES THROUGH SELECTION PROCESSES AND TRAINING PATHWAYS

Introduction

The analysis and discussion in Chapter Four determined the existence of a variety of factors impacting on women's and girl's inclinations towards Australian Defence Force (ADF) flying careers. This chapter addresses a further range of gender-based barriers and challenges faced by women through two critical career stages; pilot entry and training. These career stages are examined in relation to academic literature, the ADF's policies and processes for selection and training, and the empirical data generated through his research.

The data that forms the basis for much of the discussion in this chapter was drawn from interviews with ADF and civilian women pilots, past, present and future. Data was derived from responses to questions such as 'How did you arrive at your current career?' and 'Tell me about your training experiences?' Including data from civilian pilot interviews enables a comparison of the barriers and challenges found in different aviation pathways. This is helpful to determining if the hurdles encountered through early career stages are inherent only in ADF aviation or pertain to the nature of flying more broadly. Each career stage under analysis in this chapter requires an appreciation of the environment and literature relevant to that discussion. As such, the background, theory and literature of relevance to each career stage is presented both at the start of each section and throughout the analysis and discussion.

Pathways to piloting – analysis of contextual considerations

An appreciation of entry and training considerations relevant to different flying pathways is necessary for situating the findings outlined in this chapter. The two different aviation contexts, civil and Defence, have very different entry and training pathways, each with its own set of challenges. While these challenges are not necessarily gender specific, they do 'set the scene' for the discussion of gender-based barriers in the ADF.

There are two primary ways by which pilots can become qualified in civil aviation. The first entails undertaking a cumulative series of flying lessons and examinations at private flying schools which generally requires around 12 to 36 months to gain a commercial licence and is likely to cost between $60,000 and $120,000 (CASA, 2013). As this model does not require specific school subject qualifications or flying aptitude, anyone with the financial means and appropriate medical status can learn to fly.

The alternative to the flying-school model for civilians is a university-based Bachelor of Aviation (BAv) course which is usually a three-year degree program involving theoretical and practical flying components. Most universities partner with a local flying school to deliver the latter practical component. A relatively recent initiative, government-funded 'fee-help'[1], has made flying more accessible to students without independent financial means. Again, pilot aptitude is not a prerequisite and students who have the entry score required for their particular university can select this degree stream usually with no specific high school subjects required.

Pilots intending to pursue a career in aviation after their training through either the university or flying school models must attain sufficient flying hours, experience and appropriate licences and ratings. There are very few genuine, fully funded flying cadetships or scholarships offered in Australia, which makes the early years of piloting quite financially (and sometimes emotionally) taxing for many civilian pilots. Most early-career pilots are poorly paid, with many working a series of menial jobs in order to fund additional flying hours, lessons, ratings and licences. Once qualified, they can apply to the airlines; again, this is highly competitive, with their sometimes having to wait many years to be selected.

[1] 'Fee-help' enables students to defer the cost of their university fees until their incomes reach a certain tax threshold.

Given the arduous and financially taxing nature of the civilian pathway, many women seeking a flying career investigate the ADF as a possible option but, as previously noted, most are deterred by its lengthy contractual obligation. Those who do opt for this recruiting pathway may then face other barriers and challenges that can impede their opportunity to access an ADF piloting career. Some of the barriers which apply to all candidates are addressed in the following paragraphs, while the degree to which they may have a disproportionate effect on *women's* entry is explored throughout the remaining chapters.

All ADF pilot candidates (Navy, Army and Air Force pilots) must pass a lengthy and arduous ADF pilot recruiting process in order to be selected for entry, with their choices of high school subjects the first barrier they face. There are stringent requirements to pass tertiary entrance-level mathematics (with a physics component) and achieve solid grades in subjects such as chemistry, geography and physics (if undertaken). Candidates who don't meet these criteria will generally not be able to continue any further down the recruitment pathway.

ADF candidates must also meet a further series of entry requirements and stages in order to be considered for selection as ADF pilots. For most, this highly competitive process entails intelligence testing, a career interview, a medical check and pilot aptitude testing at Defence Force Recruiting (DFR). Those who successfully complete this process must then undertake two weeks of residential flight screening and testing at the Pilot Selection Agency (PSA) located in Tamworth in regional New South Wales. This phase includes practical flying, further testing and interviews with a psychologist and, finally, a Pilot Selection Board.

In order to be selected, all military pilot candidates must meet high standards of mental acuity, hand-eye coordination, academic ability and officer/leadership qualities. Only a small percentage of those who apply will have the requisite intellect, skills and officer qualities to be selected. If successful, as determined through this rigorous selection process, a pilot is offered a position on the basis of

Service preferences and ranking. As previously noted, pilots who are not competitive for entry to the Air Force (which has higher selection criteria than the other Services) may be offered a piloting role in either the Army or Navy. Although some currently serving ADF members may apply to transfer across to the pilot occupation, these in-Service entrants must still undertake the pilot-specific selection and testing processes at Tamworth.

Also of some relevance to this study are the two entry processes for Army pilots' which differ slightly from those for Air Force pilots. The first is as a direct-entry pilot which entails undertaking a much shorter Army training course before commencing military flying training. The other is via General Service Officer (GSO) entry, whereby cadets join the Army to become Officers, but their actual occupation is not determined until towards the end of their lengthy eighteen-month Officer training.

Before commencing a pilots' course and associated flying training, many candidates from all three Services attend three-year degree programs at the ADF Academy (ADFA) in Canberra, where direct entrants undertake a much short Officer training course. Irrespective of the entry model, the initial phase of flying training for *all* Defence pilots is an Air Force-operated program conducted at the Basic Flying Training School (BFTS), Tamworth, which takes approximately six months.

This intensive pilot training course is deliberately insular, whereby trainees eat, study, socialise and live together for its duration. Flying training is extremely expensive and, in such a small defence force with minimal room for aircraft wastage, highly skilled pilots are a critical capability requirement. Therefore, only the most skilled trainees capable of learning at an accelerated pace within a highly pressurised environment can graduate. Course failure rates of thirty to fifty per cent at BFTS are not uncommon, with students unable to cope with the training's intensity and performance pressures quickly 'scrubbed'[2].

[2] This is ADF terminology for students who fail through flying training.

After completing their training at BFTS, Army pilots proceed to Army-specific rotary-wing conversion training in Oakey, Queensland, before pursuing careers as rotary-wing pilots. The next stage of training for Navy and Air Force pilots focuses on flying jets at the Number Two Flying Training School (2FTS) in Western Australia, which generally takes around ten to eleven months to complete. Navy graduates of 2FTS proceed to Navy-led rotary-wing conversion training and naval flying careers while those from the Air Force are ranked in order of skill, with the highest ranked having the option to pursue fast-jet (fighter) conversion. Others are posted to a range of different flying squadrons to continue their training.

Gender-based barriers to entry

The aim of this section is to determine the existence of any gender-based barriers and challenges facing women through ADF pilot entry processes. Recruitment is a known barrier impeding women's access to other non-traditional fields. Bagilhole makes this explicit, stating: 'the very first obstacle that women face with male-dominated occupations is making it through the recruitment process, be it formal or informal' (2002:100). Of particular relevance to this study is Hansen and Oster's contention that elements of pilot selection processes in *both* military and civilian aviation 'create obstacles for non-traditional candidates' (1997:142); some of these are addressed in this chapter.

As previously noted, high school subject choices may be the first barrier women face when seeking ADF flying careers; this is a military-specific barrier that does not preclude access to civilian flying pathways. Three civilian interviewees in this study cited their lack of qualifications in high-level high school mathematics as preventing them from progressing through the ADF pilot recruiting process. While subject selections are a barrier to all candidates, women's and girls' known preferences for humanities-based subjects has been shown to limit their access to other non-traditional careers requiring maths and science subject backgrounds (Melkas & Anker, 1997; Bagilhole, 2002), as may be the case with ADF piloting.

A review of interviewee data concerning subject choices showed that the majority of civilian pilots studied humanities- and arts-based subjects at school. Four younger civilian/student pilots actually majored in dance and had deliberated between dancing and flying careers! While civilian pilots without strong high school maths and science backgrounds did find elements of ground school more difficult, they mitigated these challenges through hard work and additional study.

Other organisations and universities also offer bridging courses and additional support for students who do not meet mandatory subject requirements. The ADF may currently be limiting its access to capable pilot candidates because of the mandatory subject criteria. Although a high level of mathematical ability is a prerequisite for BFTS due to its intensity and pace of training, there may be options for mitigating high school subject selections as a possible barrier.

An analysis of empirical data relating to interviewee's experiences through pilot aptitude showed that the tests themselves may also be a gender-based barrier to women's entry. While the testing process and actual tests are inarguably difficult for most candidates, PSA and DFR data show that women statistically under-perform on them compared with men. It is not possible to ascertain from simply viewing pass/fail ratios whether the ADF's testing regime has a gender bias that adversely impacts on women. However, at the time of commencing this thesis, the ADF had not actively investigated the issue of possible gender biases in testing in any depth.

However, some overseas studies addressing gender biases through military pilot selection show that aviation selection tests may have a gender bias that disadvantages women. Helm and Reid (2004) for example, undertook research on the degree to which race and gender were factors in flight training success in the United States Navy. They determined that 'hundreds' of worthy female United States Navy pilot candidates may have been rejected on the basis of inaccurate, gender-biased aptitude testing (Helm & Reid, 2004:123).

Other research indicates that, as well as being gender-biased, military pilot aptitude testing may also under-predict women pilots' flying abilities. Carretta's study of United States Air Force pilot testing showed that, 'despite sex differences in mean test performance', the actual 'acquisition of additional flying knowledge and flying skills showed similar results for men and women' (1997:6). Although the ADF has not conducted specific research to assess the existence of gender biases in testing, research from other countries indicates that this area warrants further consideration. Interviewees referenced one particular test as being problematic:

> *Yep, at that stage, it was an Air Force pilot, there was a certain aptitude test that I couldn't pass. It was the spatial awareness test. I have got my own views on this. I don't think it was a very good test for females… I cracked the shits with the Air Force and I went, screw you guys, screw the whole military because it had been such a drain and I had studied so hard for it.* ***(Bianca, Air Force[3] pilot)***
>
> ***Do you think that your gender has had any kind of influence on your career whatsoever?*** *I think if my gender means that I can't pass a spatial awareness test, then yes, 'cause I would have been a pilot 15 years ago.* ***(Erika, Air Force pilot)***

Like Bianca and Erika, the majority of ADF pilot interviewees in this study failed their first, and sometimes second, attempts at pilot aptitude testing. Interviewee data (similar to Bianca's insights), coupled with information obtained from the PSA psychologist, indicated that women's testing issues could be attributed to one primary aptitude factor, spatial intelligence or spatial reasoning. Spatial intelligence

[3] In the quotes, Air Force pilots are described as 'Air Force'; Army and Navy pilots are described as ADF pilots, because the very small number of Navy pilots may enable individual women to be identified if described as 'Navy'.

'allows a person to use visual and tactile ability to accurately perceive and act on objects in the environment (Sitler, 1998:10).

Interview data indicated that the biggest issue women candidates had was with a test in which they had to read certain gauges in relation to aircraft orientation.

> ***Do you know why you didn't get through the first time?*** *Yes, it was the aptitude test. So, the second stage.* ***Do you remember the aspect of the aptitude test?*** *Yes, it was I think, it wasn't the spatial limitation, it was reading gauges and it was a choice of four gauges… and I think because I've never really used that, I transposed it so that when the wings were pointing left and horizon was right, I mixed those two up. And that was the only thing that I was told about.* ***(Grace, ADF pilot)***

> *I failed the first time around. It was one of the tests, and I think I worked out that it was the reading gauges quickly test. Apparently on that fuel gauge exam, I only missed by two marks out of 100, or something. I passed the other 14 tests. They told me I could be a navigator, and I told them to get stuffed, I'd be seeing you in 12 months.* ***(Sandy, Air Force pilot)***

Civilian pilots in this study who were not deterred by the lengthy contractual obligation also failed this test.

> *I just didn't get through all the [Air Force] testing. Yeah, it was probably a lot to do with spatial reasoning 'cause I know my spatial reasoning wasn't great. I am not prepared to go through it all again.* ***(Fin, civilian flying instructor)***

The literature offers some explanations as to why spatial intelligence may be problematic for women pilot candidates. A number of researchers have determined that girls and boys, and men and women do differ in their innate spatial

reasoning skills (Galea & Kimura, 1993; Robert & Chevrier, 2003). Kimura further postulates that men have an 'advantage in tests that require the subject to imagine rotating an object or manipulating it in some way' (1992:3). The data from my research and PSA testing results support this claim. An advanced level of this skill is critical to succeeding through the ADF pilots' course due to the rapid rate of learning and negotiation of complex military flying scenarios required.

When considering why women might struggle with spatial skills, Australian academics have recently released a study that attributes spatial differences to gender-role socialisation and differences in boys' and girls' play (Reilly & Neumann, 2013). In simple terms, boys' preferences tend to develop spatial and mechanical skills more so than girls' (Ruble & Martin, 1998; Reilly & Neumann, 2013). Nelly, a more-senior ADF pilot who failed her initial aptitude test, implicated childhood socialisation when considering her result.

> *I studied like, recovered and learned effects of controls and ailerons and rudders, all that stuff I didn't learn as a kid because it wasn't in my environment... not like boys, boys just know about ailerons and rudders and girls don't. They don't. They're too busy, I don't know, we're reading about horses and things.* ***(Nelly, ADF pilot)***

It might be argued that, if women lack the spatial orientation/object rotation skills necessary to pass pilot aptitude testing, they should not be selected as ADF pilots. However, that so many women *initially* failed their testing but *subsequently* graduated as pilots casts doubt on whether the current processes accurately assess women's true piloting potential. Their success through subsequent testing shows that aptitudes *can* be developed at a later stage, as supported by the following examples in the literature.

For example, academics from the University of Toronto determined that, after playing just ten hours of a video game, any differences between men's and

women's spatial abilities were virtually eliminated (Feng et al. 2007). Reilly and Neumann's (2013) study of gender differences in spatial ability also proves that, if *afforded opportunities* to develop spatial skills and through active practice, girls/women can *very quickly* achieve the same spatial capabilities as boys/men. Although women and girls may initially have a reduced innate spatial ability due to their upbringing, it seems that any deficiencies can quickly be eliminated through active practice. In summary, the ADF may potentially be missing out on recruiting skilful women pilots through the current aptitude testing process, primarily due to one particular spatial aptitude test.

Another finding from this study which warrants discussion is the Army's quite different approach to pilot selection. *All* GSO Army cadets are offered an opportunity to undertake pilot aptitude testing during their lengthy training pathway; an offer that many accept. There are no consequences to passing or failing this test but having an aptitude simply provides an additional career option to cadets who pass. This lack of pressure seemingly results in higher success for women who undertake this testing, especially if they have no previous interest in becoming pilots. Some Army interviewees in this study had not even considered a flying career until discovering through this testing, almost by accident, that they had pilot aptitude.

For many Army pilots, discovering the existence of a latent flying aptitude was the sole factor influencing their decision to choose this career. The Army's different aptitude-testing pathway may explain its higher ratio of women pilots as the testing model seemingly mitigates one of the main perceptions identified in the previous chapter; that ADF pilot testing is too difficult to even attempt. Success through aptitude tests arguably increases women's self-efficacy in relation to flying (Bandura et al., 2001), a finding which may have implications for the recruitment of ADF women pilots as well as other organisations seeking to diversify their workforces.

In addition to formal aptitude tests, the literature addressing gender biases in

selection processes shows a different type which could potentially compromise women's recruitment as ADF pilots. In a study of gender bias in the selection of women into management positions, Alimo-Metcalfe (1994) found that the assessment's behavioural guidelines had been developed on the basis of data drawn from all-male groups. This disadvantaged women as recruiters were looking for inherently 'male' behaviours to ascertain suitability.

Other academics contend that organisations are unwilling to hire workers who are not deemed 'gender appropriate' in accordance with societal norms (Anker, 1997, Padavic & Reskin, 2002). Within the commercial flying environment, Mills contends that the tightly held, stereotyped 'masculine' images of piloting and 'cultural rules about the ideal typical characteristic of the job holder' exclude women from pilot selection (1998:172). In his study of civilian flight instructor's perceptions of gender, Vermeulen also observes that 'stereotypically masculine traits are more often perceived to be desirable in pilots than stereotypically female characteristics' (2009:128).

Given the enduringly low numbers of women in ADF flying, it seems *highly likely* that the behavioural guidelines used in ADF pilot selection assessments were developed around men's personality characteristics, motivations, learner styles, attitudes and skill sets. This may impede women who compete for selection on the basis of 'male-based' sample population criteria. This process is further complicated by another factor within the military aviation context; the nature of military service and what constitutes 'a warrior' persona.

'Recruiting in one's own likeness' (Bagilhole, 2002:115) can negatively influence women's selection for other non-traditional occupations. Barry notes that, 'given one tends to appoint in one's own image, the fact that most pilots are men produces a self-perpetuating hegemony of male pilots (2005, in Bennett, S., 2006:52). This was originally referred to by Kanter (1977a) as 'homosocial reproduction' which is 'the tendency of people to select incumbents who are

socially similar to themselves' (Rivera, 2013:365). ADF pilot interviewees in this study expressed concern that ADF pilot selection panels, which are predominantly comprised of male pilots, may hold biased views about what constitutes a 'typical' pilot in the ADF. Interviewees felt that these views adversely influenced panel member's judgements about their suitability for the role.

One area in which gender-based differences were shown to be an issue is the way in which confidence was expressed by pilot candidates through the selection process. Four women in this study spoke of being penalised during their initial pilot selection panel interviews due to their perceived lack of *overt confidence,* which military aviators are expected to possess. Although interviewees who applied to be pilots did feel *inwardly* confident, they perhaps struggled to demonstrate it as overtly as their male counterparts.

> *So you had to sort of, exude a false macho confidence, that sort of aggression … it wasn't something that really was natural for me I don't think [laughs].* ***(Bianca, Air Force pilot)***

> *But women aren't brought up to be as outwardly confident as boys because boys don't like girls being outwardly confident. It threatens them…. but you are assessed on your confidence too, in a way, so you need to be, as a military pilot, you need to be confident.* ***(Margaret, former Air Force pilot)***

Candidates who were initially marked down due to their perceived lack of confidence spoke of practising being 'arrogant' and outwardly self-assured which must have worked. The literature and interviewee's own experiences suggest that pilot selection panels' views of what confidence *should* look like may be based on male behavioural paradigms; another possible barrier to women's selection. Other studies cite similar concerns regarding the selection of women pilots (Davey & Davidson, 2000).

Further, three interviewees also felt that their lack of 'stereotypical pilot' traits and interests, such as a life-long obsession with aviation and detailed knowledge of military aircraft platforms and specifications, may have affected how the selection panel assessed their interest in flying. Although women candidates were highly motivated, they may not have had the exposure afforded their male peers; which, again, indicated some perception issues that may influence women's success.

When this study commenced, the possibility of gender biases through selection processes was not given any consideration or attention by Air Force leaders. However, the literature and reflections by interviewees suggest that selection processes may be to the detriment of women candidates. Staff conducting selections in male-dominated organisations claim that they treat all candidates equally while holding a strong view of 'equality as sameness' (Bagilhole, 2002:134). However, as Acker wisely observes: 'gender is difficult to see when only the masculine is present' (1990:142).

In Defence, like many male-dominated organisations, 'equal' means policies and procedures designed to accommodate the majority (male) worker. Accordingly, women must adhere to male-based selection models to succeed through these processes. There is no acknowledgement that women may offer different skills, abilities and aptitudes or may enact the *same* attributes in a slightly different way. That so many women initially failed their testing but subsequently graduated as pilots casts additional suspicion on whether the current processes do accurately assess women's piloting potential.

The analysis and discussion in this section determined a range of factors that may be disproportionately affecting women's success through pilot selection processes for the ADF. There is also some evidence from the literature and women's own reflections that there may be gender biases impeding women pilot candidates progressing through the recruiting and selection processes. These initial findings, while only a preliminary review, indicate that this issue should be afforded further

attention by the ADF if it is seeking higher representation from women in ADF flying.

Gender-based barriers and challenges in ADF pilot training

Pilot training represents a rite of passage and potential barrier to all ADF members seeking flying careers as failure to advance through it essentially ends candidates' dreams of an ADF flying career. For Air Force students who do graduate, their success on this course can dictate their initial flying career pathways, with an inability to succeed having a direct correlation with the number of women pilots in the ADF. Therefore, this section seeks to locate the existence of any gender-based challenges impeding women pilot trainees' advancement through military flying training.

There are some noticeable anomalies in the training success rates for men and women students attending pilots' course. For Air Force students, the BFTS/2FTS combined pass/fail data from the years 2010 – 2013 shows that while men have a 61 per cent pass rate, women's pass rate is only 28 per cent.[4] While women's extremely low pass rate appears confronting, the gender-based disparity also makes the forceful point that women's much lower representation means that every failure becomes more statistically significant. However, the differences between men's and women's pass/fail rates on pilots' course also warrants further consideration within the context of this research.

Gender-related differences are known to thwart the training success of women in other non-traditional fields. This may be because the 'normal atmosphere of non-traditional jobs begins with a training system which is dependent upon devaluing and excluding the feminine' (Eveline, 1998:97). For women pilots, the gender-based barriers and challenges when learning to fly have been explored through a range of different research projects (for example: Turney & Bishop, 1999, 2004; Turney, 2000, 2004a; Turney et al., 2002a, 2002b; Davey, 2004; Karp, 2004; Sitler,

[4] Statistics obtained via email from the Air Training Wing Standards Officer 6 Aug 2014

2004; Germain et al., 2012). The primary goal of many of these research projects was to improve women's success rates through flying training and, thus, increase the overall numbers of women pilots.

The literature addressing gender-based barriers for women pilot trainees in civilian aviation shows that they are likely to face many challenges as they progress through their training pathway. Some barriers are cultural and relate to the highly masculinised nature of flying training (Davey, 2004; Germain et al., 2012) while others are social and borne from women's loneliness and isolation in an environment in which they have very few women peers, instructors and role models (Germain et al., 2012). Barriers can also pertain to curriculum-based issues, instructional styles and differences in how men and women assimilate knowledge in the cockpit (Turney et al., 2002; Sitler, 2004).

In addition to those listed above, which seem common to both military and civilian contexts, a range of further curriculum-based, learner and instructional-style barriers and challenges were identified through this research. Cultural and social barriers were prevalent throughout the data drawn from interviews with ADF women pilots and current trainees. Training presents a major challenge for *all* military pilots, with only the 'best and brightest', and most capable graduating from the ADF Pilots' course. However, as this study indicated that women may experience an additional array of challenges, purely on the basis of their gender, investigating them is critical to the overall aims of this research project.

Curriculum-based and instructional-style challenges and barriers

Women pilots in the ADF, as well as interviewees who had failed pilots' course, spoke of a range of curriculum and learning barriers during our interviews. In ascertaining the most common challenge for them through their training, spatial aptitude once again appeared to be a problematic area for many. As previously observed, women and men may differ in their innate spatial aptitude. Within a learning context, they may also differ in their developmental learning of spatial tasks, with men generally outperforming women in this particular area (Kimura,

1992). Half of all ADF or ex-ADF interviewees spoke specifically of spatial issues being a major key learning challenge through their flying training.

> *I found that the hands and feet stuff I didn't have any trouble with. It was, we had to do, like just the instrument approach. Well, now I look back on it, it's easy, but I had trouble spatially, maybe, interpreting where it was going, what was going to happen.* ***(Ellie, ADF pilot)***
>
> ***Were there any aspects that you found particularly challenging?*** *Yes, the spatial awareness stuff… but it was all challenging, yeah.* ***(Deb, former Air Force pilot/current commercial pilot)***
>
> *I found aerobatics difficult because I didn't quite understand what they wanted me to do and the whole spatial thing started to come into it, where I had to imagine myself somewhere…I hadn't developed that.* ***(Bianca, Air Force pilot)***

This was a major point of difference between civilian and ADF women pilots' learning experiences, with the former rarely noting issues related to spatial orientation. When asked to describe the most challenging aspect of their flying training, the majority of civilian pilots cited ground-school subjects, such as engine systems, mechanics and physics. That so few civilian pilots referenced any issues concerning spatial awareness (only two of all civilian pilot interviewees) suggests that this issue may be contextual. The academic challenges for civilian students may be because many enter flying training without a sound foundational understanding of mathematics and physics. As ADF pilots must have proven academic ability in specific subject areas prior to selection, they are less likely to find these areas difficult.

While ADF interviewees may have initially struggled with spatial intelligence, those who successfully passed flying training clearly managed to attain the required

standard. That said, a number of ADF women felt that their understanding of spatial awareness could have been enhanced through the application of different teaching methods or additional targeted training. Women who did have access to instructors skilled at teaching spatial concepts in a *different* way found that this dramatically improved their flying performances and directly contributed to their being able to graduate from 2FTS.

> *[I was nearly failing] and I actually went to [the Chief Instructor] … and he's an intimidating character, but I'd flown with him a month or two previously and he just managed to 'get me'… I said 'I need help, I'm failing and I'm going to do scrub ride and I just don't understand this concept'. And he sat me down and he spun me around in the chair and he threw a pen and said, "Oh well, and here's a little dial, well that pen's the airfield and this is you". And he just took me out of writing it and learning on paper to this, to an actual 3D kind of concept, click, no worries.* ***So, if he hadn't done that? ...*** *Oh, I doubt I would have passed.* ***(Harriet, Air Force pilot)***

Harriet and other pilots' experiences, as well as the literature about men's and women's differing spatial abilities, indicate that women may need additional support and alternative training methods to improve their spatial intelligence skills. Research shows that any gender differences in spatial ability can quickly be overcome (Feng, et al., 2007) if women are afforded opportunities to develop their skills in this area. The self-paced nature of civilian flying training means that student pilots have additional time and, therefore, enhanced opportunities to learn spatial skills whereas ADF pilots do not have this luxury.

Further, while civilian pilots can select an instructor who best accommodates their learning needs and can assist in their understanding of spatial awareness, ADF students must work with the instructor they have been allocated. These different training pathways may explain the wide variation between military and civilian pilots' experiences around developing spatial awareness skills. As ADF women's

struggles with spatial ability stymie their success through *both* selection and training processes, this issue deserves further consideration if higher numbers of women are to progress through these two critical entry stages.

Harriet's earlier quote about needing to have a concept explained in a '3D' [three-dimensional], physical way hints at another training barrier besides spatial awareness. Her quote alludes to the criticality of using the 'right' instructional technique to maximise student learning outcomes. She needed to *see* the concept enacted to make sense of what was being explained to her in writing while other pilots expressed different preferences for learning a concept.

> *I am really, I think, probably as a female, really in tune with how I learn best so I'm very much a pictures person. So I was always the one on my course who did the diagrams and photocopied them for everyone to look at.* ***(Xanthe, Air Force pilot)***

Xanthe's statement that she is 'more of a pictures person' reflects some self-awareness about her preferred learning style and how to best arrange information to maximise her learning capability as a self-identified 'visual learner' (Karp, 2000). When learning to fly, students may be auditory or kinaesthetic learners, as observed by Karp (2000) in his analysis of University-based aviation training programs. He maintains a strong view that different instructional techniques are required to maximise different styles of aviation-student learning. In addition, numerous other researchers cite the many advantages associated with matching learning styles with learners and instructing in a way that capitalises on student strengths (for example, Honey & Mumford, 2000; Brew, 2002; Kolb & Kolb, 2005).

Data from this study supports previous research about learning to fly. Other interviewees, in addition to Harriet and Bianca, spoke at some length about needing to have certain concepts taught to them in a *different* way so that they could better understand them. Unfortunately, at the time this research commenced, there was

minimal consideration afforded to ADF students' different learner-style preferences when allocating instructors to students. A number of pilot interviewees, both junior and senior, spoke critically about the ADF's current unwillingness to consider learners' preferred learning styles and needs during flying training.

Those few women who had had the opportunity to work with instructors who 'got them' found the experience inordinately positive. A number of interviewees directly attributed their success on the pilots' course to being matched with an instructor who best facilitated their learning needs. Sometimes, this only occurred once they entered remedial training or at a point when they were close to being 'scrubbed'.

> *…Like, I couldn't wrap my head around the concept of what you actually had to do to fly the line to get yourself around. And just little basic things like that. And as soon as I had that explained to me in different terms, you know, it all went click.* ***And did your instructor voluntarily do that?*** *I actually - I failed a flight before I had – I failed my first solo check. And I got a remedial flight for that with a different instructor. And that instructor helped me a lot. Like my first instructor did not, I could not fly with him… And I flew a couple of flights with him [a different instructor], and I was just like, "Oh wow, okay. I can fly!".* ***(Chris, ADF pilot)***

On the surface, this issue of matching instructional style to a learner's needs appears to be gender neutral. Indeed, Karp notes the need for aviation programs to 'design their curriculum and delivery vehicles to meet their students' specific learning styles, whether they are male or female' (2000:10). However, several interviewees, including Bianca, felt that the failure of BFTS and 2FTS staff to consider student pilots' learning needs and differences within the military environment may, once again, disproportionately impact on women.

> *I think it is and, interestingly enough, they don't actually test your learning*

> *style…because I don't think they've tailored the training to take into account that females do learn differently to males.* ***(Bianca, Air Force pilot)***
>
> *… guys don't get girls. Like, enough marriages show us that, that they don't really understand the intricacies of girls so I think male instructors probably find it difficult to read a girl and read what's going on.* ***(Pauline, Air Force pilot)***
>
> *… there was a female student there at the time, in fact [name removed]. And she was having some troubles and they asked me to have a flight with her to see if I could sort of help her out, girl to girl because girls learn differently to boys.* ***(name removed, former Air Force pilot)***[5]

Interviewee's observations that 'females do learn differently to males' have some academic validity. There is extensive literature, across a range of disciplines, addressing gender-based learning differences between men and women from both physiological and psychological/cognitive perspectives (for example, Ehrman & Oxford, 1989; Galea & Kimura, 1993; Halpen, 2009). Specifically with regard to flying, Hamilton's (2011) large-scale survey project encompassing pilots from all aviation streams, found that gender-based instructor-student communication incompatibility was one of the primary barriers to women's success when learning to fly.

While women may have different learning needs, ADF interview data suggests that they are not always being met through either BFTS or 2FTS. This may be because curriculum and instructional packages for both stages of pilot training were developed to meet the learning needs and preferences of all-male pilot student populations. Activists in women pilots' training space, such as Hamilton (2011), urge flying schools to develop 'female-friendly flight training' that acknowledges women's different learning needs and builds their confidence in the air. The

[5] This pseudonym has been removed because so few women have instructed at ADF flying schools.

targeted consideration of women's specific learning needs within the ADF context may result in higher numbers of women graduating from this rite of passage for military pilots.

When specifically discussing the instructional techniques used by some instructors at BFTS and 2FTS, a number of interviewees referenced some fairly extreme training measures that did little to help build their confidence. Yelling, screaming and other angry instructor reactions appeared several times in ADF interview transcripts.

> *And the instructor that I had before was … he's a bit of a screamer. Nice guy, it wasn't a personality thing or anything… Get into the aircraft and he'd just start yelling at you and it just didn't suit my learning style.* ***(Jess, former Air Force pilot)***
>
> *But there was a few of them [instructors] that just, you know, it was their main effort to make me cry on every sortie, for example, because it was amusing to see if they could break me.* ***And did they?*** *No. Yeah, one of them liked to yell.* ***(Nelly, ADF pilot)***
>
> *Yeah. I think that was - that was the issue with the first instructor. And also that he - he seemed to get angry if I didn't get something right the first time. And that just then – it does, it makes you uncomfortable.* ***(Chris, ADF pilot)***

One ADF student who was undertaking training at the time of our interview spoke of being given an explanation of a concept and, when she failed to understand, the instructor repeated exactly the same explanation, only more loudly. Interviewee data indicates that the *majority* of instructors at both BFTS and 2FTS are/were excellent at meeting students' needs. However, some interviewees did find the attitudes and instructional styles of some to be very confronting, especially when struggling to understand a flying concept and needing additional instructor support. The literature about women's learning needs also indicates that 'negative'

instructional techniques can be more problematic for women learners (Sitler, 1998; Turney et al., 2002).

Women aviation students prefer to learn flying through collaborative, participatory interaction (Sitler, 1999) whereas men react better to 'debate style situations where they pursue knowledge by ritual opposition' (Turney & Bishop, 1999:1). Unfortunately, there was extensive data suggesting that 'ritualistic opposition' remains a preferred technique for some (but certainly not all) flying instructors within ADF flying training. Of note, civilian pilots did not refer to any similar reactions from civilian flying instructors, possibly because they have the option to 'vote with their feet' if they find an instructor's technique unsatisfactory.

Largely due to their curriculum-based struggles and the nature of military pilot training, the majority of all ADF interviewees suffered a substantial decrease in their confidence through flying training. As observed in Chapter Four, women pilots generally commence their training with high levels of confidence, strong self-esteem and self-efficacy. However, this changed drastically for most learners through the pilots' course, with a large number in this study speaking of 'scraping through' their flying training towards the lower end of the graduation order and their confidence being dashed in the process.

> *… generally, the girls have a confidence thing and I don't know whether that's a trying to prove yourself in a man's world thing. If any of them have stumbling blocks, it really comes down to that, it's just a confidence thing.* ***(Lisa, former Air Force pilot)***
>
> *[Because of her experiences at BFTS] … I went into Perth [2FTS] with the mindset of I wasn't good enough to be there. So I had a big confidence – huge confidence issue.* ***(Narelle, ADF pilot)***
>
> *And I do think, you know, girls, your confidence can get rocked. If you don't*

> *have a really good solid base there.* ***(Pauline, Air Force pilot)***

Without data from men pilots, it is difficult to know if they too suffer from a decrease in confidence during their training. However, the literature does show that women's tendency to lose confidence and self-efficacy is a barrier that impedes their success as pilots through civilian aviation training (Hamilton, 2011; Germain et al., 2012). Studies of women learning to fly also demonstrate that women may be more heavily burdened by confidence issues than their male peers (Sitler, 1998; Germain et al., 2012).

This is primarily because women may gain their sense of self and confidence from their interactions with others, and criticism serves to both make them more vulnerable and undermine their self-esteem (Kram & McCollom-Hampton, 2003). Low confidence can create self-doubt in vulnerable learners, leading them to question their own ability to graduate from flying training (Sitler, 1999; Turney et al., 2002; Germain et al., 2012).

> *And the girls do tend to have, and I know I did, and I know (name removed) did and I know other girls have more confidence problems. If you can teach them in a slightly different way to build up that confidence because a lot of the blokes I think are quite good at deflating the confidence on pilots' course then that would really help.* ***(Margaret, former Air Force pilot)***

Margaret's assertion about men deflating women's confidence on the pilots' course was reiterated by other interviewees. Some staff (particularly one long-term civilian instructor who was referenced in a number of pilot interviews) apparently felt compelled to give women students 'a harder time in the air'. Certain staff further diminished women's confidence through verbal jibes and negative statements about their ability to pass the course.

> *Being treated differently … there were a few older instructors… one particular one; I think he is still there and every girl who has flown with him has had problems and he has said that girls are not meant to fly.* ***(Grace, ADF pilot)***

> *When I got to 2FTS, the [position removed, senior member of 2FTS staff] called me in and said, "Look, no girls pass this course so, you know, do your best but be realistic. We can talk about your other options now or later". Like, day one or two of being there. And I was like, "Oh that's great, thank you".* ***(Harriet, Air Force pilot)***

> *He was my instructor. And he failed me – well, he was the instructor that I had for that particular test… he had me for the second flight and even the guy that was running the simulator at the time said to me, "That was better than the boys, you did really well" and he still failed me. Yep.* ***(Cindy, ADF pilot)***

Civil aviation's desire to see higher numbers of women entering its pilot ranks has invoked a substantial amount of academic and informal research addressing women's learning needs in aviation training contexts. There are several projects, such as Dr Penny Hamilton's (2011) large-scale 'Teaching Women to Fly' initiative, that seek to improve women's success through flying training. ADF pilots' personal reflections, when viewed in conjunction with academic literature, demonstrate that women have different learning needs when undertaking flying training.

Failure to consider these learning needs in the ADF context arguably impacts the ADF's ability to graduate higher numbers of women pilots. Unfortunately, when this study commenced, the ADF had not afforded any consideration to gender differences when learning to fly and women's specific learning needs within the military pilot training continuum.

Social and cultural barriers and challenges

In addition to curriculum-based and instructional challenges, previous research has determined that women pilot trainees also face additional gender-based stressors when learning to fly which can be cultural and/or social in nature. Some of the major stressors include having to constantly prove themselves capable as pilots, feeling the need to be accepted by the dominant group and acclimatising to the 'macho' culture of flying (Turney & Bishop, 1999, 2004; Germaine, et al., 2012). These issues may be experienced by pilots in all aviation fields and, indeed, the aforementioned studies focused on civilian flying training. However, the empirical data from this study indicates that cultural and social challenges may be intensified for women undertaking military flying training due to the extreme levels of hegemonic masculinity prevalent within the ADF's flying training culture.

With regard to social barriers, one of the major ones cited by interviewees with military flying experience was their inability to integrate into the dominant group of male pilots at both instructor and peer-group levels. From an instructor perspective, women students spoke of struggling to interact with and relate to flying school staff in the same way as 'the boys'[6], with their gender being a noted barrier to building these relationships. While this had a negative effect on women's formal training, as previously observed, social considerations also affected their experiences as they felt unable to access the informal 'bar-side'[7] advice so readily offered to their male peers.

> *Like, whilst you can become one of the boys in your, sort of in your course, because you live with them, you work with them, whatever. It's not so, I think being a female it's a lot harder to gel with the male instructors, like because the boys will have a beer with them at the bar and the rest of it but, as a female, it's not really the same.* ***(Kerryn, unsuccessful Air Force pilot***

[6] Terminology used by numerous interviewees

[7] Friday evenings at both BFTS and 2FTS often involve student/staff drinking sessions.

trainee)

One of the big things I found … is the friendship male students develop with male instructors. They bond and build these great relationships that us girls can just never have. It's a real disadvantage. If you're too friendly or if others see you get on with instructors there will be rumours. ***(Carmel, unsuccessful ADF pilot trainee)***

Both Kerryn and Carmel felt that their inability to bond with male instructors was a factor in their learning experiences. Carmel's point about rumours concerning relationships between instructors and women students was reiterated in other interviews. On the rare occasions when women students and their male instructors did gel socially, there were often resulting (untrue) rumours about possible romantic entanglements, which led to both parties avoiding any further social contact[8]. Male instructors are perhaps justifiably wary of behaving in any way that might suggest inappropriate relationships with women students and this may influence their willingness to provide additional instructional attention to women students.

[When] I came here initially, [it] was, you know, with instructors talking to me, they had ten minutes and then they had to go. It was like, I was a walking sexual harassment claim, like it looked like that, every now and then I felt that people were just "no, I can't be seen with a girl for too long". ***(Peta, Air Force student pilot)***

While social barriers between women students and instructors were problematic, those between women students and their larger peer group had an even greater impact on their training success. As previously noted, women prefer to learn to fly through participation and collaboration (Turney & Bishop, 1999; Sitler, 2004).

[8] Instructors are not permitted to engage in relationships with students at any military training institution.

Beyond the standard need for 'military bonding', a large number of interviewees spoke of the criticality of bonding with the dominant (male) group of pilot student peers to ensure training success.

> *But you can get through the course doing [trying to cope by yourself] that but it's a lot harder because you don't get to share the information and the tips and the help with study and stuff like that... everyone learns differently and, if you're a girl that needs that interaction to learn, 'cause a lot of the guys would get together and study together and practise things. If you do learn that way, you really do need to be part of the group.* ***(Pauline, Air Force pilot)***

> *If you can't assimilate, then you stand out like dog's balls. And that's not what you want. You want to assimilate with those boys so that you're part of the group because – and it's the age-old adage of helping your mates get through. If you can't assimilate, you don't get help and you're not going to pass.* ***(Cindy, ADF pilot)***

Although women students needed to be part of the group to pass, the hegemonic masculinity prevalent during their flying training made this exceptionally difficult. Many interviewees missed out on the all-important learning collaboration so willingly afforded to members of the dominant group. 'Fitting in' was inordinately difficult for many women during the pilots' course for reasons further explored in Chapter Six. ADF and ex-ADF women pilots in this study spoke of some extreme forms of exclusion through their pilot training which had some extremely negative repercussions on their training outcomes.

This issue stemmed from the deeply entrenched aviation culture within the ADF which permeates all career stages, including training. Although culture is addressed in depth in the next chapter, I include the following quote by way of introduction to the topic, as it very succinctly encapsulates this theme:

> *…The guys who weren't welcoming, I had to live with and see around, it was a constant discomfort… I feel like I'm living in a foster home and my adopted parents don't want me. I just don't belong. And the feeling is unrelenting, you get no break. It is where you work, where you live, where you eat….it just feels like a constant fight, and you just get sick of having to fight all the time when men around you are having a ball.* ***(Carmel, unsuccessful ADF pilot trainee)***

Numerous ADF pilots spoke, sometimes quite tearfully, of a negative, insidious training culture which actively worked to deplete their confidence. Women were excluded from social gatherings, openly harassed (verbally and physically), sexually assaulted and subjected to ritualistic teasing and, sometimes, open hostility. A number of women experienced severe stalking behaviours by their peers, including damage to their car tyres, constant late-night phone calls and inappropriate photos texted to their phone and so forth. Some interviewees' struggles with coping in the face of an insidious culture impeded their flying performance to the extent that they ultimately failed their flying training. It is difficult to imagine any student thriving in the face of such prominent and pervasive social and cultural barriers.

To ascertain whether these issues pertain to military pilot training or aviation more broadly, I examined both academic literature and civilian interviewees' transcripts. With regard to civilian aviation, Mitchell et al.'s study of gender issues determined that 'many aviation industry pilots had negative perceptions towards women pilots which lead to gender bias, prejudice, harassment and discrimination' (2006:48). In my study, although civilian pilots related some challenges in integrating into the dominant group during training, their experiences were not as extreme as those of their military colleagues.

In this study, civilian pilot trainees' main issues related to patronising and/or paternalistic attitudes by older instructors and low-level gender-based teasing by

their peers while some felt that their instructors were 'too nice' and made allowances for their being women. However, they viewed these attitudes, while irritating, as generally well-intended and not aimed at offending or alienating. Although one or two more-senior pilots did share stories of mild sexual harassment and low-level bullying in a flying school context, younger civilian interviewees generally found their training experiences extremely positive and issue-free.

There are contextual considerations that may also be relevant to explaining civilian pilots' more positive experiences. At the end of a day of flying training, most civilian pilots can retreat to their family or friendship groups to gain respite from the masculinity of aviation. However, ADF student pilots have very limited options for respite due to the intensity of training, requirement to live in training accommodation and the remote localities of both the initial flying schools.

A number of interviewees reflected that higher numbers of women within the training environment may have had a positive impact on their social and learning experiences on the pilots' course. Their views may be valid as access to other women, as role models and peers, has been shown to make an enormously positive difference to women learning to fly through civilian training pathways (Turney et al., 2002; Germain, et al., 2012). Unfortunately, with so few women in ADF aviation, the students in this environment had/have very little opportunity to meet and engage with other women pilots as either peers or instructors. This lack of access was noted as a barrier by several interviewees.

> *But being a boy, like, or being completely surrounded by boys 'cause there was no female instructors out there either. There was nothing – it was awful, crying, it was awful, I hated it.* ***(Cindy, ADF pilot)***

> *…I honestly believe women learn differently. And so, therefore, it was nice to have a female instructor [in her pre-ADF general aviation experiences] because I seemed to click a lot quicker… Yeah, I really wish, if there was one*

> *thing I'd love to see here at 2FTS and at BFTS, it would be more female instructors.* ***(Mindy, ADF student pilot)***

It is perhaps unsurprising that ADF students spoke plaintively about the need for women instructional staff as when this study commenced, neither ADF flying school had any women instructional staff[9]. Further, neither school had any women in leadership or other senior roles, excluding the psychologist at BFTS. Civilian interviewees in this study, who had much greater access to other women pilots, reiterated the value of this through numerous positive reflections on their learning experiences.

> *Here, I actually had a female instructor for a while… I struggled a bit with my confidence initially because I was over-thinking things … she actually really helped me with that. I think she's been one of the positive influences on my flying here.* ***(Sonya, commercial pilot trainee)***

> *...when we went through the flying school, there were three female instructors and they were awesome. They were really positive, they were young, they weren't, I'll use the word stereotypical.* ***(Prinny, commercial pilot)***

Having access to other women pilots, especially in role model or instructional positions, may mitigate some of the barriers already detailed in this chapter. However, that so few women enter and succeed in ADF piloting means that there are very few women available to undertake instructional duties at any one time which creates a vicious cycle. To increase their success through training, women students need access to women instructors but, to generate a pool of women instructors, the ADF must attract and retain higher numbers of women pilots. This presents a conundrum that is not easily resolvable.

[9] Through the course of this study, one woman instructor was posted to BFTS in Tamworth and, more recently, another was posted to 2FTS in Pearce.

Having limited access to other women pilots at the peer level was also cited as a barrier by ADF women in this study. Other studies have determined that undertaking flying training without other women students to provide additional support exacerbates a student's sense of isolation and loneliness (Davey, 2004). While civilian pilots in my study generally had some access to women peers, many ADF interviewees reflected on the loneliness of being the sole woman on the course and the impact this had on their training experiences.

> *Being the only girl on course I felt quite alone, but anyway, getting through pilots' course was, I still don't know how I did it, to this day. It was tough. I just studied my toosh off. I guess maybe because I didn't have that stability, someone else to lean on, like it really affected me.* ***(Bianca, Air Force pilot)***

> *Yes, of course it was very lonely being the only girl, of course it was.* ***(Mindy, ADF student pilot)***

Interviewees spoke of feeling lonely, craving women's company and needing an empathetic ear from somebody who had genuine experience of 'walking in their shoes'. Being the sole woman, or one of very few women, also had consequences in terms of a student's visibility and ability to blend in to the larger group. Although there were some exceptions, women who were fortunate enough to undertake their training with other women spoke generally very positively about the difference this made to their learning experiences.

> *… looking back at my friendship with [another woman pilot], I think it was a real positive to have another girl along course with you or around at the time.* ***…*** *it just gives you that person that you can relate to in ways … we're different in a lot of ways.* ***(Tara, former Air Force pilot)***

> ***Were there other girls on your course?...*** *There was one other fortunately.*

> ***Did that make a difference?*** *It's good ... I think it makes a huge difference. My ... the girl I was on the course with and I are best friends. We're extremely close.* ***(Yasmine, Air Force pilot)***

Even if the women weren't necessarily friends, the fact that there were other women meant that there was at least one other person who was 'different' to the dominant male group which relieved some of the pressure attached to being 'the only girl'[10]. Unfortunately, the high failure rate of women on the pilots' course means that, even if multiple women start a course together, they are unlikely to remain with their women peers for very long.

Having additional women on a course also helps to reduce minority members' visibility which is a well-known issue for women who work in other non-traditional occupations (Zimmer, 1988; Whittock, 2000; Bagilhole, 2002). ADF pilots spoke of some extremely negative consequences attached to 'capturing a 'larger awareness share'' (Kanter, 1977b:971) within the training construct. There is an adage in military aviation training that if you cannot be one of the 'high flyers' on the pilots' course, you need to be the 'grey-man'[11] which means to 'fly below the radar' and try to pass training without drawing any additional attention. For women pilots, due to their very low numbers, it is impossible to be 'grey' from the outset.

> *What pretty much every girl that I know tries to be [is] the grey man and it's impossible. So you have saddled yourself with failure straight away.* ***(Grace, ADF pilot)***

> *I think, only in that, like if I did badly on a flight say, everyone would know. And there was always that. Because everyone knew how I was going, you know, that was, it didn't matter. So it was a bit more visible I guess.* ***(Lisa,***

[10] Using interviewee vernacular

[11] This term (which assumes all learners are men) is sometimes used in other forms of military training but it originated from ADF flying training.

former Air Force pilot)

As a girl I felt you were talked about more, your mistakes were noticed more. If a guy made a mistake it would be forgotten the next day but mine would be brought up ten years later, you know, and I've forgotten about it. ***(Margaret, former Air Force pilot/current commercial pilot)***

Women in other male-dominated fields seemingly endure similar tendencies. In her study of women in non-traditional employment, Whittock notes the additional pressure stemming from 'male workers scrutinising their every move' (2000:17), and Kram and McCollom-Hampton (2003) also assert that women's mistakes are likely to be subjected to increased, more frequent scrutiny. An interviewee in Kanter's study of women in corporations stated that, 'If it seems good to be noticed, wait until you make your first major mistake' (1977a:213). Kerryn, a young woman who was unsuccessful through military flying training (but is now flying in general aviation), felt that this intense scrutiny may have further contributed to her demise at 2FTS.

Interviewees' reflections indicated that increased visibility within a military context can have another unpleasant side-effect, the complete loss of privacy. Rumours and gossip about women students was rife throughout their training irrespective of how hard they tried to be 'grey' and avoid such attention. As well as rumours about instructor/student relationships referenced earlier, women pilots' social lives, sexual encounters and other relationships were an endless source of fascination for their male peers. Eveline refers to this as 'continual sexual surveillance' (1998:97) and it appears rife within military aviation.

Rumours for every girl, and I knew that… When I realised there were rumours about me it was almost … but why, I haven't done anything? There were rumours about everything I guess… because it's so insular and there is nothing else to talk about … you are thrust into this group where you live and

> *breathe each other. You're so close, it is incestuous. So it's inevitable. There's nothing that you can do as a person to prevent it… there's nothing you can do to stop it.* ***(Grace, ADF pilot)***

This intensive and inappropriate level of scrutiny was dismissed by some as an expected consequence of being a woman pilot whilst others found the gossip to be yet another stressor in an already stressful situation.

> *Your personal and professional life is so intertwined it's not funny...unfortunate. You can't just fly. You can't just get on with the job and do what you need to do.* ***(Andrea, ADF student pilot)***

> *But anyway, so I actually found it quite difficult on course because a lot of the guys were talking behind my back …* ***About you?*** *Yeah, being one of the only females, in a sexual connotation...that put a great deal of strain on…****(Bianca, Air Force pilot)***

The degree to which their lives were discussed and dissected did add to a sense of feeling unwelcome and impeded students' ability to fly at their very best. Many women who enter ADF aviation training are under twenty-one years of age and are still discovering their own sense of self and identity as women. Although some have minimal experience within the military, they must somehow navigate the multiple layers of cultural hostility they encounter, often without any peer support or women mentors to help them through.

Feeling unwelcome and unsupported, and being a constant source of negative attention undermined some women's self-confidence during their training; this affected their ability to fly in an already pressurised situation. Even women who came into the Air Force as confident, qualified GA pilots found themselves struggling to maintain focus and confidence in the face of such negativity.

> *You're so emotionally battered, lacking in confidence and feeling isolated, how can you possibly overcome that and perform well?* ***(Carmel, unsuccessful ADF pilot trainee)***
>
> ***Do you think it [bullying] impacts on your ability to fly the aircraft?*** *On course, it definitely did, because I was just like, well, they think I'm shit. I must be shit. And right at that point, I did fail a flight just because I just couldn't handle it.* ***(Liz, ADF pilot)***

Clearly, some women did manage to overcome or mitigate issues about confidence and flying skills in order to graduate as ADF pilots. Women must be 'particularly resilient and determined' to succeed in any non-traditional training milieu (Dale et al., 2005:iv) and this seems especially true in the masculinised world of military aviation training. The women who have graduated from ADF flying training are impressive, managing to succeed in the face of innumerable barriers and challenges greater than those experienced by their male peers. Some interviewees attributed their success to being 'lucky' insofar as they had women friends on the course, were matched with a great instructor, were with supportive peers and so forth.

Luck may indeed be an aspect of women's success. However, there may be other factors impacting on the training outcomes. The data from this study and an analysis of pass/fail data from both flying schools for the past six years[12], show that slightly older women with past active military experience (not including the three years of studying for a degree at the ADFA) are more likely to graduate from the pilots' course than those with minimal previous exposure to the ADF. This finding is contrary to data about men pilots, which shows that younger men students tend to outperform their older, more experienced peers.

[12] As provided in a 'Pilot Technical Data Report' compiled by the Directorate of Occupational Psychology and Health Analysis (DOPHA) in 2011, using data from 2,648 pilot applicants from the years 1996 - 2011

There are many reasons why this might be the case. My belief, based on both academic literature and my findings from this project, is that experienced ADF women have already learned how to negotiate their femininity within the military construct. Women pilots who commence their flying training directly from the civilian world must learn to cope with the harsh military environment whilst also learning to fly. Women with previous military experience have already assimilated into the 'military' layer of non-traditional culture, thus enabling them to focus more fully on their flying.

> ***How did you find going through the pilots' course?*** *I think I, when I really think back to that, I think I was probably lucky that I was older … yeah, so and I'd also been in the Air Force (for a number of) years nearly I think, so already having that kind of confidence and stuff probably helped because it was very man-dominated, male-dominated in those times, very, very much.* ***(Lisa, former Air Force pilot)***
>
> *…I was a [higher rank] by this stage too because I was an on-call flyer, so I didn't take a lot of shit that – that a lot of the young girls would have.* ***(Cindy, ADF pilot)***
>
> *I don't think I would have passed pilots' course without being a …. [another Air Force role associated with flying].* ***(Erica, Air Force pilot)***
>
> *BFTS I can handle but a girl off the street wouldn't be able to.* ***(Andrea, ADF student pilot)***

ADF women pilot's success may also be due to their having solid support networks outside military aviation and not having to rely on acceptance by, and social support from, their pilot training peers.

Another finding that became evident after correlating interviewees' success through training with their biographical data was that women with substantial previous flying experience generally had more positive training experiences than civilian entrants with minimal *piloting* exposure. This may have been because accomplished women pilots had also negotiated one layer of non-traditional employment, the aviation aspect. Another hypothesis is that women with previous flying experience started their flying training with a more solid foundation in relation to performing in an airborne environment which improved their confidence during training.

> *It's just confidence, and a little bit more headspace. I don't, I'm not scared to make a radio call because I've made hundreds of them before… So that initially I think was, it was definitely a benefit … But yeah, I definitely feel that it was a benefit in the sense that I had yeah, confidence… Definitely.* ***(Mindy, ADF student pilot)***

Some younger women who commenced the pilots' course with strong peer friendships (formed during their tenure at either the ADFA or Royal Military College) also had enhanced experiences through their pilot training because the peer-support so necessary through training was already established.

Irrespective of their backgrounds or pathways into flying, women who graduate from the pilots' course tend to be listed towards the lower end of the merit-ordered graduation list[13]. By analysing data from 2,648 pilot applicants from the years 1996 – 2011[14], Defence's Directorate of Occupational Psychology and Health Analysis (DOPHA) determined that:

- Men achieved proportionally more credits and distinctions through pilot training than women.
- 2FTS students who achieve distinction graduation results are generally

[13] Based on graduation order data for the past five years, as provided by 2FTS in April 2011

[14] As provided in a 'Pilot Technical Data Report' requested by Air Force's Personnel Directorate

suitable and subsequently selected for fast jet training.

- No woman 2FTS graduate between the years 1996 and 2011 has ever been afforded a distinction result.

Failing to attain a high credit or distinction result on graduation from 2FTS impacts a student's ability to be selected for fast-jet conversion, noting that flying fast jets was a career goal for many interviewees in this study. As noted throughout this thesis, Australia is yet to graduate a single fast-jet pilot despite women succeeding in this role in numerous overseas militaries. This is perhaps foreseeable, noting the wide range of barriers explored through this chapter. Eveline observes that by 'driving women away and hindering their performance abilities harassment *produces* rather than simply reinforces, the idea that women are inferior workers who cannot cope with a 'man's job' (1998:97). This appears to be the case in relation to ADF flying training.

Senior instructors at both ADF flight schools, when asked, attribute women's inability to progress to fast jet training as being related to their not having the skills and abilities to progress down this pathway. This research suggests that, conversely, they are actively prevented from flying at their best and thus being competitive for fast jet conversion. Accordingly, any barriers that continue to obstruct women's ability to perform on the pilots' course will contribute to this as an enduring issue. As it currently stands, the majority of women simply can't graduate from flying training with a sufficiently high ranking to be considered for fast-jet conversion training. Improving women's overall representation on the pilots' course and helping them excel while undergoing training is necessary if Australia is to ever capitalise on the known skills that women can bring to this role.

Despite the high level of interest in pursuing a fast-jet career expressed by interviewees, less than a handful of women have been selected for conversion training in the ADF and, to date, none has been successful. Interviewees' personal reflections suggest that gender-based barriers for women, as highlighted through this chapter, are even greater within the fast-jet training realm.

> *Yeah, and you know there would be just little snide comments about you know no-one wanted to be shot down by a girl and how you know that would un-man them … It was more the older guys, you know, the senior staff there.* ***(name removed[15])***

> *I hated it yeah. And it was actually the instructor – I remember the instructor there … he turned around and said, "You can't even fire a fucking gun, how are you going to fire a fighter aircraft?" That's the instructor, okay thanks for that.* ***(name removed, Air Force pilot)***

> *I did feel going to 25 Squadron then that the whole dynamics changed a lot and it was a totally different environment, it was full on, macho and I hated it.* ***(name removed, Air Force pilot)***

One very competent pilot described her fast-jet training experience as 'the worst year of my life', a reflection that was reiterated by other interviewees. Although she graduated towards the top of her 2FTS class, she felt that her fast jet training experience was sabotaged from the outset. Interviewees spoke of having manuals thrown at them, and being sworn at, verbally abused and told that they shouldn't be there. Students were subjected to a barrage of snide comments about women's suitability as fast-jet pilots and experienced a general sense of being very unwelcome. One interviewee voluntarily opted to leave her training because the culture was simply too hostile for her to stay; she also referred to another woman pilot's voluntary departure from this course[16].

As women have not been selected for fast-jet conversion training for many years now, primarily due to their inability to achieve a sufficiently high graduation

[15] Pseudonyms and identifying data have been removed to protect correlations being made with other quotes in this study.

[16] Hearsay, as the other pilot was not interviewed for this study

standard, these anecdotes represent the experiences of women from a number of years ago. While I would like to believe that the fast-jet conversion culture will be far more receptive to the next woman who attempts this course, this research has made me doubtful. Many of the very negative anecdotes pertaining to training at BFTS and 2FTS cited in this chapter were provided by current or very recent ADF pilot trainees.

This suggests that aviation culture really has not improved significantly since women first attempted pilots' course in the late 1980s. Today's pilot trainees are still 'pioneers' to the same extent as the first women to enter ADF military aviation training in the 1980s; a finding that I found deeply concerning from both a personal and professional perspective. The findings from this study suggest that Australia is highly unlikely to graduate that elusive 'first female' fast jet pilot any time soon, without some form of intervention.

Conclusions

Women who seek piloting careers in the ADF face a wide range of gender-based barriers from the outset and those candidates who progress through the difficult selection process encounter a further series of barriers through the training pipeline. Women pilots from all aviation contexts may face barriers borne from undertaking training within a non-traditional learning environment. However, women pilots in the military face additional and/or exacerbated challenges due to the intensely masculine nature of military aviation.

After being made aware of these numerous challenges for women pilots, the ADF hierarchy has a choice. They can continue to wonder why Australia's number of military women pilots is so much lower than those found in countries like the United States and the United Kingdom. They can justify why almost every Air Force in the world, including those in fundamentalist Muslim countries (where women aren't permitted to drive), have graduated woman fighter pilots and Australia hasn't. They can continue to accept women's higher training failure rates and attribute women's lesser competency to the anomaly. Alternatively, the

organisation’s hierarchy can take urgent action to address some of the issues identified through this and the preceding chapter, such that higher numbers of Australian women might access and succeed in military flying careers.

CHAPTER SIX – CULTURAL BARRIERS AND CHALLENGES FACED BY WOMEN PILOTS IN THE ADF

CHAPTER SIX: CULTURAL BARRIERS AND CHALLENGES FACED BY WOMEN PILOTS IN THE ADF

Introduction

Beyond the practical difficulties of gaining admission to ADF piloting roles, the ability for women to subsequently pursue a successful flying career is shaped by the masculine organisational culture that permeates military aviation. An organisational culture comprises 'the fixed assumptions which are held by the organisation, usually through informal networks which are quite different from the public structure' (Bennett et al., 1999:275). Gender relations reinforced through the culture as 'social interaction, symbols and meanings' which are 'are negotiated and shared' (Bagilhole, 2006:118).

The degree to which women can 'survive and thrive' within this culture depends on a range of factors, including their individual and collective agencies, the natures and degrees of the cultural impediments and the existence of support mechanisms for helping them succeed in that context. While cultural impediments have their most immediate and, perhaps obvious, impact in the training environment, there are issues that continue to sap the energy, effectiveness and job satisfaction of many women pilots throughout their flying careers. This chapter examines the cultural and social barriers faced by women pilots through all career stages and the strategies they employ to mitigate them.

The analysis and discussion are based on qualitative data drawn from forty-six semi-structured interviews with past, present and future ADF women pilots. Civilian pilots' perspectives, captured both through this study and other academic literature, contribute to a number of discussion points. Civilian pilot perspectives are useful to ascertaining whether any of the identified barriers are inherent in aviation generally or are exclusive to the military flying culture.

Of particular value in drawing out empirical data for this discussion were interview questions such as 'how did you negotiate your gender through different stages of your flying career?' and 'what advice would you offer other women seeking careers as military or civilian pilots?' The themes discussed in this chapter are those that emerged most consistently from interviewees' experiences, with cultural barriers and challenges of a more individual nature not included.

Theoretical perspectives

In male-dominated organisations, workplace cultures are often 'hierarchical, patriarchal, sex-segregated, sexually divided, sex-stereotyped, sex-discriminatory, sexualised, sexist, misogynist, resistant to change' and as all-encompassing 'gendered power structures' (Bagilhole 2002:115, summarising Itzin, 1995). As observed previously, military institutions, where success is defined in terms that are inherently 'masculine' (Acker, 1990; Shaw & Lee, 2009), tend to typify those characteristics.

It is well documented (Burton, 1996; AHRC, 2012) that women in the ADF may face a wide range of barriers and challenges borne from their minority status within a patriarchal organisation. For the numerous reasons addressed in the literature in Chapter Two, women working in non-traditional fields within the military are likely to experience a greater and more extreme range of barriers and challenges than their colleagues in more feminised, traditional occupations. This is especially true when women enter and succeed in 'frontline combat' or 'warrior' roles which, in Air Force piloting, are considered the primary war-fighting occupations.

A valuable window for looking at the cultural barriers and challenges faced by women pilots is Kanter's (1977) 'perceptual phenomena' theory. This theory bridges the gap between psychology and sociology to 'provide a fuller picture of the multifaceted difficulties faced by women who work primarily with men' (Hogue & Yoder, 2006:199). Despite being over forty years old, this theory remains an authority for explaining the organisational dynamics in workplaces with minority groups of workers. Kanter's theory discusses the dynamics of groups with different

numerical constructs using the term ‘tokens’ to describe women with extremely low representation. At less than three per cent of the ADF piloting workforce, women pilots are irrefutably ‘tokens’ according to Kanter’s theoretical positioning. As such, they are exposed to a range of culturally based repercussions associated with being a ‘token worker’ (Kanter, 1977).

Kanter’s work describes the interaction dynamics of skewed groups by describing three ‘perceptual phenomena’, visibility, boundary heightening and assimilation, as the expected responses of dominant groups to the tokens in their midst. She notes that these perceptions ‘determine the interaction dynamics between tokens and dominants and create the pressures dominants impose on tokens’ (1977b:971). Also helpful to the analysis in this chapter are the perspectives of Bagilhole (2002), Britton (1999, 2000) and Whittock (2000, 2002) in relation to the influence of organisational cultures on women in highly masculinised organisations and occupations.

Analysis and discussion

An analysis of interview data addressing organisational culture determined that women face a wide range of culturally manifested barriers and challenges as they progress through each stage of their military flying careers. Although gender-based hurdles are most acutely experienced within the intense flying training environment, they continue to be encountered by women through subsequent career stages. Some of the barriers addressed in this chapter include: heightened visibility; accusations of ‘special treatment’; abject loneliness; feeling ‘unwelcome’; additional performance pressures and an exaggerated masculinised culture.

The pressure of heightened visibility, already seen to be a key barrier impacting on women’s success through flying training, continues to plague women throughout their flying careers. Their mistakes remain a focus for their male peers, they continue to attract gossip and unwarranted attention, and remain unable to ‘fly below the radar’ when progressing their flying careers.

One of the factors contributing to women's inability to 'fly below the radar' is the organisation's desire to place them in the spotlight. The pilots in this study spoke of being selected for media opportunities and being '*paraded around like a prize',* resulting in additional attention that they did not invite or appreciate. Whittock also notes the great reluctance of women in non-traditional roles to participate in media activities, observing that they 'go to lengths to avoid publicity of any kind' (2000:176). United States Air Force pilot Kelly Flinn succinctly captures the thoughts of interviewees in this study.

> *'I never wanted to be a poster girl of any kind. I just wanted to be a pilot - the best pilot I could be. Not a 'woman pilot'. Not a first. Not an icon. But because the Air Force needed me to be a poster girl, I couldn't just fly'.* ***(Flinn, 1997:XIV)***

Perceptions of special attention can invoke resentment and some unpleasant reactions from male peers, who may not realise just how actively women avoid the spotlight. One junior trainee, who had been featured in a newspaper article, found her face plastered on life-sized cardboard cut-outs which were distributed around the flying school. Others found their media articles were defaced and then placed in prominent positions on squadron notice-boards. A more-senior pilot spoke of still being traumatised by being 'forced' to appear in a women's magazine during her pilot training, due to the extremely negative reactions of her peers. Dianne attributed another woman pilot's resignation directly to media-based attention.

> *And that's why [name removed] left.* ***Really?*** *Yep. She did the ad, the army ad, and then she was in a magazine and she got – she copped so much flak from the guys that she couldn't take it anymore and she left.* ***(Dianne, ADF pilot[1])***

[1] Note that the quotes in this chapter differentiate between Air Force pilots and ADF pilots. 'ADF' includes both Navy and Army pilots; information from whom has been combined to protect the identity of Navy pilots as their numbers are so low.

Publicity and media introduces the danger of success being attributed to *favouritism* rather than genuine ability, with almost all ADF interviewees complaining of being subjected to accusations of 'special treatment'. Pilots spoke of being called 'a quota' and having any achievements (such as graduating from the pilots' course or gaining captaincy) attributed to gender-based favouritism rather than their flying skill. There are even colloquial terms for this, such as 'tit-assist', 'playing the chick card' and 'lumpy jumper syndrome'[2].

> *Even my first posting to a flying squadron, like I did fairly well early out and I got my aircraft Captaincy very early … it definitely started then... "Oh, you've got to have a set of boobs around here to get anywhere."* ***(Mia, ADF pilot)***

> *… I don't think our gender helped us to succeed but when we succeeded that was something for the blokes to say to us, oh, you know, they call it the "tit assist" or something. Yeah, and that was, that was prevalent.* ***(Mia, ADF pilot)***

> *It's generally comments … I did my Advanced Handling Test and one of the guys came up and shook my hand and I thought, oh, that's very nice of him. And he goes, "Congratulations on getting your wings". And I went, "Oh, no, I just did my AHT [Advanced Handling Test], you know, not my wings". And he goes, "You're a chick. They may as well give them to you now anyway".* ***(Yasmine, Air Force pilot)***

Because of these accusations of favouritism, women pilots tried very hard to avoid, where possible, any action that might be perceived as preferential treatment knowing that it would invoke resentment from their male colleagues. Sometimes,

[2] As expressed by interviewees, although these terms were also detected by the AHRC in its 2012 study of the treatment of women in the ADF. I have also heard these terms used in other military contexts.

however, they were powerless to prevent these perceptions, especially when they stemmed from their Commanding Officers, instructors or higher-ranking personnel.

There is considerable tension between the desire of women pilots to maintain a low profile, the organisation's wish to exploit their success to boost recruitment and the advantages of experienced women pilots acting as role models and mentors for their younger colleagues. Being different to the 'organisational norm', together with the accompanying sense of 'otherness', has major consequences for the women concerned. A resultant and intense feeling of loneliness is a common theme through other explorations of women working in non-traditional contexts (Greed, 1991; Goyne, 2008; Moccio, 2009), as well documented in reflections by other women pilots (Flinn, 1997; Spears, 1998; Hirschman, 2000). Women pilots' feelings are exacerbated by their continued minority status and the deeply unwelcoming workplace culture prevalent in some flying contexts.

> *Yep, and it's the same as us, sort of when I first deployed and I was the only female officer, and I had two female soldiers and that was it, I couldn't hang out with them because that's a no no [because of the rank structure] yet, hanging out with the boys, I was completely alone. Completely alone.* ***(Cindy, ADF pilot)***

Women in this study spoke of being socially isolated from the wider group, not being 'permitted' to participate in group activities and generally feeling 'rejected' by the male groups within flying squadrons. Kanter refers to this isolating treatment as being 'quarantined' (1977a:226) by the dominant group. Men may have a need for 'all-male' bonding just as women sometimes seek out the company of women. However, in situations where women pilots have no social alternative, such as when on deployments or trips away, their exclusion from team activities was very upsetting to some interviewees.

> *They would just make me feel excluded. If there was something going on, on*

a Friday and one of my [men pilot] friends would invite me along to it they [would], obviously, in front of me say, "Why'd you invite her? We don't want to see you there." I think it's so isolating ... I had some great friends from [previous military context] too, but you do start to think well, maybe it is me. Maybe I am a really crap person. ***(Tania, Air Force pilot)***

You get ostracised, socially, the crew would land and you would like either check into the base or at the hotel accommodation and you'd all meet up an hour later for dinner, well I would never be included in the plans ....so I'd sort of find myself going "Oh" And then you know, I'd go out and grab a bite to eat and they would be there. And so I'd sort of join them and I had people say women don't fly in the Air Force and they certainly don't fly in this place … and we'll do our best to get you out. ***(Harriet, Air Force pilot)***

Say they all decided to go out on the piss one night and don't invite you, you probably weren't going to go anyway but, if they just specifically don't invite you, you're going to feel unwelcome. You feel unwelcome; you're not going to be able to perform as well. ***(Mindy, ADF student pilot)***

Margie (who also experienced overt bullying and harassment throughout her career) described an incident of the most extreme isolation and corresponding loneliness. She was selected to undertake a post-graduate conversion course on the basis of her exceptional flying skills. During her entire course, when she was away from friends and family, all the men held a competition to see who could last the longest without speaking to her.

This deeply polarising activity was led by the under-performing 'alpha male' of the group who had targeted the high-performing Margie from the outset of her pilot training. The entire group's behaviour towards one of their pilot peers demonstrated a level of immaturity that seems unfathomable in professional military pilots. Margie was still visibly traumatised by those events, which occurred

some time ago, and became very tearful during our interview. Stories like Margie's affected me at a deeply emotional level and I, too, was sometimes brought to tears by others about women's treatment in military aviation.

Margie, like others who experienced similar isolating behaviours, found that not all men in her group were comfortable with this polarising behaviour. Women pilots noted that sometimes, in private, men would apologise to them for how they were being treated by the dominant group. However, even those who were privately sympathetic to the plight of their women pilot colleagues felt pressured to publicly side with alpha males against the token woman.

> *And even then, in private, the other guys will be, "Oh yeah, we're really sorry about that, or whatever" but they will never stand up to the other blokes.* ***(Ellie, ADF pilot)***

> *Yeah. I feel really upset that the guys that were my friends didn't stick up for me. Yeah, but I would've rather have that than pursue it myself. I was hoping that they would say something.* ***(Tania, Air Force pilot)***

Agostino notes this phenomenon in relation to military men, stating that '… those men who support women colleagues often do not openly express such sentiments, usually because they are sensitive to the unofficial reprisals which may come from other male members' (1998:65). Moccio also found that men in the electrical industry 'fear being ostracized by their co-workers and penalized by their supervisors if they defend or support women on the job site' (2009:165). It seems that men are also under pressure to fit in within highly masculine contexts, with failure to side with the dominants meaning risking their *own* places in the pack hierarchy.

With few options for friendships with other women, women looked to men for support, with the majority of interviewees, as some career stage, forming close,

platonic and enduring friendships with men. Many pilots spoke of wonderful friendships with men who could be relied on for moral support, company and 'having their back' when necessary in the workplace. Interviewees shared stories of being honorary 'best men' at the weddings of their male friends and of friendships that endured for many years. However, irrespective of how close these friendships with men were, they did not always fulfil the need for the company of other women.

Some pilots spoke wistfully about their lack of access to other women pilots through their formative years as a young adult. Another highlighted the extremely positive outcomes of her very first exposure to other women pilots in the ADF whom she met through a civilian pilot gathering.

> *[On meeting with other ADF women pilots for the first time]… and I was in this group of women, and every one of them was fantastic, and I was sitting there with them, and I'm going, wow, this reflects well on me. Maybe I'm fantastic too. It was just wonderful.* ***(name removed, Air Force pilot)***

This interviewee stated that meeting other women pilots changed her whole perception of herself; she had been struggling with feeling isolated and having low confidence and self-esteem after the pilots' course. Meeting other women, many of whom had suffered similar negative experiences through their training and early careers, changed her whole perspective. She realised that the hurdles she had faced weren't due to personal failings on her part and that almost all women pilots had experienced them to varying degrees. Other interviewees expressed similar sentiments about their positive exposure to other women pilots. The occasions when interviewees did meet other women pilots were extremely beneficial to building up their self-confidence, which, as observed in Chapter Five, can be severely dented through the early years of flying.

> *I ended up going there [a certain Air Force squadron] … and it was the best*

> *posting I could've come to, especially working with a lot of other girls as well … I really enjoyed that and [it] was good just [to] build my confidence again and be in an environment where there are a lot more women around.* ***(Tania, Air Force pilot)***

Being in a minority group also adds extra performance pressures to women pilots, due to the way in which any of their mistakes are used to form sweeping generalisations about their ability to fly. Kanter refers to such generalisations as an 'extension of consequences' (1977b:973), noting that this tendency is another common reaction to women's presence in male-dominated workplaces. The extension of consequences involves 'tokens' having to carry 'the burden of representing their category' (Kanter 1977b:973). Interviewees found that other women pilots' failings were often generalised to the entire population of women pilots, which influenced how their own flying competency was perceived by their peers.

> *Oh yeah, the guys hated me. They were trying to get me off-course…* ***But did he ever say to you why he didn't want you there [on a course]?*** *They just didn't want me there… he used to tell me stories about how all the chick pilots he ever flew with were shit, except for one.* ***So how did you react to that?*** *I just tried to ignore it. It was shit. [Crying] it gets me upset all the time.* ***(Margie, ADF pilot)***

Interviewees also felt compelled to 'prove themselves worthy', not only for their own reputation but for those of *all* ADF women pilots. In their study of gender and learning to fly in a civilian flying school, Turney and Bishop found that 'mistakes made by women become generalized and are perceived as a gender weakness' (1999:5), a similar tendency to that reported by ADF interviewees. Due to this inclination towards negative generalisations, less competent women pilots were greatly resented by other women pilots for 'giving all of us a bad name'.

> *So we ended up with three (female student pilots) towards the end and I actually reckon that made my life harder. And whether that was just the dynamics at the time, but you then got lumped in with those other girls. So, [if] one person did anything incorrectly, it was sort of a group targeting thing.* ***(Jen, Air Force pilot)***

Sometimes this extension of consequences actually worked in women pilots' favour, as interviewees who followed well-respected women pilots into squadrons experienced far fewer issues in terms of having to 'prove themselves worthy'. Either way, women were rarely viewed according to their *individual* piloting merits.

> *You know, any of the guys can stuff up one day and all the other boys go, "Oh, you know, he's having a bad day. He's having a bad day". I stuff up and they go, "Oh, she actually is really a girl, that's right. Yeah, no, she just ... she had a couple of flukes" … It just makes you sit and think and go, oh God, if I stuff up now they're just going to think, yeah, that'd be right, stupid girl, you know.* ***(Yasmine, Air Force pilot)***

The performance pressures experienced by women pilots and their desire to 'prove themselves worthy' were not helped by the fact that some ADF men remained overtly sceptical, regarding women's flying abilities. Generalisations about women's flying abilities and/or expressed belief that women do not belong in military aviation were exceptionally jarring to interviewees, especially when these views were expressed by senior men in leadership positions. Tara reflected on this occurrence on her very first day in a new squadron.

> *He [a senior member of staff] said, "I don't want her down here at the squadron taking a place of someone that can actually do the job". He goes, "I don't want to fly with her" and all this sort of shit. And he stood up in front of the CO [Commanding Officer] and said that at morning brief in front of 100 people".* ***(Tara, Air Force pilot)***

Derision towards, and an expressed dislike of women pilots is not unusual. Davey and Davidson's study of commercial aviation found that male pilots 'openly admitted hating female pilots' and/or 'were consistently difficult with female pilots' (2000:214). While it is difficult to determine the impact of male pilots' negative views on women's ability to succeed in aviation, when critics hold positions of power and influence in flying workplaces, women are hardly likely to feel welcome, valued and be given 'a fair go'[3].

However, overcoming such negative perceptions is complicated by the parallel concern of the dominant group to remain the benchmark of competence. In their study of civilian flying training, Turney et al. (2002) found that men don't like women who fly better than they do, irrefutable evidence of which was found in this study. Interviewees spoke, at some length, about the complexities involved in proving themselves 'worthy' whilst also carefully avoiding outshining their male pilot peers in the air. Kanter's theory references the group dynamic that 'makes tokens afraid of outstanding performance in group events and tasks' (1977b:974), noting that women must avoid, at all times, 'making the dominants look bad' (Kanter, 1977b:974). This is yet another pressure that women face in non-traditional working environments.

In the ADF, women pilots suffer the paradox of having to be '*that bit quicker, that bit harder, that bit faster'* ***(Mindy, ADF student pilot)*** to be deemed competent whilst possibly suffering the negative consequences of outshining dominants. Nowhere is this more acutely felt than during pilot training and flying conversions where men's masculinity and pride can be diminished by high-flying women.

> *Yeah, but most of the young guys on course were okay. But they hate… a girl doing better than them.* ***(Lisa, former Air Force pilot)***

[3] 'A fair go' is Australian vernacular which means a fair chance to succeed.

To avoid outshining dominants and fearing retaliation, some interviewees spoke of actively and deliberately downplaying their flying success in both training and operational workplaces. Where men would brag about an 'awesome flight' or 'perfect landing' (even if it wasn't!), women pilots tended to remain modestly quiet about their successes, preferring to keep any tendencies towards overt confidence in check. One interviewee even spoke of counselling another pilot to *downplay* her innate, overt confidence to minimise any possible backlash from men who may feel threatened.

Unfortunately, in ADF aviation, where overt confidence is expected and rewarded, downplaying ability can result in women being viewed as less than adequate by their superiors and peers. This situation is not unique to pilots, with Kimmel (2000), a sociologist, observing a similar lose-lose dilemma for military cadets undergoing training in the United States. 'Success' in masculine organisations generally requires qualities such as being competitive, dominant and aggressive (Cejka & Eagly, 1999); nowhere are these qualities more intertwined than in military aviation.

The need to demonstrate overt confidence and aggression, previously noted as a barrier to women seeking selection as military pilots, was also found to impact on them during subsequent training and career stages. This is especially prevalent in the Air Force, where pilots who are less overt in their displays of confidence can be viewed as lacking the 'aggression' necessary to succeed in the fast-jet world. Pauline sought fast-jet selection after a few years of operational flying, but felt that her lack of external 'aggressiveness' was a factor influencing her non-selection.

> *Like, I have more finesse on my flying and it's more … so I'm still going to be pulling in as hard, I'm still going to be concentrating as hard and fighting as hard but … but it just doesn't look [like it] – yeah, exactly. So I think that was part of my downfall, they just didn't see that aggressiveness because I'm not an outwardly aggressive person.* ***(Pauline, Air Force pilot)***

Therefore, especially in relation to selection for fast jets, women pilots appear to face yet another 'Catch-22' in that overtly displaying confidence and obviously outperforming their male colleagues may threaten the dominant group and make them targets. However, failure to demonstrate overt confidence or *aggression* impacts on their grades on the pilots' course and, *ergo*, their possibility of being selected to fly fast jets. Like Pauline, a number of other interviewees attributed their not being selected for fast-jet conversion to gender-based perceptions of what confidence and 'aggression' should look like within a military aviation construct.

Women pilots who accidentally, or perhaps purposely, 'outshine dominants' can face a range of very unpleasant consequences. In his study of hegemonic masculinity in the United States Navy, Barrett ponders that, 'if gruelling tests separate the men from the boys, what does it mean if women can pass them?' (1996:133). Unfortunately, in Australian military aviation, it means that high-performing women pilots must be put in their place. Numerous interviewees highlighted the threat attached to doing well.

> *… I think a lot of the reason why the alpha male, the guys like that, do that [sexually harass women] … it's 'cause they're so threatened by the fact that they've got a girl there that can actually do the same as they can.* ***(Ellie, ADF pilot)***

Interviewees spoke, at some length, about some of the consequences of success within a military aviation context, especially when the environment is intense and highly competitive for all pilots. High-performing, self-assured and outwardly confident pilots sometimes found themselves diminished through insidious means. After much consideration, I decided not to include quotes about sexual harassment and abuse, primarily because interviewees asked that specific attention not be drawn to these incidents. Given the very small number of women in the ADF, revealing such incidents in this thesis may also have prompted speculation

regarding the identity of the women who spoke about abuse, which was the last thing interviewees wanted.

However, I will say that several interviewees did share heartbreaking stories of assault, harassment and extreme bullying in various aviation settings, with a number still managing the trauma invoked by the level of abuse they experienced at different stages of their flying careers. These were not historical cases; some very junior women as well as more-senior ADF piloting pioneers had been subjected to similar treatment.

The women who seemed to suffer the most abject forms of physical and psychological abuse were the most competent pilots, with perpetrators tending to be 'alpha males' who were struggling themselves. Research offers some explanations for this behaviour as it notes the link between men's masculinity and paid work, and the perceived threat to their masculinity when they are outperformed by women (Cockburn, 1985, 1988). Sexual harassment enables men to 'reassert dominance and control over women colleagues who would otherwise be their equals' (Bagilhole, 2002:126) and cut 'emergent and potentially powerful women down to size by sexual means' (Cockburn, 1991:141). Burris notes that 'sexuality becomes a trump card of masculine privilege, a way of asserting power when other avenues fail' (1993:102). Interviewees' perspectives captured this very insightfully.

> *You really have to have a degree in psychology to understand how the alpha male ego actually works to be able to try and pat the ego and make sure you don't get in the firing range of it because, quite frankly, once you're in their line of sight you're screwed. You're really screwed.* ***(Andrea, ADF student pilot)***
>
> *I found I got the hardest time from the guys who were struggling because they just needed to take it out on somebody whereas the guys who were*

> *doing well just didn't have an issue with me.* ***(Margaret, former Air Force/current commercial pilot)***

Within the training environment, harassment and abuse tended to escalate towards graduation, with one interviewee sexually assaulted in her room on the night before her final flying test. The timing seems telling. Another successful pilot, who left Defence at her earliest opportunity, described being *'close to breaking point'* due to the ongoing sexual harassment by another pilot. The influence of this on her flying performance and emotional resilience was profound; she failed her first flight during a week when the harassment escalated in frequency and severity.

Throughout the data, incidents of bullying were far more prevalent than those of sexual harassment. Although bullying tended to be more extreme during training, it was also detected in ADF workplaces across all three Services. Air Force women tended to suffer from higher levels of post-course bullying and harassment than their Navy and Army peers; the reasons for why this might be the case are addressed later in this chapter. Many Air Force interviewees did not paint a positive picture of flying squadrons as welcoming places for women pilots.

> *It was good flying but a horrible place to be as a girl, it was just terrible ... they [the men] were very, they were just horrible, absolutely horrible.... you would go in there [the women's toilet] to cry. And [another female pilot] would be crying and I would be crying and [other female aircrew] would be crying and the other girls in there would be crying.* ***(name removed, Air Force pilot)***

> *... he was just really threatened by me… one of his little followers would sit on the other side [of the desk] and throw darts at the board in between us. It would feel like he was throwing them at me. He had like this axe handle thing in the little office and they would walk in the office and pretend to hit me over the head with it.* ***(name removed, Air Force pilot)***

One pilot was even presented with incorrect study notes in the hope that she would fail a particular flying exam. These stories are extracted from a very long list of similar, quite disturbing incidents whereby women's self-esteem was diminished which affected their ability to fly.

> ***Do you think the bullying impacts on your actual ability to fly the aircraft?*** *Some – like, very few times have I felt that it has. On course, it definitely did, because I was just like, well, they think I'm shit. I must be shit. And right at that point, I did fail a flight just because I just couldn't handle it.* ***(name removed, ADF pilot)***

The impact of this aggressive behaviour towards women was further magnified by the lack of suitable courses of redress. As noted in other studies, women are extremely loath to report incidents of sexual abuse, harassment or bullying (Austin, 2000; Fitzgerald et al., 1995). Pilots in this study cited a variety of reasons for non-reporting, including fear of career repercussions and victimisation by peers and superiors, and a strong disbelief that their privacy would be respected. Others simply felt that they would not be believed as it was their word against those of the alleged perpetrators'. Interviewees in this study also cited strong desire for peer acceptance; they felt that reporting would risk ejection from the wider group.

> *Well, it took me weeks and weeks to report it (a sexual assault by another member of the squadron) to the CO and then when I told him he pulled me out of the (squadron).* ***So you suffered?*** *So I suffered for it... it was just the last one in a run of things…and that was just the final straw for me.* ***The straw that broke the camel's back?*** *Well, the fact that I was made to suffer for it. He wasn't taken out of the (squadron). He was allowed to continue flying.* ***Was he punished in some way?*** *No. Not at all.* ***(name removed, former Air Force pilot)***

As highly visible members of the workforce, women were also reluctant to undertake any action that might invoke further scrutiny and attention. With so few women in positions of authority in ADF aviation, interviewees also spoke of feeling uncomfortable reporting to an all-male command chain. One pilot, like many of her peers, didn't report extreme harassment because she felt *responsible for any consequences* for the perpetrator.

> *I didn't really let on a lot to the hierarchy because I didn't want to be the reason that someone was scrubbed off the course. I didn't want that to happen. It's emotionally hard to talk about it now … because you try to block it out a bit.* ***(Tania, Air Force pilot)***

This interviewee's desire to protect her peer from being 'scrubbed' may be difficult for civilian outsiders to understand. However, the *team* ethos in Defence is incredibly strong and many women in this study did not report because they wanted to *protect* the perpetrators. Interviewees also believed they would be held responsible and made to suffer if popular team members were punished. Gender played a further part in women's reluctance to report, with interviewees feeling that harassment and abuse may have been an expected (and perhaps accepted) consequence of entering such a male-dominated occupation.

> *Now, I look back and go my God, I would never, like, I would never, I never had the guts [to report the harassment] … you know, part of me felt, well, I kind of asked for this, you know, what was I thinking coming into a male-dominated world, so I think because of that, you put up with a lot and just push, put it off, you know, as this must be normal.* ***(name removed, Air Force pilot)***

Some women had traumatic experiences throughout their flying careers. One interviewee, who left the Air Force, was subjected to repeated episodes of sexual assault, sexual harassment and overt bullying in a range of Air Force posting

locations. Like a number of other interviewees, her decision to resign was directly attributable to the hostile organisational culture. This study proves beyond doubt that military aviation culture has significant ramifications on the progression and long-term retention of women pilots in the ADF.

For women pilots, the impacts of those specific instances of abuse were reinforced by the broader, deeply masculinised culture within ADF aviation contexts and the all-too-frequent efforts of men pilots to preserve it. One reported technique was to exaggerate the differences between the dominant group and minority workers within that group. Kanter (1977) refers to this tendency as 'polarisation', noting that workplace cultures can become *even more* masculine as a consequence of introducing a woman token. The aim of polarisation is to render the token isolated whilst also reinforcing the commonalities among the dominants.

Being excluded from social gatherings and male-only sporting events, and subjected to sexual innuendo, salty language and practical jokes at a token's expense (for example, stealing her underwear or removing toilet seats from women's bathrooms to induce discomfort[4]) were all forms of polarisation found in this study. Apparently, some men also felt compelled to share detailed stories of their sexual exploits in the presence of women pilots. To combat this polarisation, women did attempt to 'join in' with ritualistic male bonding activities, primarily because, as previously noted, team bonding is a necessary part of military aviation life.

> *So, even on the weekends you live [in the share house] with the guys and they were gross. They were standard guys, who are watching porn when you wake up in the morning, but whatever. Like, if you want to play in their domain, then you have to accept that.* ***(Ellie, ADF pilot)***

Other interviewees in the ADF study spoke of attending strip clubs, participating in heavy drinking sessions, playing football and engaging in other 'male-bonding'

[4] Two actual events cited by interviewees

activities orchestrated by dominants. This need to engage in male-bonding sessions may not be unique to military aviation as Davey and Davidson (2000) showed that women commercial pilots also felt compelled to adapt to the masculine culture by laughing at sexist jokes and going for drinks with their men colleagues. It seems that pilots in all contexts may feel compelled to engage in these behaviours to succeed in aviation and be accepted by the dominant group.

Some women pilots were required to pledge allegiance to the dominant group by 'siding against' other women as, sometimes, 'the price of being 'one of the boys' is a willingness to turn occasionally 'against the girls'' (Kanter, 1977b:979). Kanter describes this as 'loyalty testing' (1977a:227), which is known to be quite common in other male-dominated workplaces (Bagilhole, 2002; Ellemers et al., 2004). To test their loyalty to the dominant group of male pilots, women were sometimes asked to collude with that group against other 'interlopers'.

> *When I rocked up at [removed] squadron, I was told by the senior co-pilot there [that], "If you're friends with her you won't be friends with us… and it will affect your friendship with everyone else here at the squadron"… I remember just looking at this guy thinking, "You are the biggest idiot I've ever met. I cannot believe you're sitting there threatening me not to be friends with someone".* ***(Tara, Air Force pilot)***

As well as being a test of her loyalty to the dominant group, Tara's experience reflects a deep resistance by men pilots to her developing a friendship with another woman pilot. While Tara held firm against this collusion, a few pilots did, during our interviews, actively denigrate other women pilots through criticising their morals, relationships, flying skills and personality characteristics. Mitchell et al. (2006) also found that some of the women pilots in their study of gender and aviation held negative views of other women pilots. Within the ADF, younger pilots, still fighting for acceptance and working through complex negotiations of femininity, seemed more inclined to speak negatively about their aviatrix peers. More mature,

experienced pilots seemed far more willing to actively champion women pilots and highlight their positive traits.

Importantly, even when women pilots are accepted by their male peers, that acceptance is rarely either gender neutral or simply reflective of their flying ability. There was evidence within the interview data to suggest that groups of men, when faced with a token woman in their midst, employed various means of rationalising and coping with their presence. One strategy for coping is to stereotype women into 'social roles' that the dominant group deems 'acceptable' roles for women. Kanter refers to this coping strategy as 'assimilation' which involves men relying on familiar stereotypes or 'generalisations about a person's social type' (Kanter, 1977b:971). One of the primary forms of assimilation detailed in Kanter's theory is 'role entrapment' whereby dominants categorise women in gender-appropriate, familiar 'female caricature roles' and treat them accordingly.

The data from this study was examined in relation to Kanter's female caricature roles (1977a:233), including mother, seductress, pet and iron maiden. There was ample evidence of three of the roles (mother, seductress and iron maiden) but none of the 'pet' which is a 'cute, amusing little thing' (Kanter, 1977a:235). When categorising and analysing the data through the lens of Kanter's caricatured social roles, another unexpected gender-appropriate role became apparent. I have termed this new role 'mob wife'.

Interviewee data indicated that some pilots who were viewed as sexually unavailable or were slightly older than their colleagues found themselves cast in the role of 'mother' or 'older sister'. The mother caricature is a 'safe' role whereby a woman is 'rewarded by her male colleagues primarily for her service to them and not for independent actions' (Kanter, 1977b:982). Interviewees cited numerous examples of *mothers* being expected to provide emotional support, feminine advice and reassurances to their male colleagues at all levels of the organisation.

> *I found the biggest thing is that the guys … the guys would use you for all sorts of advice. I feel like a Dear Ellie column. [laugh].* ***(Ellie, ADF pilot)***

Men caricaturing women as being in this 'safe', benign role is not problematic in and of itself. However, Davey found that, in the commercial aviation context, 'women are expected to meet the emotional needs of their male colleagues' … 'despite being isolated and unsupported themselves' (2004:644). ADF interviewees found that the emotional support and advice they so willingly extended to male colleagues was rarely reciprocated when they most needed it.

> *And they'll accept that you want to listen to them because you're a girl but they won't accept the fact that you need to speak to them, to unload stuff that they're not even going to listen about.* ***(Cindy, ADF pilot)***

> *I had been there emotionally for a bunch of them for stuff that happened. They came and sat in my room and had a teary, and the ones that I thought I had a good friendship with turned out to be useless in providing support when I needed it.* ***(Pauline, Air Force pilot)***

Other researchers have reflected on the emotional sacrifices made by women expected to adopt mother or sister personas (Furr, 2002). Younger pilots valued being viewed as a mother/nurturer because this role enabled them to gain acceptance and bond with their colleagues. However, as they became more experienced and self-confident, they grew increasingly tired of not receiving emotional support themselves. When they reached this point, their enthusiasm for providing womanly counsel waned considerably. Women pilots want to be seen as legitimate equals, and seek acceptance and respect on the basis of their flying skill and contribution to airpower, not as emotional care-givers.

The most common gender stereotype detected in the data was that of the 'sexual object' which Kanter also describes as 'seductress' (1977a:234). Women

stereotyped by the dominant group into this sexualised role can be rewarded for their *femaleness* but, if their attentions are cast too widely, may become Freudian 'whores' to the more motherly 'Madonnas' (Kanter, 1977a:233). If perceived as sexually available, women pilots become a source of rumours regarding their sexual exploits, true or otherwise.

> *I think they're almost just in the habit of it. They're … during that time they're so, in their general life, they're quite degrading of women… you know, it's a terrible culture… it just comes out and they'd be, like, "Oh, yeah. She's hot. She slept her way through course" kind of thing. Not really meaning it and knowing that that's not true but then the problem is then those people that hear that, that don't know, think oh, well, it must have happened and then they pass it on. So that's the problem with the rumour chain.* ***(Pauline, Air Force pilot)***

Pilots spoke of denying themselves possible relationships in order to avoid gaining 'seductress' reputations but to little effect; they were gossiped about anyway.

> *I think I was a lot more careful than I would have liked to have been in my life. I would have liked to have had more fun if you understand what I'm saying [laughs]. But I was – I worked really hard to not get a bad reputation because I know some of the girls have had bad reputations and so I kept myself clean and just didn't want anyone to have anything to talk about me.* ***(Margaret, former Air Force/current commercial pilot)***

Margaret's statement 'I kept myself clean' infers that to have sex is to be dirty, a perception perhaps reinforced through a culture constantly denigrating women who are sexually active. In 2013, during the writing-up stages of this research, a former interviewee (with whom I had formed a subsequent friendship), telephoned me to discuss a situation within her workplace. She advised that she recently received a text from another (male) pilot informing her that members of her

squadron had a wager, involving fairly high levels of currency, which focused on her breasts.

This pilot had apparently put up $200.00 and proceeded to ask her an extremely personal and intimate question about her breasts to ascertain if 'he had won the bet'. Although this incident fell outside the bounds of my data collection, I chose to include it[5] because it so succinctly captures the way in which women pilots can be both sexualised and diminished by the actions of the dominant group of male peers. This member felt degraded, embarrassed and distressed that her breasts were a topic of interest and conversation within the squadron.

Kanter's theory notes that, for attractive women stereotyped as seductresses, 'men could adopt the role of protector', which serves to 'put up further barriers to the solitary woman's full acceptance' (1977a:235). Some women pilots spoke of being 'owned' by the group of dominants who decided 'their woman' was in need of protection from other men.

> *Yeah, and so the other guys wouldn't have let me talk to anybody else out in public anyway because they would look after me.* ***(Nelly, ADF pilot)***

> *Yeah, I was definitely included [in social activities] but it was definitely known that I was sort of owned, you know what I mean.* ***(Bianca, Air Force pilot)***

> *So no one messed with me. I'd be out and, if anyone came up to me, they would deal with it… I would then be looked after by everybody on my crew and no one went near me.* ***(Tara, Air Force pilot)***

In terms of being 'owned', some women felt quite proud of their protected status, viewing it as the ultimate sign of acceptance. Nevertheless, being in need of

[5] With permission from the pilot

protection does not suggest *equal* status within the group. *Protecting* may indeed be a *gentlemanly*, brotherly and even inclusive gesture towards women pilots. However, Kanter's theory implies that this role may be yet another means of diminishing tokens, as playing protector allows a man to reassert his masculine dominance by 'looking after' the *weak, fragile* woman.

Another stereotyped persona which emerged through the data from this study was that of the cool, clinical and tough pilot who 'took no crap from the boys'. Kanter refers to this persona as the 'iron maiden' (1977a:236) and women inducted into this caricatured role were not in need of men's protection! While Kanter's study determined that iron maidens are viewed with suspicion, this was not the case for women pilots in the ADF. Conversely, within an ADF context the women stereotyped into this role are afforded the most professional respect and, sometimes, are held in awe by both men and women. This is perhaps because they demonstrate the highly valued 'tough' and emotionless persona by being strong and forthright, and patently refusing to adopt more feminine stereotypes.

> *… the guys already have a view of her [another female pilot], you know, they respect her. It's very different. They respect her because she, you know, she comes across as cold and blunt and she will tell them, you know, in no two ways … so, therefore, they don't mess with her, they don't stuff around with her.* ***(Mindy, ADF student pilot)***

Interviewees in the ADF study respectfully described women in this category as being 'one of the boys' but, at the same time, 'not taking any crap' from the boys. It seems that women placed in this category by the dominant group tended to be those who were quite proficient at 'performing masculinity'. However, like the women in Kanter's original study, pilot iron maidens were 'stereotyped as tougher than they were' and 'trapped in a more militant stance than they might otherwise take' (1977a:236). Some of them were also branded 'lesbians' or 'butch', possibly because they minimised their sexual availability.

> *So, I always was in control of myself … so yes, some of the boys would go, hey - - - even at some stage there was this perception that I might be a dyke.* ***(Grace, ADF pilot)***

Interviewees who were perceived to be iron maidens by the dominant group seemed largely ambivalent regarding false rumours about their sexuality. They accepted this as a consequence of their tough outer persona, which they felt enormous pressure to maintain lest they lose the respect of other pilots. Tears and/or other emotional (womanly) reactions were absolutely unacceptable, with pilots describing the techniques they and other women used to hide any 'weaknesses' from their colleagues. The women's bathrooms in some flying squadrons hold many secrets!

While women readily spoke of being viewed as tough, feeling sexualised and required to provide emotional support to men, there was no evidence in the data of Kanter's fourth role, that of the 'pet' (Kanter, 1977a:235). This may be because 'cutesy, amusing' women are highly unlikely to be selected to become military pilots in the first place, due to their not being 'stereotypical' pilots. However, a fifth category emerged, the role of being 'married to the mob' or, in a shortened form, a 'mob wife'. Although a woman could only be inducted into this privileged role by marrying a male pilot, merely being married was not sufficient in and of itself. It was the dominant group's response to married women pilots that suggested that this may have been another comfortable and appropriate feminine role, which aligns with the other stereotyped informal roles in Kanter's theory.

Mob wives were afforded respectful treatment and equal-peer status irrespective of how they had been perceived or treated prior to their marriage. Anne, a junior ADF pilot, experienced only minimal gender-based issues throughout her career which she attributed to being '*married [to a pilot] and into boy stuff'.* Marrying a pilot was cited as a turning point for several interviewees across all three Services,

as this new role seemingly enabled them to escape the shackles of any stereotyped roles that had previously plagued them.

> *Oh, I don't care anymore. Like, I don't [laugh] ... it was more difficult ... now that I'm married, it's easier.* ***(Anne, Air Force pilot)***

> *I was married by then as well. And I think it does sort of help once you're married, especially if you marry a pilot.* ***(Gen, former Air Force pilot)***

> *Because I said, "How did you deal with this (gossip and rumours)?" and she [another female pilot] goes, "Oh, it all got better once me and [another pilot] got together, and then it was all fine" and I was like, "Great, so I have to marry a pilot? Never going to happen". If I was married, it would be a lot different, yeah.* ***(Margie, ADF pilot)***

Although this data might suggest that marriage itself is a panacea as it removes any 'seductress' role issues pertaining to sexual availability and allow 'safe' relationships to occur between men and women. However, women married to non-pilots did not experience the same level of acceptance.

I initially hypothesised that marriage might be the ultimate form of acceptance by a dominant group member and, thus, formally confirm a woman's status as an 'insider'. However, another possible explanation might be that once women pilots marry other pilots, they are afforded a status held by *all* pilots' wives. Squadron codes mandate that pilots look after each other's partners and families due to the nature of operational flying and military service. While I remain unsure of which explanation is correct, evidence from *civilian* pilot interviews also indicates the prevalence of the mob-wife role in that context. This suggests that this role may be equally applicable in civilian situations. The question of whether this 'mob-wife' caricatured role might also relate to other non-traditional fields warrants further consideration in light of extending Kanter's theory.

For the most part, interviewees accepted the gender-appropriate roles they were afforded or had actively acquired themselves. Many interviewees felt that being stereotyped into certain roles was a necessary consequence of choosing to work in a non-traditional occupation. Kanter observes that 'it is often easier to accept stereotyped roles than to fight them' (1977b:984). Agostino (1998) also notes the pressure placed on military women in Defence to adjust to and accept the stereotypes deemed appropriate for them by the dominant group.

Unfortunately, conforming to gender-appropriate stereotypes, however benign or inoffensive, means that women can never be accepted as just pilots and equals. If women are typecast into caricatured roles, they remain 'othered' and may never be valued as legitimate and equal pilot peers. A frustrated Andrea expressed this very succinctly.

> *... you're either a bitch or a slut. Choose one. Unfortunate. You can't just fly. You can't just get on with the job and do what you need to do.* ***(Andrea, ADF student pilot)***

Women pilots' responses to dominant culture

Despite the entrenched layers of opposition that women pilots must negotiate within the military context, many do remain in the ADF for a considerable period of time. Undoubtedly, this is due, at least in part, to their contractual obligation. Personnel are simply unable to leave prior to the end of their contract (which can be up to twelve years in the Air Force) without incurring hefty financial penalties.

However, what should not be underestimated is women pilots' absolute passion for flying and their strong desire to fulfil their life-long dreams of flight. This motivation and enduring passion for flying has enabled a small number of ADF women pilots to succeed in their chosen profession despite encountering some major gender-based challenges along their career journeys.

Britton observes that, to succeed in highly masculinised contexts, women 'are forced to make severely constrained choices between accommodation and resistance' (2000:427), which may be further exacerbated within a military construct (Silva, 2008). To succeed as military pilots, women must learn to somehow 'negotiate their femininity' within a workplace culture that can be demeaning, isolating, hostile and/or potentially unsafe. Pilots in this study spoke quite frankly about adopting deliberate strategies for surviving within the highly masculinised world of military aviation, with some appearing to be more successful than others.

Ely's (1995) work on women's social construction of gender identity is beneficial to situating women's responses to the dominant male culture. However, based on the data from my own research, I developed a coding framework for understanding and situating women's responses to the dominant culture, which features the strategies: of emulation, integration, accommodation, isolation, alienation and self-actualisation.

Emulation was the most common strategy employed by pilots in this study, with women who adopted this approach making deliberate attempts to become 'socially invisible' (Kanter, 1977b:974). They achieved this by consciously 'taking on, to the extent possible, the attributes of their successful male colleagues' (Britton, 2000:427) and 'conforming and changing, and becoming 'honorary men' (Bagilhole, 2002:149). This is a very common tendency for women working in non-traditional fields, such that they might 'blend in' to the dominant masculine culture (Chusmir, 1983; Robinson & McIlwee, 1991; Gale, 1994). Emulation can involve women changing their dress, behaviours and attitudes to emulate the dominant majority worker (Becraft, 1989; Yount, 1991; Whittock, 2002).

Denissen refers to this as 'constructing and managing an occupational identity' (2010:1051). Davey and Davidson's (2000) study of culture within commercial aviation found that some women interviewees 'were content to be treated the

same as other pilots, despite the fact that this invariably meant being treated as a man' (2000:216). Interviewee's reflections in this study showed that this is also true of military aviation. The women who achieved the greatest acceptance by their male pilot colleagues were those who were best able to 'perform masculinity', through either emulation or assimilation, in order to integrate into the dominant culture.

The ability to adopt a masculine façade was cited by a large number of interviewees as absolutely necessary to their success. While some ADF interviewees felt comfortable performing in a masculine way, others found it more challenging and had to make a conscious effort to deliberately adopt a male persona, with some speaking of the measures they took to 'be one of the boys'.

> *I changed my gestures. When you sit, when you talk, the way you gesticulate, the way you slide your shoulders, the way you go drinking, the way you slap somebody's back, the way you won't bat your eyelashes. Not that I was particularly overtly feminine to start with but I was relatively girly before, especially when I went into the military. But [despite] all of that, I behaved as if I was a boy. I drank with the boys, I out-drank them, I played sport with them, team sports, touch footy and as much as I hated it … I did it.* ***(Grace, ADF pilot)***

> *Like, I spent my first, probably, I probably reckon my first seven years, or so, of flying, with a bad shoulder. And I've got issues in my left shoulder now because I spent the whole time hunched over and I think subconsciously trying to hide that I had boobs, and to fit in to be one of the boys, more than anything.* ***(Ellie, ADF pilot)***

Women less naturally inclined towards adopting a masculine persona did not enjoy taking on what was, for them, an unnatural state but felt compelled to do so to succeed. While interviewees employed a wide range of emulation strategies to fit

in and/or blend in, they did not always relish being in 'disguise'. Both Lilly and Cindy considered the inability to 'be one of the boys' a key factor impeding women pilots' success, especially through their early career stages.

> *… and it was about two days later, he (former instructor) pulled me aside and said, "What is the go?" I said, "What do you mean?" He said, "At work, you're a completely different person than what you are outside, like when we were in the mess" and I said, "Well, you have to be". He said, "What do you mean you have to be?" and I said, "'Cause if you're not, you won't make it in aviation" and he said, "What about the rest of the Army?" I said, "No, the rest of the army is different. You can be a girl in the rest of the army; you cannot be a girl in aviation".* ***(name removed, Army pilot)***

> *It's very much a man's world. It's almost like you pretend to be a man so, like, you have to be one of the boys. If you're not one of the boys you don't make it.* ***(Lilly, ADF pilot)***

Cindy, who had had ADF experience prior to undertaking flying training, attributed the ability to put on a 'façade' as being critical to women's piloting success within the military construct. She also noted the additional challenge this brings to women entering this non-traditional employment field within the military.

> *… they [women who don't succeed in military flying] don't have the know-how, they haven't learnt to put on that façade… being one of the boys, fitting in with the boys, all of that sort of stuff… I think that is one thing that makes pilots' course … more challenging for the girls 'cause they're also trying to learn what personality they need to make it.* ***(Cindy, ADF pilot)***

She and numerous other pilots further observed that the need women felt to adopt a masculine façade wasn't purely self-induced as some were given direct advice by their superiors and peers to 'man up', 'grow a set of balls' or just 'be a man'.

Women who did manage to conform to the masculine culture through emulation may have succeeded in ADF flying careers but sometimes suffered other consequences. Acker notes the struggles faced by women when attempting to adapt to the dominant culture; 'to function at the top of male hierarchies requires that women render irrelevant everything that makes them women' (1990:153). A lawyer interviewee in Pierce's study of gender in law firms noted that, in deciding to 'act like a man', she 'squeezed the female part of me into a box, put on the lid, and tucked it away' (Pierce, 1995:134).

Several women pilots in this study expressed the view that suppressing their femininity to emulate men was exhausting and sometimes compromised their personal identity. Interviewees spoke of feeling emotionally drained, confused about their identity and 'lost' at different times during their career, while some pilots openly mourned their lost years of womanhood.

> *And I did what I had to do as a pilot; I put a lot of my feelings in a box and left them there, to do what I had to do…. I was tearing my hair out, needing to let out a feminine side…. I found it very challenging to my identity of self… it took me a few years to, sort of, re-find out who I am outside of that because it was so all-absorbing. And I think it's very unbalancing for a female. You do not have access to that – to women.* ***(Pauline, Air Force pilot)***
>
> *I became extremely masculine trying to fit in ... I and I found in the end I was actually quite empty I didn't know what that emptiness was and it was because I wasn't balancing it with my femininity.* ***(Bianca, Air Force pilot)***
>
> *You miss out on becoming a girl, if that makes sense. Like, you … all the things that you would normally learn and talk about with other girls as you're growing up… just as you're, sort of, growing up and developing as a*

> *young woman. I, kind of, missed all that because I was hanging out with guys.* ***(Jen, Air Force pilot)***

For some women, being 'one of the boys' is their natural, preferred state and they preferred to be treated in the same manner as the men pilots. These were classified in the 'integration' category because they found it comparatively easy to operate within highly masculinised contexts by simply being themselves. In her research into coping strategies employed by women coal miners, Yount (1991) found that 'tomboys', due to their ability to assimilate into the dominant culture, were most likely to gain acceptance in highly masculinised workplaces.

Yount's (1991) supposition proved accurate within a military aviation context, as the women pilots most accepted by the dominant group were those who felt a natural inclination towards masculine pursuits and behaviours. As observed in Chapter Four, numerous interviewees from all flying contexts happily described themselves as 'tomboys' and expressed a preference for activities that might be deemed 'masculine' within our gendered society. These women often preferred the company of men and enjoyed operating in all-male domains.

> *I spent most of my life hanging around dad and the blokes and guys, and watching footy and all of that sort of stuff. Mum and dad taught us to be very independent and stand up for ourselves… I like the guys. I prefer working with guys than girls any day, to be honest. 'Cause there's no bitchiness, it's just, you know, if they think you're being a tool they'll tell you, kind of thing, or vice versa. Like, it's, kind of, funny.* ***(Ellie, ADF pilot)***

> *Yeah. I was one of the boys… I didn't have a bad relationship with any of the guys. And I ended up being one of the guys on my pilots' course, his best man at his wedding.* ***(Renee, ADF pilot)***

> *Well, I think I probably managed a bit easier because I wasn't a girly-girl*

> *from my childhood doing all my soccer and running and stuff. I think that I just kind of fit in with the boys, as one of the boys, I guess.* ***(Anne, ADF pilot)***

Some interviewees in this category struggled to understand why it was necessary to conduct research into gender-based barriers and challenges because they believed that they had not encountered any themselves. They had little difficulty balancing their femininity or any anxiety about spending their time with 'the boys' because they preferred the company of men to that of women.

A small number of interviewees managed to integrate into the dominant group without being tomboys themselves. They were generally women who were well-supported by their peers on course, innately self-confident and/or had experience in either flying or the military that made the adjustment to flying training less arduous. The women in this group also fitted into the 'self-actualisation' category, as discussed in later paragraphs.

A small number of interviewees didn't fully integrate by 'becoming a man' and yet still managed to succeed through the early stages of their flying careers while, for others, failure to meld into the dominant masculine culture had career-ending consequences. In other non-traditional fields, women who resist conforming to the dominant culture can find themselves isolated, lonely and outsiders in the dominant group (Bagilhole, 2002; Andrew, 2009). This was inarguably the case with women pilots within the military, where fitting in to the dominant group is so necessary to career success. A number of interviewees who were unsuccessful through pilot training and/or early career stages attributed their inability to 'fit in' as a key factor affecting their progress.

'Accommodation', a category borrowed from Ely, describes techniques used by a small number of women pilots to 'establish rapport with men by drawing on traditional sex-role relationships' (1995:620). Women who used this technique exploited their femininity as a means of gaining acceptance from the wider group

through flirting, 'being girly', 'acting helpless' and 'playing the girl card'.[6] However, not only were they unsuccessful in gaining the acceptance of men, they were actively reviled by their woman pilot peers.

Interviewee data indicates that women who were unable to integrate through other means opted for either 'isolation' or 'alienation' as two quite distinct means of coping. Those who chose the former cocooned themselves against the dominant group by making a conscious decision to 'fly solo', studying alone, not socialising with the dominant group and focusing purely on performing sufficiently well to progress their flying careers.

> *So, and I, it got to the point where I became really introverted, like I really pulled back just for self-preservation… I just actually had a lot of alone time, yeah. I can't say [that] pilots' course was my favourite course ever...* ***.*** *I still don't know how I did it, to this day. It was tough. I just studied my toosh off.* ***(Bianca, Air Force pilot)***

> *I closed myself off quite a lot and I became quite insular and ... I never felt that I could relax.* ***(Margaret, former Air Force pilot)***

One pilot noted the impact the 'going it alone' strategy had on her flying career. In most ADF aviation contexts, aircrew work in tightly knit groups and, due to the nature of flying, are often required to spend significant periods of time with that crew on deployments and overnight sorties. One interviewee chose, quite deliberately, not to socialise in any way with the men from her flying squadron, primarily because of past incidents of sexual harassment, which impacted on her career quite dramatically. She was counselled by the squadron hierarchy for not being a 'team player' and not 'fitting in' to squadron culture. Although an excellent pilot, she felt she was subsequently 'punished' by receiving an undesirable posting

[6] As told by other interviewees, as the interviewees to which this applied did not describe themselves in this manner

within the squadron and, on the basis of this and other events, decided to end her flying career.

The alternative to isolation was 'alienation', whereby women actively decided to 'take on' the dominant culture by challenging the hegemonic masculinity in a number of ways. Some became more overtly feminine or 'girlier and girlier'[7] but noted the struggle this created within the ADF aviation workplace:

> *And then it's hard for you because it's like you have two personalities, and if the girly personality comes in at work, the guys are like, "What the hell?" so it's really hard to actually keep those two things separate. So - - - you're just like, "Where am I again?"* ***(Margie, ADF pilot)***

Others reacted by complaining about the dominant culture, either formally through the chain of command or calling out poor behaviour such as tasteless jokes, harassment and/or bullying in the workplace. Women in this group (branded 'dobbers', 'whingers' and 'complainers' by other interviewees in this study) were the least accepted by the dominant group. Those who pushed back against the dominant culture during their training course tended to be quickly eliminated from the world of flying which is another reason for so few women reporting incidents of unacceptable behaviour. As previously noted, failing to be accepted by the dominant group can have career-ending consequences for women pilots because, as Nelly stated:

> *Yeah, and you need allies if you haven't got boys on your side that are going to have your back, you're not going to make it.* ***(Nelly, ADF pilot)***

The final strategy, which I called 'self-actualisation', could only be enacted by women who had the innate confidence to truly be themselves. Those with previous military or flying experience generally reached this stage much earlier than their

[7] A term used by interviewees

younger, less experienced peers because they had a stronger sense of self-identity and were 'comfortable in their own skins'. Interviewees who experienced few, if any, issues through their flying training were those who reached the self-actualisation stage quite early in their flying careers.

Women in this group were generally accepted by the dominant group but had the self-confidence to say 'no' when they chose not to participate in group bonding activities. Because they were not as reliant on the approval of the dominant group, they were able to focus on flying to the best of their ability. Bess, a student at the time of our interview with previous military experience, had developed her own 'coding system' to explain women in this particular group.

> *... that's funny, I was about to say that, as I have three different classifications.* ***Yeah, what are your three classifications?*** *My three are the ... there is your ... the girly girl, the cute and hair, and play the boys and all that kind of stuff, and then there's the butch. Try to be one of the boys, try to prove a point, try to ... and then there's just people that actually don't ever care or think about it; they're just in the middle. They're like, I just picked this job and I'm doing this job and I look different; I didn't even notice, do you know what I mean? ... maybe I made that group because that's where I fitted [laughing].* ***(Bess, Air Force student pilot)***

For other women, the stage of self-actualisation only occurred once they gained confidence and started to feel more secure within themselves. Factors such as age, experience, rank progression and seniority within the military all contributed to this change. More confidence meant that women stopped feeling the need to 'blend in' with the men; their desire to be 'one of the boys', both socially and in their appearance, lessened once they felt more comfortable negotiating both their pilot identity and gender.

> *… I've got to the point where now I don't give a crap and now I'm just a girl*

> *at work anyway, and I'm just like, "Well, if you guys don't like it, you can just get stuffed."* ***(Margie, ADF pilot)***

> *I think now that I'm older, that's not so much of an issue, 'cause it's not the same anymore. I go home on Friday night, I don't need to be one of the boys … I think you reach a point when you're like, "I don't need to be one of the boys anymore." And for me now I don't.* ***(Erica, Air Force pilot)***

> *…they'd say, "Come on let's go, let's go," and I'd say, "no, this is – this is going to be a boys' night I'm not coming". And I just started detaching myself from trying to be one of the boys which was the way I thought I had to be … and it just made life so much easier.* ***(Isobelle, ADF pilot)***

More experienced and mature pilots also became more willing to call out poor behaviour by the dominant group which less credible and self-assured women could not have managed to do without alienating themselves from the dominant group.

> *So, whenever I got any, sort of, crap, I gave it back and there was … shocked looks normally, post that, going, "Excuse me, you can't say that to me". I'd say, "Well, you can't say what you said to me."* ***(Ellie, ADF pilot)***

Some women in this category, many of whom struggled with negotiating their femininity earlier in their careers, actively worked to generate greater solidarity among the women pilots in all three Services. A number of interviewees spoke of wanting to share their life-lessons with more junior women pilots, to help them avoid some of the pitfalls they experienced in their own early flying years. Some pilots even organised social activities to generate women pilot networks and provide greater support for younger women pilots. Throughout this research, possibly inspired by the research itself, I detected a tangible and growing sense of solidarity in the ADF women pilots' network. This was primarily driven by more experienced pilots actively seeking to make aviation culture more inclusive for more

junior women.

Cultural variations across different ADF contexts

For the purposes of this research, it is necessary to recognise that there are some cultural differences among the different Service contexts, in relation to women pilots' experiences. Although Navy and Army pilots cited a range of challenges (especially during the Air Force-led stages of their early flying training), the data indicates that Air Force pilots faced more extreme levels of poor treatment through all career stages.

With only one or two notable exceptions, Navy and Army women pilots, for the most part, felt quite welcome and included in flying organisations following their initial training. While still enduring a range of gender-based challenges, they simply did not report the same level of overt adversity and hostility as expressed by pilots in the Air Force. Once this became apparent through earlier interviews, I asked subsequent interviewees why this might be the case.

> *(Service) air crews are a very tight little environment, very tight, and I love that, I really do but that means then that the rest of the (Service) doesn't really like us too much and that's difficult to deal with, you know. You're on a ship, you know, you're in, you're not really in command, under the command of the captain really, because we run our own show.* ***(name removed, Navy pilot)***

> *Just … that's not necessarily from just a pilot perspective but from an aviator's perspective because aviation is an asset to the Navy. It's not their core business. So it's not … the world doesn't revolve around air crew as it does in the Air Force* in *terms of support and understanding of aviation things.* ***(name removed, former Navy pilot)***

The previous quotes were selected to demonstrate two possible explanations for variations in the aviation cultures of the three Services. The first explanation is that

in both Navy and Army, aviation is a 'sub-culture' within the broader Service. Personnel are thus required to form their own 'tight little' aviation community within each Service, which the rest of the organisation may not 'like too much'. Perhaps there is unity through adversity?

The second explanation hints at hegemonic masculinity and the warrior culture as causal factors. Unlike in the other Services, in the Air Force, fighter pilots are the 'war fighters' and warriors of that service. The culture of 'war-fighting' primacy may impact a range of other 'non-war-fighting' flying platforms. Due to their being in 'supporting' roles, rather than *bona fide* 'warrior' roles, perhaps Navy and Army women pilots do not challenge the dominant military masculine hegemony quite as directly as their aviatrix peers in Air Force.

Conclusions

Irrespective of context, there is no doubt that the cultural environment has an influence on women's ability to fly at their very best. A number of former ADF members and trainees implicated gender barriers, such as heightened visibility, intense loneliness, harassment and bullying, as key contributors leading to their early departures from ADF aviation. Bianca, a highly competent Air Force pilot, sums up this cultural impact very succinctly.

> *I have got thick skin and it's just banter, after a while it becomes a bit tiresome when you are dealing with it for your whole career, you are like, I remember getting to one point and going it's not worth it. I am so sick of fighting for just doing this job, I don't want to do this anymore.* ***(Bianca, Air Force pilot)***

Even women who do manage to succeed in the highly masculinised world of aviation can grow very tired of the cultural impediments that manifest through every career stage. Culture has a substantial impact on long-term pilot retention, with several Air Force and a small number of Army interviewees already planning to exit the ADF at the time of our interview. Other factors influencing women pilots'

retention in the military are discussed in further depth in the next chapter.

CHAPTER SEVEN – BARRIERS TO PROGRESSION AND RETENTION

CHAPTER SEVEN - BARRIERS TO PROGRESSION AND RETENTION

'Along with the church, the military is the last major profession in which women face significant and entrenched obstacles to career advancement' (Smith & McAllister, 1991:369).

Introduction

Faced with a culture that can hardly be described as welcoming, it is little wonder that the Royal Australian Air Force's (RAAF) ability to retain women pilots is slight, even in comparison with the other Services. When this project commenced in June 2009, women comprised only 2.4[1] per cent of Air Force's pilot population. In numerical terms, this this means seventeen or so women from a total pilot population of around seven hundred. While women pilots in the Navy and Army generally tend to remain for longer-term careers, their retention in the Air Force is comparatively poor. To demonstrate this point, when this project commenced, there was only one woman pilot remaining in the Air Force beyond her contracted twelve years and she resigned shortly after our interview.

It would be wrong, however, to attribute this poor representation and retention simply to an unwelcoming culture, as cultural barriers are paralleled by several significant structural impediments. Although women have been training as Air Force pilots since 1987 (Smart, 1988), at the time of writing, there are no women pilots in the Permanent Air Force above the rank of Squadron Leader, a relatively junior rank. Whereas women in the wider Air Force have progressed into senior roles in a range of non-traditional occupational areas, such as logistics, engineering and Air Traffic Control, women's progression in the pilot stream is a notable exception.

The core dilemma for the Air Force is the fundamental mismatch between its organisational structure (particularly the pathways to a flying career) and the range of broader factors influencing how women conceive and pursue their careers. This

[1] According to data sourced from the Directorate of Workforce Planning in 2009

chapter seeks to identify and critically analyse the barriers that are currently influencing women's longer-term retention and career progression in both the Air Force and wider ADF piloting roles.

The empirical data on which this chapter is based was drawn primarily from semi-structured interviews with women pilots in both military and civil aviation contexts. Interviewees' responses to questions such as 'How will/does/has flying fit in with other aspects of your life?', 'What are the main challenges associated with being a pilot?' and 'What are your plans for the future?' generated responses which informed the analysis in this chapter. While the focus is on ADF pilots' experiences, civilian insights add depth to the discussion, especially regarding the efforts that are being made by civilian industry to encompass the needs of their growing ranks of women pilots.

The civilian case also has particular bearing on the issue of pilot retention in the Air Force as many of its pilots, men and women, leave ADF flying to pursue commercial aviation careers. Six interviewees in this study had experience working in both commercial and ADF organisations, having left Defence to pursue commercial aviation careers. Their insights into both workplaces enhanced some of the themes addressed in this chapter.

Theoretical perspectives

There is a range of explanations for why there is a 'glass ceiling' impeding women's retention and promotion, with most based around the enduring phenomenon of male privilege within organisations (Ng & Wiesner, 2007). As noted by Cox, 'men made workplaces in their own image' (1996:83). Male privilege can be overt or, perhaps more insidiously, very subtle. For example, one of the primary barriers impeding the retention and promotion of women pilots identified through this study was the 'systemic discrimination' within policies 'that may, at least superficially, seem equitable' (Goyne, 2008:34).

Acker (1990) argues that, in patriarchal institutions like the military, the organisational structure itself can be highly gendered. Gendered structures, designed to

accommodate the prototypical male worker, can impact on women at all career stages, from selection and entry to promotional opportunities and progression. Bagilhole contends that 'only men can succeed within these gendered processes because they are relatively unencumbered by domestic and personal responsibilities' that can affect women's progress and success in gendered organisations (2002:99).

Bagilhole further observes that organisational structures 'are intimately entwined with most women's major responsibility for unpaid work in the family and men's contrasting lack of it' (2006:115). Accordingly, in many organisations, structural disadvantage is most acutely experienced by women as they enter the 'mothering' years. Goyne's (2008) examination of limitations to ADF women's retention and progression makes this point very effectively. Her study shows, through statistical data analysis, that higher-ranking ADF women are far more likely to *not* have children than their male peers. This confirmed Goyne's (2008) hypothesis that women with children are unable to remain and progress in the ADF due to the numerous barriers and challenges impeding their progress.

Fassinger (2002) argues that workplace structures must, in some part, be held accountable for the gender inequality that still exists in the workplace. She states that 'by and large, workplaces have not provided affordable or accessible childcare, flexible working arrangements (such as job-sharing and flexi-time), parental leave policies, and viable alternative paths to success (for instance, longer or more circuitous tenure tracks)' (2002:29). While, at face value, the barriers listed by Fassinger (2002) appear gender neutral, as Anker affirms, 'women are almost exclusively responsible for housework and childcare around the world' (1997:317). Therefore, they are likely to be disproportionately impacted by non-family friendly policies and processes within organisations.

Women in non-traditional fields may face even further disadvantage because organisations with highly feminised workforces tend to better facilitate and accommodate the needs of women workers through sheer necessity (Whittock, et al.,

2002). Conversely, the needs of women in non-traditional employment fields tend to be neglected by policy makers who may focus only on addressing the workplace needs of the dominant (male) group (Bagilhole, 2002). As McConachie notes, 'if the unstated norm is the single man, then one of the furthest points from that is the pregnant servicewoman' (2000:253).

Within the Australian context, recent research has determined that the organisational cultures within male-dominated organisations have enormous implications for the degree to which the needs of women workers (and, indeed, all workers) are met (Burgess et al., 2010). The construction of 'women's work', gendered beliefs about commitment and career development, and the attitudes of supervisors towards women play large roles in determining how women's needs are accommodated (Burgess et al., 2010).

Notable increases in both the number of women pilots and representation of women in the higher ranks of the ADF are essential to bringing about change. Neal-Smith and Cockburn (2009) argue that critical mass is necessary to improve the overall culture within aviation, a view which aligns with liberal feminist ideology (Agostino, 2000). It is *especially* important that women progress into aviation leadership, instructional and senior mentoring roles so that they can more effectively influence the ADF's aviation culture. There seems little point working to attract higher numbers of women into flying roles and optimising their success through pilot training only to have them resign at their earliest opportunity.

Analysis and discussion

Within the ADF, retention and promotion are closely intertwined. Unlike other organisations which can recruit into senior positions people from outside the organisation, with very few exceptions, all ADF leaders in the permanent forces[2] are promoted from within existing ranks. *All* military promotions are based on a complex

[2] The Reserve forces have more scope to appoint personnel at higher ranks, especially medical specialists, legal staff and other high-value personnel.

system that involves mandatory timing gates, a compulsory number of years in rank, the results of annual performance appraisals and other relevant promotional criteria. Under the current promotion paradigm, there is simply no easy means of increasing the number of women in *senior* leadership positions without both *retaining* women and then maximising their progression through the preceding career stages.

There are some Service-specific nuances that should be considered throughout the forthcoming discussion about retention and progression. Irrespective of any gender-based challenges, all Army pilot promotions are impacted by structural impediments; very few pilots of any gender are likely to progress beyond the middle Officer ranks because of their limited progression pathway. Although Navy pilots can and do reach the starred[3] ranks of the ADF, the very small number of women in Navy aviation (only four when this research commenced) makes it difficult to draw any firm conclusions regarding barriers to their obtaining promotion.

However, in the Air Force, as the primary deliverers of airpower capability, pilots are the occupational group most likely to rise to the starred ranks and beyond. As the Chief of Air Force, his Deputy and the majority of one- and two-star (very senior) roles are filled by pilots, this should technically advantage women pilots should any of them remain in the Air Force for longer-term careers. Under the current promotion ideology, whereby pilots reign supreme, the Air Force can *only* improve its numbers of women in the very senior ranks by elevating higher numbers of women pilots (and other air crew).

History indicates that, despite greater opportunity for progression within that Service, very few women have been promoted into the more senior ranks. This is primarily because most women pilots depart at the end of their contractual obligation or soon after[4]. The few women who have stayed beyond their contracted period, have tended to leave prior to, or shortly after, having children. Unlike in other non-traditional

[3] The 'starred' ranks are the most senior ranks in military organisations

[4] As evidenced by historical retention data sourced from the Directorate of Personnel – Air Force

fields, within the Air Force, the highest rank achieved by a woman pilot has been Wing Commander, as shown in Table 7.1. This pilot was the first woman to command a flying squadron, but she resigned from the permanent Air Force after starting her family.

Table 7.1 – Air Force Women - Occupational Representation Ratios and Highest Rank Achieved as at 2009

Officer occupation	% women as at March 2009	Highest-ranked woman currently serving (March 2009)	Highest rank ever attained by woman
Logistics	**35.4 %**	Air Vice Marshal **	Air Vice Marshal **
Air Traffic Control	**19.2 %**	Group Captain	Group Captain
Engineer	**7.6 %**	Group Captain	Air Vice Marshal
Doctor	**46.3 %**	Air Commodore *	Air Commodore *
Pilot	**2.4 %**	Squadron Leader	Wing Commander

Note: the stars indicate the 'starred' ranks of the Air Force; one star is equivalent to a 'one-star General'.

Without action, the Air Force will miss out on the numerous known diversity rewards associated with women's increased representation in leadership roles. Further, many of the issues addressed through earlier chapters, such as the lack of senior role models for women pilots, the shortage of women in leadership positions in flying schools and squadrons, and the ability of women pilots to influence key policy decisions, can only be addressed through increasing the numbers of women pilots in more senior positions.

Structural and cultural barriers

Apart from the broader cultural negativity discussed in Chapter Six, the reasons for the presently parlous situation lie in a mismatch between the existing Air Force flying career profile and the broader range of issues that women must consider in order to

achieve a proper work/life balance. Bagilhole maintains that, in male-dominated organisations, 'the accepted and dominant pattern of a career is still built around continuous lifetime service, working hard at all times, making oneself available at all times, working long hours, and with no career breaks' (2002:99).

Researchers have confirmed that the types of issues identified by Bagilhole (2002) are also key impediments to women in the ADF as they reference barriers such as rigid and inflexible career pathways and models of work that fail to encompass the needs of different types of workers, especially after having children (Burton, 1996; Goyne, 2008). McConachie (2000) postulates that the ADF's failure to build career structures and working models to accommodate women workers is a primary factor influencing women's longer-term retention.

The issue of highly structured, inflexible and linear career pathways can impact on *all* ADF women, especially those in non-traditional employment roles. However, the Air Force's career progression pathway for pilots is particularly unyielding, with a series of mandatory gates that must be passed through within strict timeframes in order for pilots to progress. Air Force pilot interviewees found that their careers were hampered by the very strictly applied pilot career progression model which has virtually no flexibility in terms of absences from work as might be associated with women's pregnancies and maternity leave. While Navy and Army pilots spoke of enjoying flexibility in their career progression pathways, Air Force pilots found their flying careers severely compromised if they could not meet timing requirements.

The pilot career model, called 'Temporal Discipline' (TD), was designed to facilitate maximum return-on-investment for expensive training and ensure that the Air Force has the right mix of pilot skill-sets across different ranks and flying platforms (Arms, et al., 2008). The TD model is based on a premise that each pilot will have two operational flying tours as a junior officer (below Squadron Leader rank). Therefore, the timings for most pilots would comprise an initial flying tour of four years (during which a term of operational captaincy on their specific aircraft type should be

achieved), followed by a two-year ground job (non-flying posting) or three-year instructional tour if they have sufficient captaincy hours to become an instructor. Then, there would be a return to the original operational platform (aircraft type) for two to three years during which time the pilot would be expected to become a B-category Captain (which means 'highly proficient') which would enable progression into executive or leadership roles on that particular platform.

If a woman pilot falls pregnant during an operational flying tour, her flying career is essentially halted for up to two years but her seniority in rank continues to accrue. The result is that the Air Force produces Squadron Leader pilots with very little flying experience who, therefore, are not competitive for progression into key squadron leadership positions such as Flight Commander or Executive Officer. Experience in these leadership positions is critical to a pilot's ability to progress beyond the rank of Squadron Leader and into more senior roles.

Further, the TD model does not work well for pilots who fail to attain captaincy during their first flying tour. There is actually a policy which describes mechanisms for removing these 'low performers' due to their failure to progress as mandated by this model. Factors that might impact on a pilot's ability to achieve captaincy during their first tour include being absent from flying for six months or more due to an injury or medical downgrade, or having to wait a long time for an operational conversion course. Other pilots might be affected if they are not successful on one type of aircraft conversion (such as fast jets) and then have a reduced period during which to attain captaincy on their next aircraft type. Conceptually, TD is a great tool for ensuring all pilots know their expected career paths through to the end of their first ten years of flying but its application can also be problematic for any pilot who follows a non-stereotypical career pathway.

Perhaps unsurprisingly, the TD model was developed to accommodate the working patterns and needs of the 'typical' male worker, with those of 'non-stereotypical' pilots simply not factored into its design. This is not unusual within a military context;

McConachie observes that this 'one size fits all' approach used in the military 'fails to accommodate the real difference inherent in members' situations' (2000:252). Of note, the inflexible structure of the TD model is also problematic for *men* who don't meet the concept of the 'ideal' male worker within a military context.

Male pilots who suffer long-term injuries, choose to prioritise fatherhood over their careers, are the primary care-givers or need to accommodate their partner's career requirements may also suffer pilot career-limiting (or career-ending) consequences. That said, women's absences for pregnancy and maternity leave (which are far more lengthy for women pilots due to their being grounded at an early stage of pregnancy) means that their careers are more likely to be impacted by such an inflexible career continuum.

The TD model means that there are major career consequences attached to having a baby at any stage of an Air Force pilot's early or middle career, before they attain sufficient captaincy hours on their chosen platform. Air Force pilots must maintain currency on the type of aircraft that they fly; currency requirements vary between different aircraft types, a twenty eight day-or-more absence from flying may require additional training and checks. Sufficient captaincy hours and ratings on a particular aircraft platform are necessary for Air Force pilots to progress their flying careers.

During the course of this research, I gained some first-hand knowledge of the impact of having children on women pilots' careers. After spending two years undertaking full-time study, I returned to the Air Force to assemble a project team to address many of the issues raised through this research project. Sam[5], Air Force's most senior woman pilot[6] at the time, was a critical member of that team. She was in the process of negotiating her post-project return to operational flying when she received an email

[5] Samantha (Sam) has given me permission to use her actual name.

[6] In the Permanent Air Force

from a member of squadron staff who was responsible for coordinating pilot movements within the Force Element Group[7].

She had recently had her first child and the timing of her pregnancy meant that she had been unable to complete her captaincy conversion on the C17 aircraft. The email informed her that 'due to the unfortunate timing' of her pregnancy and her level of seniority, her career as an operational C17 pilot was essentially over. This email, while devastating for Sam, threw further light on why the Air Force quite literally has no senior women pilots with children. Samantha, while still very junior, was (and is) Air Force's most senior woman pilot, a role model and mentor for women pilots and by all accounts, a competent aviator. She would have been lost to the Air Force had this situation not been resolved[8].

The rigidity of the TD model became further apparent during a working group discussion that my team held with pilot career subject matter experts (SMEs) to discuss the limitations to women pilots' careers. The SMEs informed us that, if a pilot had a baby at any time within the first seven years of her flying career (which, for most pilots, includes the age of twenty-eight, the average age of first-time mothers in Australia,[9]) she could *never* be an operational pilot. In the SME's view, there was simply *no* scope for negotiation, alternative pathways or any further discussion of this issue. This was primarily due to a dogmatic reliance on the TD model as 'the only acceptable' means of managing pilot careers. This staunch intransigence seems out of step in an organisation seeking to position itself as an employer of choice for women pilots.

The TD model's limitations had a profound influence on the behaviours, choices and career prospects of pilots in this study. Air Force interviewees who elected to have

[7] A Force Element Group (FEG) delivers a particular air capability with the RAAF and comprises a number of Wings and Squadrons where members might be posted to develop their professional skill-set.

[8] As discussed in Chapter Eight

[9] Based on 2011 Australian Bureau of Statistics data accessed from the ABS website

children whilst serving under their contractual obligation were unable to achieve the required flying tours and captaincy ratings which would have enabled them to progress in accordance with the TD model. This rendered them virtually 'un-promotable' beyond the junior ranks of the Air Force. These career consequences certainly factored into women's decision to leave the Air Force to pursue civil flying careers. At the time of the qualitative interviews for this research, there were only three women pilots still currently serving in the Air Force who had children and two of the three had already submitted their resignation paperwork.

Because of the known impact on their flying careers of having a baby, most Air Force pilots wanting to start their family left the Air Force either prior to becoming pregnant or at the conclusion of their maternity leave.

> *I don't know where to start [laugh] [in terms of planning a family] 'cause most girls who do pilots' course are twenty-one, and they do their ten years and then they get out and have kids.* ***(Erica, Air Force pilot)***

Other pilots waited, or were waiting, to have children until they were at a point in their careers where they wouldn't be as disadvantaged. In accordance with the TD model, this would normally be in a pilot's mid-to-late thirties after she had gained sufficient captaincy hours on her primary aircraft platform. The tendency for pilots to delay motherhood until they reached their career goals resonates with findings from other studies of military pilots (McGlohn et al., 1996). One Air Force pilot waited until she was in her mid-forties to become a mother, citing the desire to achieve her career goals first as a primary consideration when determining the timing of her pregnancy. Younger women were very reluctant to even consider starting a family before meeting their career goals.

> ***Have you given any thought to that [starting a family]?*** *Yeah, yep. I'm only [age removed, under thirty], so I've got ten years basically [of remaining contractual commitment] ... I really wish it wasn't a consideration [laughs]. I*

> *want kids though at some point, but not for a long time. Not until I've achieved what I – travelled and achieved what I want to do and that's something my mum's also very encouraging of.* ***(Irene, Air Force pilot]***

For other interviewees, a lack of meaningful and helpful information about managing pregnancy, a flying career and parenthood, together with tangible positive role models, compounded the feeling that juggling flying and motherhood was almost impossible.

> *You know, I'd love to stay [after having a baby] but I just don't know … one of the hardest things is you've got no one to talk to. Like, who do I go to? Like, all of my bosses they've all got families and they work 'cause they're not the mother. So, I've got nobody to talk to. I've got no one to go, "How do you make this work?"* ***(Jen, Air Force pilot)***

> *And there's no set up. There's nothing in the system that I can see, anyway, that … particularly for air crew, there's not enough girls around to have set precedents or to create positions and so, for me, I'm just a bit lost. I go, look, I don't know how to proceed from here.* ***(Jen, Air Force pilot)***

Civilian pilots spoke of very similar challenges in relation to accessing role models and information. Commercial aviation organisations have also been slow to create helpful guidelines and procedures for pregnant pilots, although civilian interviewee data suggests this may be slowly improving. All pilots, civilian and ADF, are keen for accurate information about their employment during and post-pregnancy. The extant lack of precise directions about options for managing flying and motherhood was extremely frustrating to many women interviewed in this study.

> *Okay. What I would love right now was for somebody within the organisation… to actually come and say, "Look, we understand where you're at in your career. You've had a fantastic flying career, really varied experience … we understand*

> *that you're …. probably looking at family. So, we'll support you in going and fulfilling ground jobs where possible until you're ready and this is, sort of, what we're thinking when you come back to flying. These are, sort of, the opportunities you're going to have and this career path that is an option or available to you."* ***(Jen, Air Force pilot)***

> *… it just doesn't feel like there's anyone really to talk to about that 'cause DP [the Directorate of Personnel] are very … just look at the next couple of years. Nobody does career planning and, for guys, … I know that's frustrating for guys but for females it's even more frustrating.* ***(Pauline, Air Force pilot)***

In the case of civilian pilots in the commercial context, at least they have larger networks of women from whom to access information and can source policies designed for other women staff. A number of commercial interviewees mentioned referring to crew attendant policies and guidelines to ascertain entitlements and guidance regarding pregnancy and post-pregnancy options.

For military pilots, although the lack of policy directions and information is not a barrier *per se*, it does reflect the degree to which women's needs have (or rather, have not) been considered through human resource policy development. Civilian pilots noted that crew attendant policies, processes and guidelines were very rigorous and thorough because the size of that work group mandates consideration through necessity. The small pool of women in this particular non-traditional field means that their needs simply have not been factored into planning and policy processes.

The lack of information, unclear organisational policies and dearth of positive role models caused some ADF pilots to feel that they needed to either fly or be a parent. This manifested in them holding a strong 'one or the other' view of parenting and flying and as a consequence, delaying motherhood until the final stages of their military flying careers.

> *Yeah, oh look, because I, if I'm going to have a family, I'm going to have a family. I'm not going to do anything half arsed. I don't know, I don't, I just don't think it's possible to do both well and I'm not about to fly half arsed, I'm not about to raise a family half arsed, so, at this stage in my life, it's definitely one or the other.* ***(Mindy, ADF pilot)***

> *Poor old hubby's been off for the snip, snip… and that's just my choice. So it would, to me, it would be very much a case of choosing career or your child.* ***(Jess, former Air Force pilot)***

> *Um, I suppose a disadvantage would be that if, like a male can pursue the family path and he can do all that whereas - - -whereas we can't. We have to put things on hold while we have a flying career. We can't do it. And some people manage in between and I don't know how they do it.* ***(Mia, ADF pilot)***

Some women had given serious thought to attempting to have a baby whilst in the ADF but knew that proceeding down this path was likely to result in career-limiting consequences. Their fears were not speculative, as they had seen the effects of pregnancy and motherhood on other women's flying careers and were suitably wary.

> *I think it would be pretty hard to manage both [motherhood and a flying career]. I think the general perception is that once you do have children you fall off the radar a bit. People don't really know you as being a pilot or whatever. It's the end of your flying career and you're into a ground job or whatever. I think it would be pretty hard to get back into it as well.* ***(Roberta, Air Force pilot)***

> *… I've watched other girls get pregnant – there's a girl who came through conversion, and they've done it just before – and now she's still struggling to bounce back from that, career-wise.* ***(Tara, former Air Force pilot)***

> *Well, I want to do that [have children] ...I could imagine that I'll need to accept the ground job or something in return for having a family life.* ***(Yasmine, Air Force pilot)***

The 'ground jobs' referenced by interviewees are postings that do not entail any flying commitments. Although all pilots must undertake one at some stage, two consecutive ones can be detrimental to their career progression, which again, stems from a linear career pathway with minimal flexibility. The stringent demands of currency in the cockpit and, at most, short-term absences from the workplace are reinforced for women pilots by occupational health and safety factors. While pregnancy can have career ramifications in many occupations, especially those deemed 'non-traditional' for women (Bagilhole, 2002; Hebl et al., 2007), policies that preclude military pilots from flying quite early in pregnancy are particularly disadvantageous.

While most ADF women can work until one or two weeks prior to their baby's due date, ADF women pilots are banned, by Health Directive 235 (HD235), from flying at the point that their pregnancy is 'confirmed' by medical staff. This could be as early as early as six weeks. This policy exceeds the legislative requirements of the Civil Aviation Safety Authority (CASA)[10], which recommends that women stop flying at the thirty week-mark (which is a fairly standard timeframe, worldwide). The thirty week benchmark exists due to scientifically supported medical advice addressing the health of the developing baby and occupational health and safety issues (Irgens, et al., 2003).

Ceasing flying on 'confirmation of pregnancy' means that pilots miss out on an additional twenty or so weeks of flying. This absence has ramifications for their progression on different aircraft types due to currency, recency, hours achieved and other requirements. For this reason, the ADF policy was *very* much resented by the majority of interviewees who had children or were pregnant at the time of our interview.

[10] Civil Aviation Safety regulations 1998 - REG 67.235; Australian pilots are not permitted to fly past thirty weeks of pregnancy, but current Defence policies ground pilots once pregnancy is confirmed.

> *And it's just a draconian stupid rule. I could be flying now on these missions.* ***(name removed, ADF pilot)***

> *And I said to the doctor, can't I sign, it's my choice, my own consent, yada, yada, but no, they won't allow it… I haven't made any waves about it this time because I'm in this job … but next year, when I'm down this training, I'm going to write to the surgeon general for an explanation because I just think it's a sexist policy.* ***(name removed, ADF pilot)***

> *and I wasn't even sick so there was just – it just seemed like there was no reason for me not to fly.* ***(name removed, ADF pilot)***

ADF interviewees felt that this policy was both paternalistic and disempowering to women, especially in light of CASA and worldwide guidelines. HD 235 has resulted in some women deliberately delaying the official 'confirmation of pregnancy' for as long as possible to minimise the impact on their flying careers and progression as pilots. One pilot, somewhat ironically, was permitted to fly whilst pregnant because the aircraft was registered as 'civilian' and not military. She entertained me with a very amusing anecdote about 'waddling' out to the aircraft and 'squashing[11]' herself into the pilot's seat, to the raised eyebrows of ground staff and other crew!

Further enhancing the case for removing pregnancy restrictions, women in other militaries are permitted to fly into their second, or even third, trimester (Ginsburg, 2014). Air Force crew attendants, who fly in the same aircraft as pilots, are also permitted to fly whilst pregnant, which seems to negate any genuine 'medical' reasons behind HD235. Interviewees felt that they should be able to make their own decisions about flying while pregnant based on the advice of medical experts and their own circumstances and preferences.

[11] Using her delightfully expressive terminology

From a policy perspective, even the measures that have been put in place to protect the interests of women, have not always been well considered. This manifests in more pressure being placed on individual women to make a choice between family and career. One example is a long-standing ADF policy dictating the management of vacancies created by periods of pregnancy and maternity leave. Current ADF policies do not allow ADF women to be replaced in their workplace during pregnancy or through periods of maternity leave. McConachie notes that failing to replace women on maternity leave results in significant resentment as others have to 'work harder during her absence' (2000:254). More recently, the AHRC also stated that the 'perceived inability to backfill maternity leave positions encourages negative perceptions … and influences the choices of those who may need to take it' (AHRC, 2012:217).

Ironically, this policy was designed to support women's re-entry into the workforce post-maternity leave by ensuring that they are not usurped from their rightful positions. However, while well intended, this practice does 'little to engender more positive attitudes towards the entitlements of pregnant members' (Chapman, 1999:29). Data from this study indicates that these policies are damaging to the acceptance of all ADF women in units and squadrons; a situation which is exacerbated for ADF pilots (and other air crew) because their pregnancy-related absences are much longer due to their inability to fly while pregnant. Accordingly, a pilots' pregnancy has a direct impact on the operational capability of a flying squadron or unit, with other pilots having to 'carry the load' and fly additional sorties[12] while the pregnant member is grounded.

As observed through Chapters Five and Six, women pilots work incredibly hard throughout their whole careers to prove themselves worthy and valuable members of the ADF team. As a pregnancy announcement renders a woman unable to operate as a pilot, this results in her feeling like a burden on her workplace, peers and supervisors which was/is untenable for many interviewees. As Burton observes, ADF 'women …

[12] A 'sortie' is military terminology for a flying mission/deployment entailing one or more aircraft.

tend to have a strong sense of loyalty to the ADF, military values and their colleagues … if, because of pregnancy or family responsibilities, they are not able to fulfil their military role as it is currently structured, many prefer to leave' (1996: ES33).

Burton's finding was confirmed through interviews with women pilots in the ADF from all three Services. A number of younger women also spoke about wanting to leave the ADF before the point of having children, primarily due to concerns about the impact their pregnancy would have on their workplaces and their acceptance by peers.

> *When I decided to have children, it was the hardest, hardest point in my life because I thought all my peers are going to keep going and I now had to put the brakes on…like, I was not fitting in … how dare I not be able to fly anymore when I know there is so much work. And that was the biggest hurdle I had to get over and I was scared and I've told this to all the girls who I mentor.*[13] ***(Renee, ADF pilot)***
>
> *I think that it's maybe – well, on my part, it's because I don't want to let them down. It's – I'd love to stay [in the ADF]... because I love my job. I love it.* ***(Anne, ADF pilot)***
>
> *But unfortunately, it [my pregnancy] was a bit of a shock to my new CO down here who lost his pilot straight away.* ***Was he all right about it?*** *Oh, he was fine. I felt a bit bad though.* ***(Isobelle, ADF pilot).***

If women were able to be replaced during periods of pregnancy and maternity leave, their sense of guilt would not be as prevalent. This is a case of a policy having a direct negative effect on workplace culture in relation to women pilots' pregnancies. Interviewees' reflections indicate that, when making career decisions, they certainly considered these cultural manifestations. Most would prefer to leave the ADF rather than 'let their colleagues down' or feel like a 'burden' to their units, ships or

[13] Renee's quote also references the earlier issue of the career implications of having a baby.

squadrons.

Although women's fears about failing their teams might be self-induced, interviewees' experiences suggest that, in some cases, their concerns were exacerbated by the very negative reactions of some of their peers and, sometimes, supervisors. In their study of co-workers' responses to pregnant employees, Halpert and Burg (1997) found that women experienced a wide range of reactions, some of which were quite negative. Within ADF workplaces, interviewees felt that their not being replaced during periods of maternity leave definitely intensified any negative perceptions. While most pilots' peers appeared supportive and positive, there were some notable exceptions.

> *My posting was there because, once I got pregnant, I was – their perception was "She's dead to us. We've given her all this training, spent all these thousands of dollars", and I know that that's what some of them would think … so I moved jobs.* ***(Kelly, ADF pilot)***

> *And [there was a sense of] "My wife didn't get paid when she had her babies, so why should you?" sort of thing.* ***(Nelly, ADF pilot)***

> *There's, you know, individuals have been awful about it. There's individuals who think you having your six months' maternity leave is like you're on a holiday and therefore you should not be able to come back into your job, and it's not fair that you get paid to have six months off.* ***(Emma, ADF pilot)***

Reactions to pregnancy from supervisors and Commanding Officers varied quite substantially across different operational contexts and the three different Services. Some interviewees spoke of their supervisors being predominantly supportive of their pregnancies and return-to-work options.

> *And he was great. He's like, "I'm not going to take you off your squadron. I'm not going to give you extra duties. You look after yourself and we're here to*

> *support you". Bent over backwards, yep. Like, I owe them [laughs] for looking after me so much. They've been fantastic. And the CO here's the same.* ***(Anne, ADF pilot)***

> *But I do think that [the level of peer acceptance regarding her pregnancy] was very much to do with the bosses that I had at the time who were very good. So, that experience for me was a really positive one and I was able to come back and work and still do my job and I was not judged by anyone because I was actually capable of doing it – I mean, I was in the sim [flight simulator] until I was eight months' pregnant, until the harness couldn't fit around me anymore. So, and the guys just didn't think twice about it.* ***(Tara, former Air Force pilot)***

I admit that I found the level of support towards some women pilots quite refreshing. My own experiences of pregnancy announcements in the Air Force were less than encouraging, with one supervisor literally putting his head in his hands and moaning, 'Oh no, how can you do this to me!'. Such reactions can be directly attributed to the policy which prevents personnel from being replaced, as supervisors know they must carry the vacancy for up to twelve months or longer.

Disappointingly, a number of Air Force pilots (former and current) did convey anecdotes of adverse supervisor responses that were similar to my own. They cited a range of unpleasant reactions from supervisors, including eye-rolling, sighing, discussing the negative impact on capability, threatening to have them posted away and generally being extremely unsupportive towards their pregnancy. I found the following quote, which was conveyed by a pilot who was pregnant at the time of our interview, to be very disturbing.

> *The [supervisor], though he said he was happy and supportive, I think saw it as a massive capability hit. And because of that, he permeates little comments around... You know, just sort of snide remarks. And I actually snapped at him the other day because he said, "Oh well, you're diseased" and it was in front of*

> *a lot of people. And I'm like, "Yeah, it's not a disease and you can't call it that ever again". And I didn't laugh afterwards.* ***(Harriet, Air Force pilot)***

These negative reactions were not only directed at women who *were* actually pregnant; a number of ADF interviewees spoke of inappropriate comments about pregnancy before they had even considered starting a family! Numerous interviewees from all three Services also spoke of missing out on training and deployment opportunities, sought-after postings and aircraft conversions due to having a baby or concerns that they might have a baby during their posting tenure. Burton reported this issue in the late 1990s, finding evidence of 'direct discrimination on the basis of women's pregnancy or potential pregnancy' (1996: viii).

> *And he said, "Please don't take offence at this but I need to get people in there that are going to stay a certain period of time… are you thinking about having kids anytime soon?" And, like, my husband said to me, "He can't ask you that".* ***(Jess, former Air Force pilot)***

> *[the career manager] said "You're newly married and you're at that age, female clock, so you're going to be having babies so we've got you into a numpty [low value] ground job"… like I find that offensive ...I mean she could have said that if she'd asked me do I want to start a family and if I'd said yes then she could have said that.* ***(Leanne, Air Force pilot)***

> *[my boss] refused to post me to an operations position, which is what I wanted to go to, because they couldn't afford to lose you on maternity leave halfway through. And so I was, like, furious because I didn't get pregnant … I would have been in that job for a whole year.* ***(Nelly, ADF pilot)***

> *I had done a lot of good jobs, awards, commendations, so I knew I was competitive. And he said, "Look it's not going to hold you in good stead that you've had six months off with your baby and that will go against you and you*

> *won't be able to compete as well as the other guys".* ***(name removed, Army pilot)***

Pilots also relayed stories about supervisors automatically assuming that they 'wouldn't want' a particular deployment or posting because they had a child. Williams (2000) references a tendency for employers to assume that pregnancy and motherhood will 'soften' women and thus render them unsuitable for certain types of positions. Two interviewees noted this propensity from supervisors after having a child.

Padavic and Reskin observe that 'the practice of treating individuals on the basis of beliefs about the group to which they belong is called statistical discrimination' (2002:50), citing this as a barrier to women's success in the workplace. Data from this study demonstrates that members of the ADF may be breaching Australian anti-discrimination laws by not selecting women for opportunities purely on the basis of their having or potentially having a baby. While interviewees were aware that this behaviour is illegal, they were at a loss as to how to redress it.

Unfortunately, the challenges faced by women pilots in the ADF do not dissipate after childbirth; indeed, the post-maternity period introduces another array of issues that can impact on their retention and progression within ADF flying. In recent years, the work-family conundrum that women face has become the subject of considerable academic interest (Greenhaus & Beutell, 1985; Gutek et al., 1991; Reynolds, 2005), with research suggesting that most women with children will, at some stage in their careers, experience additional stress borne from trying to balance home and work (Vinokur et al., 1999; Maume et al., 2010).

While parenting and working may be challenging for all families, perhaps ADF members face additional issues due to the nature of military service. Vinokur et al. reinforce this by stating that 'nowhere is the potential for a conflict between the demands of family and work greater than in the lives of women who serve in the

armed forces' (1999:866). Short-notice postings may mean that children will not have childcare places in the new locality while, due to high demand and their relative remoteness, some geographical areas have very limited numbers of childcare places irrespective of the amount of posting notice provided. The majority of military women are partnered with other military personnel (Goyne, 2008), which means that, at any one time, one member of the relationship might be serving on an overseas deployment or posted away from the family unit. Further, as ADF members have little choice regarding posting location, they will rarely experience the benefits of support from other family members.

Even where support mechanisms are available, they are seldom geared to the realities of military life. The high demands and unpredictability of military service make parenting exceptionally difficult for some personnel (AHRC, 2012; Burton, 1996). Many ADF members are on-call twenty-four hours a day whereas standard childcare models operate for only a standard working day. McConachie observes that 'it is not easy, when your normal support systems are absent because the military has moved you 2000 miles from home, to find overnight childcare with which you can be comfortable' (2000:259).

Flying adds to the difficulties faced by all personnel, as aircrew work long and irregular working hours that don't fit neatly into standard day-care operating hours. Planning is also difficult when personnel have minimal notice to respond to a humanitarian crisis, emergency (such as bushfires or floods) or conflict situation. Aircraft reliability and the unexpected extension of flying sorties also has ramifications, especially in relation to the care of children.

Accordingly, ADF pilots (like other air crew) face challenges inherent in *both* military service more broadly and flying in the military. This naturally 'ups the ante' for them in managing their families whilst also fulfilling their roles as operational pilots. One pilot provided an anecdote which I think really captures the struggles faced by many ADF women who have children.

> *I remember there was … a really important project … and [my child] had just been discharged from hospital, he had pneumonia... so I had that day off, stayed with [child], got him out of hospital, and then got my sister-in-law to look after him because on Sunday I had to fly the [aircraft] with some parts that they desperately needed on the Sunday. This was all while my husband's in, off in [an overseas deployed location]. It's always the way… as soon as the husband is going [laughs], the kids get sick. Yeah, it was a bit of a juggle.* ***(name removed, Air Force pilot)***

Other pilots spoke of similar difficulties and heightened levels of stress associated with negotiating flying and family.

> *It's definitely a compromise [laughs]. In some aspects it's working well, in some aspects it's really not [laughs]. You've caught me on a bad day today; actually I got told by the dentist that apparently I'm clenching my teeth with stress and I've actually managed to crack one [laughter] so it's, I don't think, I don't know.* ***(Xanthe, Air Force pilot)***

As noted by Xanthe, the requirement for one or both military pilot partners to deploy, sometimes for up to nine months, places considerable stress on ADF families. While all families are likely to find deployments emotionally and physically taxing, the nature of flying adds further complications, especially when the 'pilot at home' is required to fly routine sorties and tasks that fall outside standard childcare hours. Through her research into career impediments to ADF women's retention and progression, Goyne (2008) also observes that, due to family issues, women are less willing to undertake lengthy overseas deployments or sea service than men.

According to some interviewees, the requirement to frequently deploy as a pilot was considered a deterrent when contemplating having children. For those families with

children, deployments added to their ongoing stress levels and, in some cases, led directly to their desire to leave the ADF.

> *I couldn't, I could never, I don't think I could ever deploy while having a family at home, I just, whereas, I don't know what it is, maybe I'm old school, but I don't see an issue with a father deploying. I don't know what it is.* ***(name removed, Army pilot)***
>
> *But on the side, I was reconciling that, yeah. But we've been deployed away at the same time with our grandparents looking after the kids. And it's not nice.* ***(Renee, senior ADF pilot)***
>
> ***Okay, so what's made you decide to pull the pin (leave the Air Force)?*** *Yeah, it's a lot of things but probably the most overwhelming thing was I felt it was just time to move on... I was going to have to deploy at least two to three times over the next few years so that was obviously a big factor. I think I probably wouldn't mind it once but that would probably be it. That, sort of, would be enough away from my family and time to move on.* ***(Sue, former Air Force pilot)***

The high operational tempo currently being experienced by the ADF and the requirement for frequent deployments are known factors which impact on the retention of ADF members, both men and women, across all three Services[14] (AHRC, 2012). However, as stated by interviewees in this study, as the primary care-givers in many families, women felt less inclined to deploy away from their families after having children. While many ADF families share the parenting load equally and 'take turns' undertaking deployments, some interviewees felt more comfortable with their partners deploying than themselves. The ADF needs to ameliorate the problem of

[14] Based on the findings of the 2013 Defence Attitude Survey 'Your Say' which ascertains a member's propensity towards leaving the ADF

constant and lengthy deployments if it wishes to retain higher numbers of women as pilots and in other occupational groups in the future.

While the combination of parenting and military life has its challenges, so too does the occupation of pilot within the civilian aviation context. In her article 'Where are the Women pilots?', Stephenson observes that 'it is easier to be a professional woman pilot if single or married with no children' (2005:37), noting that the lack of childcare, in terms of both cost and availability, may be disproportionately detrimental to women in that occupation. Commercial pilots in this study also expounded on the difficulties associated with balancing flying and motherhood, especially when children were very young and required higher levels of care. Although single parents from all aviation streams found flying and mothering particularly problematic, I admired the determination of some interviewees to achieve their flying goals whilst also raising children without a partner.

Commercial pilots engage a variety of tactics to manage their situations, such as hiring on-call or live-in nannies, seeking support from parents/relative/friends, working part-time and/or splitting rosters with their partners. However, the options for ADF pilots are more limited, especially in accessing local family support and splitting rosters. Complications borne from managing mothering and military flying were cited as substantial challenges for ADF women pilots in this study. The posting cycle and requirement to move locations without family/community support were irrefutably factors prompting some interviewees to resign after having children.

> *But see they (commercial pilots) have schedules, they can probably, the husband can, "Okay well, I know I'm flying this week and you're flying next week", where with the Air Force's transport world, that's just not going to happen.* ***(Lisa, Air Force pilot)***

> *So that was probably the biggest point and, although they could offer me the possibility of the next five to ten years being pretty stable, they couldn't go*

> *beyond that and that, to me, was what made the final decision. It wasn't money, it wasn't the flying, it was just location or stability for me in the end.* ***(Sandy, former Air Force pilot)***

> *I never wanted to leave the Air Force. That was never my intention. I was never unhappy with my – I just was, it was going in the wrong direction for me from a family perspective … the main thing for me was, I didn't want to move around with my kids for the next twenty years. I'd had enough of that.* ***(Tara, former Air Force pilot)***

There were ADF women pilots, primarily in Army aviation, who had managed to balance career and family. The interviewee data indicates that those who achieved this most successfully were those who had/have partners prepared to 'take a career hit'[15] or make sacrifices to support their wife's flying career. A number of interviewees spoke about having very supportive partners who sought to become 'hands-on' parents. This sometimes involved a father leaving his own ADF flying career in pursuit of employment with more regular working hours and conditions.

> *… but he's pretty keen to be a bit hands on. So he's, and he's more than happy and he said to me, "He's happy for me to have the career and for him to just, he'd be happy to work at home or do whatever he has to do.* ***(Ellie, ADF pilot)***

> *Yes. And this is something, we need to get out of sync. At the moment, we're both - we both do a ground job, both do flying, both do a ground job. And where we're at now is I'll probably have to take a bit of a hit and do another ground job, so I'll plan to do two in a row...he [husband, name removed] wants me to keep working and he wants to stay at home with the children.* ***(Leanne, Air Force pilot)***

[15] A common phrase used by interviewees which means to make decisions that are detrimental to a member's career

> *I've got … children… yeah, it hasn't been easy... last year he left his job because we weren't making it with him working and me doing this. It was too much. It was too hard on the kids, they were doing like long hours in childcare. It was awful… at the drop of a hat I've got to work on a weekend or I've got to go away or, you know, and I'm on call 24/7 and he knew that this was really important to me and this was my goal and I kind of promised him that, after this, we could see what he wants to do. Yeah, compromise.* ***(Nelly, ADF pilot)***

While interviewees were grateful for having supportive partners, that men had to make difficult choices regarding their own careers further demonstrates the complexities of juggling piloting with parenting in the ADF. Data from this study demonstrates that the men in some families aren't always willing to make career-sacrifices which interviewees felt 'forced their hand' in having to prioritise parenting over their own flying careers.

> *[my husband is] taking four months' leave without pay … but I don't think he would want to do that forever… I don't think he'd be actually satisfied not to do that again. So I reckon if I asked him he'd do it but he wouldn't be happy.* ***(name removed, Air Force pilot)***

> *… It's really quite funny at work. I mean I don't complain much but, if I ever whinge about having kids, there's lots of guys that have kids too that think they know what I'm going through. So I ask what their wives do and most of them tend to stay home just because of the demands on the husband, it's like I need a wife as well, it usually shuts them up [laughs].* ***(Xanthe, Air Force pilot)***

> *… he's trying to make some career moves for himself and he's a fantastic father but, at the end of the day, when the (children) are about ten or twelve, someone needs to be here all the time. And if he's not in a position to do that, then it's going to have to be me.* ***(Sandy, former Air Force pilot)***

Improved policies and better management of dual-pilot careers would mitigate many of the challenges outlined by interviewees in this study and allow *both* members to continue their flying careers in the ADF.

Unfortunately, the nature of Service life has, until now, provided few opportunities for pilot parents to access flexible employment and/or part-time working options. Although flexible work is known to be one means by which families can mitigate some of the challenges associated with working and parenting, genuinely flexible working arrangements are very rare within military aviation. Meyerson and Kolb contend that organisational structures and practices tend to be based on a series of 'deeply entrenched assumptions and values' held by those in power within organisations (2000:554). In highly gendered organisations, such as the military, organisational policies and 'norms' create working patterns designed to accommodate the stereotypical 'male' worker with minimal consideration given to workers who may fall outside that stereotype (Acker, 1990).

The organisational 'norms' for pilots have meant that accessing meaningful work after periods of pregnancy was, and still is, extremely difficult, particularly for pilots in the Air Force. In her study of the retention considerations of Air Force women in the United States (US), DiSilverio (2003) found that thirty-seven per cent of her research respondents would have stayed in the US Air Force if they had access to flexible job options.

Specifically within the ADF, there are some deeply 'entrenched structural and cultural impediments' to combining work and family commitments' (AHRC, 2012:32). Although Defence has some excellent policies in place for flexible work, very few personnel have realistic opportunities to access any form of flexible working arrangement. This is due to 'entrenched beliefs about the types of roles that are suitable for flexible work', 'a negative stigma' and 'workforce planning difficulties' (AHRC, 2012) which stem from the ADF's inflexible personnel management processes.

The struggle to source valuable and career-enhancing pilot work on a flexible basis has absolutely affected women's decisions regarding whether to remain in the military after, or just before, having children. Some interviewee's recounts entailed exasperation at being 'forced' back to work full-time before they felt ready.

> *Went back part-time … a menial job … which was really not enjoyable and actually I didn't really enjoy that period. The senior leadership at the time were very – there was a lot of pressure put on me as to when I was coming back full-time … and I hate that.* ***(Sue, former Air Force pilot)***

> *My boss is saying, "Come on… come in and fly, come in between breast feeding". [laughs] I'm like, I so can't do that [laughs]. I didn't have an easy baby either.* ***(name removed, Air Force pilot)***

> *[Air Force career managers] offered me this full-time job this year and I actually said, "No". They gave me the weekend to think about it, my husband and I talked about it, and we agreed that it was taking too much toll on me and him and the kids. So we went back to them and said, "Thanks but no" and then they said, "Well, it's in the military and we need you there and you start in January [laughs]".* ***(name removed, Air Force pilot)***

Betty, who was in the process of leaving the Air Force (for a commercial airline career) at the time of our interview, cited the Air Force's unwillingness to accommodate part-time work as a critical consideration when making this decision. Both she and Sue recalled the struggles they faced trying to negotiate meaningful part-time work and the insurmountable career disadvantages they (and other pilots) experienced after having children.

> *The seniors at the time were very – there was a lot of pressure put on me as to when I was coming back full-time and you know, give me a 10-year plan and that sort of thing and I hate that ... but I could have done this job part-time, I*

> *was forced. So that was another thing; I was forced to come back full-time this year.* ***(Betty, former Air Force pilot)***

> *Well she [another woman pilot] … was really helpful when I first got there and first got pregnant … then, when she went and had her baby, they wouldn't let her come back part-time so she just resigned. I went, oh my God, we just lost such a huge talent.* ***(Sue, former Air Force pilot)***

Even when access to part-time work is available, the longer-term consequences of women availing themselves of it cannot be ignored. Betty felt that her previous access to part-time work, in a different role, had a negative impact on her promotion and overall career progression; another issue influencing her decision to leave the Air Force:

> *It wears you down after a while. It's just like, far out, I just, it's time to go and so there's that side of it and little things like how you hold my – I believe my promotion has been affected by the fact that I was sort of put into different jobs throughout the whole part-time thing, there was no acknowledgement of my previous abilities, you know what I mean, to continue that?* ***(Betty, former Air Force pilot)***

Betty's experience alludes to the gendered nature of how 'work styles and activities are systematically valued and devalued' (Myerson & Kolb, 2000:554) in the Air Force. At the time of the interviews, the Air Force had not managed to develop any workable structures for air crew to access part-time work in operational flying contexts. While there are robust part-time policies in place in Defence, they are simply not compatible with air crews' working patterns, especially on certain aircraft platforms.

In contrast, the other Services appear far more accommodating regarding part-time work after personnel have children. Numerous Navy and Army interviewees discussed the options available for returning to work under more flexible arrangements.

> *I've been offered to go back 'cause work are very keen for me to get back but there, you know, the new boss who's just come in, he's just said, just don't make any commitments now, just let us know what you're thinking and we'll work round it.* ***He sounds good.*** *Yeah. Yeah, really good.* ***(Isobelle, ADF pilot)***
>
> *I took about six months off with my first child… my boss was excellent. He was having a child at the same time and I said, "Look, can I come back part-time?" He said, "Yep. You can do three days at work and two days at home."* ***(Renee, ADF pilot)***
>
> *And work has been fantastic. They said to me, "We'd like you to do the [deleted] job, however, obviously if you want to do something where you're not going to be away, we'll do that. But we're here to support you" … Oh, they're so good. They have been awesome.* ***(Anne, ADF pilot)***

The Army's flexibility and willingness to accommodate part-time or flexible work after periods of maternity leave had major implications for these women's decisions to remain in Army aviation after having children. Although the Navy's sample was too small to make similar judgements, the positive aviation culture in that Service suggests that Navy pilots are equally as likely to share similar flexibility and acceptance (unless they are posted on lengthy sea deployments).

When trying to explain why Air Force pilots have less access to flexible employment, it may simply be that the nature of Navy and Army flying and their less-structured pathways may more readily accommodate part-time work. An alternative explanation, supported by findings in relation to the Air Force's aviation culture, might be that there is simply no tolerance for nurturing women's careers and family life within its 'top gun' war-fighting culture.

Irrespective of the reasons behind the Air Force's inflexibility and unwillingness to accommodate part-time work, interviewees in this study felt very strongly that commercial flying might offer a better model for juggling the rigours of flying and motherhood. As observed in Chapter Four, ADF pilots, especially younger women, initially found the prospect of flying within the commercial airlines to be 'boring' and generally unpalatable. However, older interviewees with children began viewing commercial aviation as a more viable option, primarily because of the stability offered by the civilian pathway.

> *No, that's about it. Oh, actually, something that appeals to me about civvie flying is a bit more balance or a bit more choice with your family. I don't like the idea that I can go anywhere, within three years I could be in any other part of the country.* ***(Roberta, Air Force pilot)***

> *I would not because (commercial) flying doesn't interest me after what I've done in the Air Force with … like, it's just the most amazing flying you could possibly do in terms of just both challenging and also, yeah, just the amazing experience that I've had. So not for flying, but more and more now …lifestyle is an option.* ***(Pauline, Air Force pilot)***

The major airlines have also worked hard to accommodate the needs of pilots who wish to balance parenting and family life with their flying careers. For example, Qantas has introduced a 'carer's line' whereby pilots can work different percentages of a full-time load, from 50 up to 90 per cent. Virgin has a roster on/roster off (RO/RO) system in which pilots alternate flying on a month-on, month-off basis which works extremely well for dual piloting partners who can alternate between non-working months. Pilots with experience of both ADF and commercial aviation spoke warmly about the improved lifestyle offered by airline employment.

> ***Any regrets [about leaving the Air Force to work in civil aviation]?*** *I don't enjoy flying in the airline like I did in the military… but, to me, I'm a mum now*

and that job enables me to do what I do. ***(Tara, former Air Force pilot)***

It seems that airlines' efforts to accommodate women workers have paid tangible dividends, as evidenced by the number of Air Force pilots in this study who had left the ADF to join commercial airlines. As stated in the introduction, large numbers of men *and* women pilots leave the Air Force to pursue commercial flying careers. While, at face value, this issue may not be specifically related to gender, several women (past and present Air Force pilots) did refer to commercial aviation's improved career models as a primary consideration when making their decision to change aviation career paths.

When this research commenced, the Air Force, the major employer of ADF pilots, had not made any tangible efforts to accommodate the additional career challenges faced by women pilots and indeed, other women air crew. The data shows that there have been minimal organisational efforts to retain women pilots after they have had children; indeed, some who sought part-time flying work were actively encouraged to resign. Women like Xanthe had part-time work options denied and/or were not permitted to remain in locations where they had family or had established local community support.

The Air Force's unwillingness to accommodate the needs of working pilot mothers may at least partially explain why the airlines have twice its number of women pilots. Perhaps the Air Force and wider ADF simply haven't had the numbers of women pilots to make policy changes worthwhile, but this could be a 'chicken/egg' situation. Without changing the policies, the organisation is unlikely to build sufficient numbers of women pilots to capitalise on those changed policies. This presents yet another organisational 'Catch-22' which must be resolved if the ADF seeks the longer-term retention and progression of women pilots in the future.

Conclusions

The women pilots interviewed in this study *want* long-term ADF flying careers but the organisation is currently making it too difficult for them to stay. The Air Force's

inability to accommodate the needs of women to enable them to achieve a sustainable work-life balance, especially after having children, has had an enormous impact on women pilots' longer-term retention. Burton (1996) contends that ADF women would be far more inclined to adapt to the various challenges associated with managing family and a military career if they were assured of better long-term career prospects.

The research findings from this study support Burton's claims. If the ADF is genuinely committed to swelling its ranks with women pilots, it must take action to address structural and cultural barriers that impact disproportionately on women. 'Equal treatment' in the ADF is, at the time of this research, based on the 'values and norms of men', with 'denial of the different problems and needs of women' (Fraser, 1999:223). Retaining women pilots for long enough for them to reach the higher ranks is critical to the Air Force's stated goal of increasing the numbers of women within senior leadership positions. As such, mitigating the numerous barriers outlined in this chapter is fundamental to Defence's strategic intent to increase women's overall participation in the ADF.

CHAPTER EIGHT – FEMINIST OCCUPATIONAL INTERVENTION: A MODEL FOR BUILDING DIVERSITY IN OCCUPATIONAL GROUPS

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Introduction

The research outlined through previous chapters has determined that women pilots in the military must 'negotiate their gender' through a range of complicated work/life scenarios as they progress through various stages of their careers and everyday lives. The formal organisational barriers that once openly prevented women's access to ADF flying roles have been replaced by other, more insidious structural and cultural barriers and challenges that continue to impede their progress.

The critical interrogation of these ingrained and pervasive barriers, through this research, suggests that any substantial and enduring reform measures must entail a comprehensive, multi-faceted approach that targets the entire employment cycle from attraction to long-term retention. A goal from the outset of this research has been to develop effective means of mitigating the barriers revealed by the study. As such, in this chapter the research moves from 'out of the armchair' and into practical human resource development (HRD) interventions designed to 'bridge the gap between theory and practice' (Meyerson & Kolb 2000:553).

This chapter discusses the Air Force's response to the previously outlined research findings and the means by which this process led to the creation of a new framework for building diversity that I have called 'occupational feminism'. Occupational feminism is a research-based, practically orientated means of increasing women's representation within highly masculinised occupational groups. Occupational feminism, which is delivered through a model called 'Feminist Occupational Intervention' (FOI – see figure at 8.2) builds a methodological bridge between feminist-orientated research outcomes and the practical human resource-based policies, practices and corresponding organisational culture that impacts the working lives of women in non-traditional occupations.

The Air Force's response to the research; elements for success; preconditions and the reform interventions

Designing an intervention strategy – critical considerations

The previous research stages, as outlined in chapter four to seven, had allowed the Air Force to develop a deep understanding of the barriers and challenges faced by women working in the gendered occupation of military pilot; from both a supply-side and demand-side perspective. Due to the wide range of impediments identified throughout this thesis, for the reform project to succeed, it was necessary to address a range of elements to ready the organisation for change. These elements might be considered 'preconditions for success' in that they were absolutely critical to successful reform.

The first of these and perhaps the most fundamental, was garnering a commitment to change from the organisation's leaders; a well-known precondition for successful cultural reform in large organisations (for example, organisational change studies by Nadler & Tushman, 1989; Trice & Beyer, 1991; Armenakis et al., 1993; Dass & Parker, 1999). Large-scale organisational reform 'requires active and visible leadership to help articulate the change and to capture and mobilize the hearts and minds of people in the organisation (Nadler & Tushman, 1989:200).

The research outcomes themselves were extremely important to garnering leadership commitment to change; noting Nadler and Tushman's observation that a strong desire to change can 'be created by presenting information that shatters widespread assumptions about the current situation' (1989:199). The research findings actively challenged many 'widespread assumptions about the current situation' (Nadler & Tushman, 1989:199); in this case, that that the workplace experiences of women pilots were not at all impacted by their gender or that the experiences recounted in this thesis even existed in 'today's' Air Force.

The research also provided an opportunity for the problem of women's under-representation in flying to be examined from an academic perspective, outside the

organisation itself; which lent weight and gravity to the argument for change. Academically-sound research that captured the 'real' workplace experiences of women working in such a highly masculinised field, in their own voices, was fundamental to generating an organisational commitment to change; a lesson that should be heeded by other organisations seeking a similar diversity and cultural reform.

The senior leaders within the Air Force, most notably the Chief of Air Force (CAF) and the Director General of Air Force Personnel (DGPERS-AF) were exposed to the research findings through different means; including being provided a synopsis of some compelling early research findings and face-to-face meetings with some of the women pilots interviewed through this study. The face-to-face meeting between CAF and women pilots was arranged by Australia's Sex Discrimination Commissioner as part of her 2012 review, as a powerful means of engaging the 'hearts and minds' of senior military leaders. Through these different exposures, both leaders experienced what Nadler and Tushman (1989) refer to as 'intellectual pain', which promotes the desire for leaders to generate change in their organisations.

Senior leadership's 'intellectual pain' was arguably based on a number of factors: their overarching responsibility to ensure the welfare of all personnel in the Air Force; the compelling capability argument in support of greater diversity; but perhaps most significantly, their very human reaction to learning of the suffering experienced by some of the Air Force's finest young women. I believe that it was this personalisation of the issues that lead to their acceptance that these were real issues that warranted urgent attention.

The impact of both senior leader's support and commitment cannot be understated; CAF and DGPERS-AF each drove change from the 'top down' at the same time that our reform team was generating change from the 'bottom up'. While CAF provided strategic support and direction, DGPERS-AF, in his role as the Director General of the Air Force's personnel agency, took ownership of the reform

program itself. From a practical sense, their commitment meant that much-needed resources (primarily personnel and money) became available to enact the reform. From a cultural perspective, the active support of two of the Air Force's most influential leaders helped our team to push through some of the more controversial aspects of reform against some fairly strong cultural obstacles. It is difficult to argue against reforms that have the personal endorsement of the organisation's most senior leader.

Another precondition for successful reform is the ability for senior leaders and/or those driving the change to engender momentum and commitment across the wider organisation. In a large organisation, it is not enough that one or two leaders or change agents have a vision for change; that vision must also be engendered across the wider organisation. While there are a range of available techniques that might be used to communicate a case for change, in the case of this project, we drew on a change-generating methodology called 'creative tension' (Senge, 2006) that had shown some success during my earlier career an educator.

Creative tension is a technique that, if used correctly, invokes personnel's commitment to change by juxtaposing 'a clear picture of current reality' with a clear vision of 'what we want' (Senge, 2006:132). The theory is that the discord between reality and the vision creates the 'creative tension' necessary to drive worker's commitment to delivering cultural change within organisations.

In this case, creative tension was created through a narrative entitled 'A Tale of Two Pilots'; which featured two starkly different accounts of two women pilots in the Air Force; one highly positive and the other far more disturbing. The first account was fictional, where the second account focused on a series of negative experiences as shared through our interviews, including being rejected by her peers on course, sexual harassment and an inability to remain in the Air Force after having a baby. The CAF read the narrative of two pilots at a Senior Leadership team (SLT) meeting, verbatim, and concluded with these words:

> *One of the pilots I have just described is fictional. If you had asked me eight weeks ago which pilot's story was real, I would have said the first one – because there is no way that any member of my Air Force could have possibly had the experiences Rebecca has had.*
>
> *Sadly – recent events have helped me understand who the work of fiction is in this story – and I now know that Rebecca's experiences are a very real reflection of some of the significant challenges faced by a number of women working in non –traditional fields in the Air Force…*
>
> *I have called this a 'bi-polar' Air Force and what I mean by this term is that there are two very different sides of this organisation that is such an enormous part of all of our lives. (extracted from 'A Tale of Two Pilots')*

He then went on to discuss his vision of what Air Force culture should look like and how he was going to achieve that vision. It was this meeting that heralded the first of a series of actions by the CAF and his SLT towards the widespread cultural reform that followed.

Beyond the strategic leadership commitment, translating the desire for change into tangible action also required resources in term of both funding to enact change and personnel to implement the reform agenda. In the Air Force, this entailed establishing a team of sufficiently motivated and empowered change agents within Personnel Branch to build momentum at the more tactical levels of the organisation. Establishing a dedicated team, the Directorate of Workforce Diversity, that had ownership of and accountability for the change was another precondition for the project's success. While various personnel within the personnel branch assumed responsibility for different aspects of the cultural reform agenda, having a dedicated team to progress and monitor project outcomes ensured that the focus

and intent remained true to CAF and DGPERS-AF's long-term vision for the Air Force.

A dedicated diversity capability, beyond being a precondition, also ensured that the initial impetus behind this project was translated into an enduring and sustainable organisational structure. Having a dedicated team accept 'ownership' of diversity was a key feature that differentiated the Air Force's current approach from other models for increasing women's representation and from the Air Force's previous attempts to build diversity. Formally assigning diversity outcomes to an enduring team meant that the momentum generated through the earlier stages of our work continued through my departure, other staff transfers, competing organisational priorities and recent financial constraints. It also afforded the latitude for longer-term interventions, such as policy amendments and structural changes, to endure and mature beyond the initial impetus.

Today, almost eighteen months after my own departure from the team in 2012, the Diversity Directorate continues to deliver the outstanding diversity outcomes which commenced in 2010, to the betterment of the Air Force. Having a team with a primary focus on building diversity also ensured that there was a tangible level of ownership and accountability in terms of project delivery. This accountability and focus may not have been as evident if responsibility for reform initiatives were dispersed across the organisation as a non-primary task. Building a dedicated diversity capability within organisations seeking enduring change is both a necessary precondition for successful reform and a valuable lesson-learned from the Air Force's experiences.

While the initial momentum for change was generated from our team within personnel branch, establishing credible advocates from the group most impacted by pilot-specific reforms was also necessary to achieving many of our project outcomes. Participation by members of the group most impacted by change is a proven means of managing resistance to reform activity within organisations

(Kotter & Schlesinger, 2008). The classic study by Coch and French (1948) was one of the first theoretically sound studies to demonstrate the criticality of members within the organisation actively participating in change processes; an assertion confirmed by our experiences with reforming the policies and processes associated with women pilots' employment in the Air Force.

We anticipated, based on the research findings, that women pilots may be initially quite resistant to the reform initiatives, due to a well-founded fear that 'any difficulties they have managed to overcome could lead to counter-charges that they received special privileges and thereby devalue their achievements' (Powell et al., 2006:692). As observed in Chapter Six, women pilots were already subjected to unfair and untrue accusations of 'special treatment'; we were very well-aware that any targeted initiatives would be likely to provoke a further backlash. We also suspected women pilots, who were already battle-scarred due to the challenges already experienced through their careers, would have been highly distrustful of any gender-diversity initiatives 'thrust upon them' by non-pilot outsiders, however well-intentioned and well-researched.

Having a 'champion for change' (Ginsberg & Abrahamson, 1991) from within the pilot group seemed absolutely pivotal to building the trust of the women pilot population and creating momentum for the initiatives discussed through this chapter. To this end, at an early stage of the project, we appointed the Air Force's most senior woman pilot (who was still relatively junior) as the project leader for the pilot-specific elements of the diversity project. True to the principles of feminist research (Reinharz, 1992), I had connected with Squadron Leader Sam Freebairn through our interview and I knew her to be passionate about addressing some of the challenges she faced during her career.

Non-pilots simply would not have had the buy-in and access afforded to Sam. She was able to generate support for our work by engaging the majority of the woman-pilot's network, including Navy and Army pilots. The Air Force has learnt a valuable

lesson from Sam's involvement and is actively applying this 'lesson learned' to other diversity interventions targeting different members of the Australian community, including Indigenous Australians and members of the gay and lesbian community.

Another invaluable element of our reform strategy was identifying tangible measures for success. To this end, our team established and communicated numerical targets for both women pilots' recruitment and overall representation, based on the strong theoretically supported premise 'positive action and targets' are necessary to 'strategically transform organisational swamps' (Bagilhole, 2002:193). Setting numerical targets also aligns with the classical Liberal feminist belief in critical mass, which supposes that as numbers of women in non-traditional workplaces increase, gender-based barriers and challenges will be gradually eliminated as the workplace culture becomes more accepting of minority workers (Agostino, 2000; Whittock, 2000).

Critical mass theory assumes that additional numbers 'in male dominated organisations … create tolerance of difference, foster the inclusion of other women and overcome women's token status' (Powell et al., 2006:691). Kanter's (1977) perspectives, which have shaped much of the critical mass scholarship and debate over the past few decades, also suggests there are further benefits likely to result from increased representation by women, including: the ability for women to form alliances with other women (creating strength through unity); reduced visibility which enables women to be assessed on their individual talents rather than on generalisations associated with their gender; and importantly, a shift in the organisation culture to become more accepting and inclusive of women workers.

More recent studies have challenged the benefits of critical mass (for example Childs & Krook, 2006; Bratton, 2005). However, this examination of women pilots presents compelling evidence supporting critical mass theory for non-traditional occupational groups. While women only represent six per cent of commercial pilots in Australia (hardly a critical mass, but double the ratios in ADF flying roles), their

interview narratives demonstrate that their increased representation has resulted in more positive workplace experiences, especially in recent years as their numbers have grown. Younger commercial pilots spoke of feeling included, having well-developed women-pilot networks and role models.

They also shared accounts of their organisations implementing a wide range of policies to ensure work-life balance and longer-term retention. Comparing the experiences of commercial pilots versus their less-well represented ADF peers indicates that even small increases in women's representation can have a positive impact on the women working in that occupation.

With these findings in mind, the goal to build critical mass, supported by tangible numerical targets became a feature of the Air Force's intervention strategy. Our team's initial goal was to *double* the number of women pilots by the year 2015, which equates to an increase from around seventeen to thirty four within a very short space of time. This challenging numerical goal meant that the organisation had a duel impetus to simultaneously find innovative ways to both attract and retain women pilots, to achieve the target.

Designing and delivering the intervention strategy

As well as creating an environment for and commitment to change, the research findings were also critical to informing the development and delivery of innovative, evidence-based policies and programs to increase women pilots' representation. A feminist, research-based and gender-aware approach, where women's differing needs are placed at the centre of each reform activity, ensured that each intervention was developed and enacted with sensitivity.

Further, a comprehensive evidence-base detailing the barriers and challenges faced by women pilots, and interviewee's own insights as to how the problems might be fixed ensured that the reform strategy was well-informed and focused on the key issues, as they were experienced by women pilots. A feminist approach also

ensured that any policy and procedural 'fixes' are designed and applied with a deep understanding of how those fixes might impact women within the organisation.

The reform approach developed by our project team was individually supportive but holistic in its impact. The strategy for change encompassed mitigating supply (choice) and demand (power) barriers prevalent in pre-career and all subsequent career stages. From a supply-side perspective, the research findings enhanced our understanding of why so few women sought piloting careers and rejected the ADF flying pathway. This knowledge was used to develop and refine a number of innovative approaches designed to attract higher numbers of women to Air Force/ADF flying careers.

The first of these entailed building a more accessible image of the pilot occupation, noting that 'the question of image is central to recruitment' (Gale, 1994:12). Building a more accessible image and changing women and girl's views of flying as being 'difficult, dangerous and not a job for girls' required a multifaceted approach. Media and marketing was an invaluable feature of that approach and as such, Defence Force Recruiting (DFR) was tasked with dramatically increasing women pilots' representation on the ADF's Defence Jobs website (see www.defencejobs.gov.au).

The recruiting site now includes photographs and a series of filmed 'vignettes' by Air Force women in non-traditional roles. One pilot featured in one of the filmed vignettes is filmed at home, getting breakfast for her children whilst discussing balancing her flying career with motherhood[1]. This woman-focused marketing approach shows the degree to which women are now actively considered when developing career-marketing strategies, which is a definite change from the recent past.

[1] See profiles at http://www.defencejobs.gov.au/airforce/women-in-the-airforce/meet-todays-women/

To further reinforce the accessibility of flying roles to women, the major advertisement developed for marketing the Air Force in the past few years, the 'Anywhere, Anytime' campaign focuses equally on two pilots; a man and a woman, who walk through a series of scenarios on their way to their awaiting fighter aircraft (see figure 8.3 of Appendix 1). While the advertisement represents a very positive outcome from a marketing perspective, women pilots' willingness to participate in marketing campaigns is equally as positive.

A key outcome of this project has been helping both men and women pilots to appreciate the need for women pilots to 'step up' and become more visible role models for young women to aspire to. The pilots involved in the media and marketing campaigns do not seem to have incurred the ire of their peers; a sign of organisational maturity and a refreshing change from women's previous experiences.

This image rebranding was complemented by more practical initiatives that were also designed to change perceptions of flying as a 'man's job'. These were carefully designed to overcome the disempowering perceptions identified in the research project; that flying was an unattainable career for women. The need to build women and girls' self-efficacy in relation to flying mandated an approach based on building their practical exposure to aviation. Creating opportunities for practical 'hands-on' exposure is an approach that has been very successfully employed by other practitioners seeking to improve women's interest and success in non-traditional occupations (for example, Rosser, 2001; Yilmaz, 2010).

With this in mind, and targeting senior high school girls, we conceptualised the 'Flight Camp' (originally called 'Jet Camp'); a week-long residential 'hands on' program designed to increase girls' interest in flying. The original camp/experiential concept was conceptualised on the basis of the success of similar initiatives to attract women into other non-traditional fields such as engineering (Gilbride et al.,

1999; Outlay et al., 2012). Camp attendees are screened for suitability to ADF flying roles; which minimises the risk of building an unattainable dream for camp attendees.

The camps commenced in 2013, and have already generated much positive publicity and interest from around Australia. The camps have been overwhelmingly successful in increasing attendee's interest in pursuing flying careers. In the post-camp evaluations, over ninety per cent of camp attendees expressed an interest in joining the ADF as a pilot, with one 2013 attendee having already enlisted. The success of similar experiential programs for engineering and other non-traditional fields indicates that positive longer-term outcomes are highly likely. Figure 8.4 at Appendix 1 is a photograph from a recent camp.

To gain initial momentum and get some early 'runs on the board', it seemed sensible to orientate recruitment towards a group for whom some of the initial barriers had already been removed. As such, the most obvious group of potential ADF pilots were women and girls already intent on becoming pilots, but who had rejected the military pathway for the reasons outlined in Chapter Four. While this approach seems specific to recruiting to a military context, for other organisations seeking to build greater diversity in specific occupations, this may mean targeting women who have already opted to pursue another non-traditional occupation or for whom other types of barriers have also been removed. One example of this might be targeting volunteer fight-fighters when seeking to increase women's representation in paid fire-fighting roles.

Accordingly, the Air Force sought to incentivise women already intent on pursing a flying career to at very least consider the Air Force as a viable career option. One scheme designed by our team to attract women already intent on civilian flying careers is the Graduate Pilot Scheme (GPS), which was approved in 2011 and finally implemented in 2013. The scheme offers a pathway into the Air Force for students or recent graduates of Griffith University's Bachelor of Aviation degree, and entails

repaying their student debt (up to $120,000) on successful completion of Air Force flying training.

The GPS was conceptualised on the basis of the research findings, in conjunction with the outcomes of a 'Pilot Technical Data Report' compiled by the Directorate of Occupational Psychology and Health Analysis (DOPHA) (2011). The DOPHA report, which was based on an analysis of data from 2,648 pilot applicants from 1996 – 2011, showed that slightly older women with previous flying experience were more likely to succeed through ADF pilot training than high school graduates with minimal flying experience (which is the opposite case for men). As GPS candidates have flying experience, are more mature and already adept at operating in male-dominated domains, they appear to be ideal candidates for the Air Force.

To entice higher numbers of women to the scheme, and mitigate another known barrier to women's entry (the lengthy contracted period) the contractual obligation has been reduced to only six years (on a trial basis). The scheme has been extremely successful in garnering the attention of young women pilots; at the time of finalising this thesis (August 2014), DFR had twelve GPS applicants in the recruiting pipeline, with one woman having already joined via the scheme[2]. The woman who had already been recruited via the GPS scored extremely high marks in pilot aptitude testing[3]; an early sign that the GPS is attracting high-calibre pilot candidates who once previously rejected pursuing a military flying career pathway.

To improve women's success through entry and training, it is necessary to recognise, as this study has shown, that the potential barriers are not simply objective but can relate to more subjective conscious or unconscious biases of those involved in both selection and training. This recognition is based on an understanding that within highly gendered organisations and occupations, processes for entry and selection are often predicated on historical models built to

[2] GPS pipeline data provided via email by DFR, 8 August 2014

[3] According to staff from the Directorate of Personnel – Air Force

accommodate all-male recruiting populations. This research also determined the existence of a number of policies and processes that negatively impacted women's opportunity to access a military flying career. Removing or minimising these barriers was fundamental to the project's objectives.

To remove possible gender biases through commercial pilot recruitment and selection, Davey and Davidson (2000) suggested that an airline in the United Kingdom replace gender-biased tests with tests proven to be gender-neutral. They also suggested a range of targeted interventions to ensure selection staff became aware of their own prejudices and stereotypes when selecting pilot candidates (Davey & Davidson, 2000). These interventions doubled the number of women pilots in the airline within a six year period; a highly successful outcome by any measure. The Air Force looked to these outcomes when considering ways to improve women's success through ADF pilot selection and training pathways.

To further investigate the possibility of a gender-bias impacting the outcomes of aviation aptitude testing, DGPERS-AF tasked an aviation psychologist with examining the battery of pilot aptitude tests to identify any aspects that may be disadvantaging women. She found that, because of the very low numbers of women progressing through the testing processes generally, there simply wasn't sufficient numerical data to ascertain if there were (or weren't) any gender-biases in testing. She did note, however, that the tests were designed on the basis of all-male pilot populations and therefore may not accurately or reliably assess the aptitudes of women candidates.

As an outcome, Pilot Selection Agency (PSA) staff now consider a wider range of factors when assessing an applicant's potential to pass flying training. While aptitude testing is still considered extremely important, other factors such as flight screening results and an applied flying talent are given consideration, in conjunction with the aptitude testing scores. PSA staff no longer prevent a student from progressing to the next stage of assessment, purely on the basis of one or two

aptitude testing points; they consider the 'whole' candidate when making assessments. This change will hopefully enable higher numbers of men and women to progress to flight screening, where the more practical and accurate assessments of their applied flying skills occur.

Selection panel processes were another area of focus, as a means of increasing women's successful entry into ADF flying roles. In highly masculinised organisations, selection processes, similar to testing regimes, may also disadvantage non-traditional candidates (Bagilhole, 2002; Hansen & Oster, 1997); a premise which is supported by this study. One of the major barriers to women pilots progressing through selection processes to become a pilot was the prevalence of homosocial reproduction (Kanter, 1977a) or the lack of 'social similarity' to those making the selections (Rivera, 2013).

To reduce the incidence of homosocial reproduction and possible gender biases through selection, the Air Force plans to introduce 'unconscious bias' training for all staff involved in selection and training processes across the organisation. Unconscious bias training may also mitigate some of the barriers experienced by men who may not fit the stereotypical mould expected by selection panels for a range of different Air Force occupations, including pilot.

In the interim, there have been some very positive changes at the Pilot Selection Agency, with greater attention being afforded to looking at assessment areas such as confidence and motivation. Recruiting staff and PSA selection panel staff have been advised to focus on the qualities and attributes demonstrated by individual candidates and actively consider how these might differ due to gender-influenced factors such as socialisation, life experience and upbringing. The selection panels have also broadened their scope and criteria when assessing pilot candidates, to ensure they consider a wider range of factors when assessing a student's likelihood of succeeding through ADF pilot training.

The research focused on women pilots has also contributed to the development of other innovative recruiting and training approaches within the Air Force. This demonstrates the degree to which targeted research on a specific occupational group can lead to innovation in other parts of the organisation. The Aviation Academy concept, developed by another team within DGPERS-AF in 2012, has redesigned the entire entry pathway for pilots and other aircrew roles. The model entails all personnel with an aircrew aptitude, irrespective of their occupational preference, progressing through the same initial aviation/aircrew curricula, before being streamed into specific occupations on the basis of their abilities and aptitudes and career aspirations.

While the revised entry pathway was designed to increase the likelihood of graduating pilots suitable to fly fast jets, the argument in support of the model was strengthened by the outcomes of the research focused on entry barriers for women pilots. The Aviation Academy model may result in women intent on a career in more highly feminised aircrew roles such as air traffic control or air defence inadvertently discovering a latent aptitude for piloting; as was the experience of many Army pilots in this study. The Aviation Academy model may identify those women with an aptitude for flying who may never have considered a pilot career, because it was 'too difficult' and 'not a job for girls'.

To provide further support and create tangible role models for young women entering pilot selection and training processes, there have also been efforts to ensure women pilots are on staff at the Pilot Selection Agency and both flying training schools. This goal is made difficult, however, by the very low numbers of women pilots generally. Noting the difficulty finding suitable women instructional and testing staff, there have been other efforts made to improve instructor understanding of the challenges likely to be faced by women undertaking flying training.

The current Commanding Officers of both flying schools are absolutely committed to ensuring that all staff and students have an appreciation of the challenges faced by women students (and students from non-typical backgrounds) and what must be done to improve their learning and social experiences while learning to fly. As part of this mandate, they have sought to remove, suspend or retrain any staff and/or students who fail to personify Navy, Army and Air Force values, especially in their treatment of and demonstrated respect for others.

In 2011, the Chief of the Air Force also engaged an expert in the field of human factors in aviation to commence the process of better understanding curriculum-based and social barriers through ADF flying training, with a view to finding ways to mitigate or remove any identified hurdles. To assist, the current Commanding Officer at BFTS and his senior staff conducted an analysis of various 'choke points'[4] for student pilots, such that adequate resources can be dedicated to improving student outcomes through the different training stages.

Researchers such as Karp (2000, 2004), Turney et al. (2002) and Sitler (2004) have undertaken extensive research that demonstrates the criticality of ensuring student pilot and instructor compatibility, noting that this may be particularly important for women students. To improve the learning outcomes for women students, there have been recent efforts within both flying schools to better match student's learner style preferences with instructor style, especially for students requiring remedial support or additional training. The Commanding Officers of both schools actively encourage students to speak up if they feel that their learning needs are not being met, such that any issues can be rectified. These recent efforts are likely to improve the training outcomes for all students and as such, improve the ADF's return on investment into their recruitment and training.

While more acutely felt during training, women pilots at all career stages, past, present and future, spoke at length about the lack of woman pilot peer support,

[4] Curriculum stages where students are more likely to struggle or fail

role models and opportunities to create friendships. In addition to curriculum-based challenges, this research determined that one of the key factors impacting women's success on pilots' course was the loneliness and isolation they experienced as the 'only girl' or one of few women on course. Interviewees who had undertaken their training with other women or were posted into areas with at least a few other woman pilots, certainly felt less visible, alone and unsupported. Heightened visibility was found to be a key issue for women in all ADF aviation contexts, noting that this is a common finding in research addressing women working in non-traditional fields (Whittock, 2000, 2002; Zimmer, 1988; Bagilhole, 2002).

To address these issues of isolation and build more support for women working as such a small minority within a highly masculinised context, our team developed an approach that comprised three primary elements; establishing group identity and networks, building shared knowledge and providing crisis support. Networks and a group identity 'help workers gain skills, acquire legitimacy, and climb promotional ladders' (Elliott & Smith, 2004:368). In male-dominated occupations and organisations, women may be excluded from the networks and informal interactions so necessary for success (Brass, 1985; Ibarra, 1993; Ibarra et al., 2013).

Research into the role of women's networks in masculine organisations strongly supports interventions that afford women opportunities to interact and bond with like-minded women; to build shared knowledge, develop workplace support and establish a group identity (Brass, 1985; Hanson, 2000; Metz & Tharenou, 2001). These outcomes are known to improve women's workplace experiences and career satisfaction, particularly for women working in non-traditional roles.

Group identity and networks were delivered through a range of policy-based initiatives and program deliverables. One example of a policy-based intervention was the introduction of a 2012 Personnel Branch Directive which stated: 'where possible and where there is no disadvantage to individual women', attempts should

be made to post multiples of women onto the same training courses and after graduation, into the same Air Force squadrons and onto the same training courses.

The development of this directive was informed by Kanter's assertion that 'a group member's awareness share, averaged over shares of other individuals of the same social type, declines as the proportion of total membership of the category increases, because each individual becomes less surprising, unique or noteworthy' (1977b:971). The directive sought to reduce women's extreme visibility and isolation through providing enhanced opportunities for women to work and study alongside other women who were perhaps experiencing similar challenges pertaining to their gender (a 'safety in numbers' approach).

Developing a group identity and support network for women pilots was framed around providing greater access to role models and mentors; fulfilling a known need for women working in non-traditional occupations (Ahuja, 2002; Chesler & Chelser, 2002; Whittock, 2002). Positive women role models in non-traditional occupations challenge deeply held societal ideas about the gender-appropriateness of different occupations and enable women to feel that success in non-traditional roles is achievable (Canadian Sector Council Program, 2004). With regard to a mentoring strategy, our team initially considered assigning pilots with designated 'role models' to act as buddies and supporters. However, based on our own collective experiences as women in the Air Force, we decided to instead facilitate opportunities for mentoring relationships to form organically through informal interactions.

As such, we focused our efforts on creating the networks that would enable women pilots (and women in other non-traditional roles) to meet and hopefully connect with other women in their local area. While networking is a known career benefit to both men and women seeking to advance their careers (Forret & Dougherty, 2004), it is particularly necessary to women in non-traditional fields. Our team decided to both tap into existing pilot networks, as well as build our own internal networking

program across the Air Force. From an external perspective, the Air Force has worked to engage civilian pilot networking programs, for example, The Australian Women Pilots' Association (AWPA) and airlines-based networking programs.

The AWPA and Australian airlines share the Air Force's goal to encourage higher numbers of women into flying and were thus ready partners in any initiatives designed to achieve that goal. As a means of engagement, the Air Force now funds pilots' annual AWPA memberships and opportunities for Air Force pilots to attend (and speak at) pilot networking events and conferences, as well as promoting external pilot networking events across the military pilot community.

From an internal networking perspective our project team also created a customised program called the 'Women's Integrated Networking Groups' (WINGs). The WINGs networking model was based on Air Force women's preferences (garnered through focus groups) and organisational 'best practice' networking case studies. The program comprises attendee-driven, locally facilitated women's group meetings that are held in every Air Force base location on a regular basis.

To maximise student pilots' access to WINGs, we hired former Air Force pilots (who serve the Air Force as members of the Reserves) to deliver the program at both flying training schools. WINGs' popularity has since generated several other off-shoot networking groups and been adopted as the 'best-practice' model for women's networking across the entire Department of Defence. Figure 8.5 in Appendix 1 is a photograph of a recent WINGs session held at RAAF Williamtown base.

Two other networking/group-identity building opportunities were created through both a large scale conference targeting women in non-traditional employment (photograph at Figure 8.6) and a series of 'Flying Female' breakfasts for women aircrew students at ADFA. Each of these events proved extremely worthwhile to

attendees who valued the opportunity to meet other women aircrew within informal settings. Figure 8.7 is a photograph from the inaugural breakfast.

The networks commenced through our team's work generated a growing sense of solidarity, group identity and 'sisterhood' amongst flying women. While the organisational impact of this improved *esprit de corps* amongst women pilots is difficult to gauge in terms quantifiable outputs, women's increased willingness to participate in organised networking activities and help other more junior women to succeed indicates a discernible shift in organisational culture.

Providing crisis support was another key intervention that was developed in response to research findings. Having discovered the inner-battles (and enduring battle scars) that many young women experienced throughout their career, providing tools and strategies for enhanced support seemed vital, if higher numbers of women were to succeed and remain in longer-term flying careers.

Two crisis support strategies developed by our team included a somewhat confronting, 'tell-it-how-it-is' magazine-style guidebook -*Flying Solo*- introduced in the opening paragraphs of this thesis). The cover artwork for Flying Solo is shown in Figure 8.8. We also started providing new pilots with a list of past and current ADF women pilots (complete with contact details) should they need an empathetic ear or advice at any stage of their flying careers. In their study of gender-informed mentoring programs for women engineers, Chesler and Chesler (2002) determined the criticality of women having more experienced women to lean on in times of stress.

These simple and relatively inexpensive interventions have already been reported as helpful to pilots commencing their flying careers; especially the ability to 'phone-a-friend' during times of crisis. One recent flying school graduate attributes the guidance she received from a more senior pilot as pivotal to her success through pilots' course. The demand for Flying Solo has extended beyond the military

context, with numerous civilian pilots also seeking copies of the booklet. This perhaps demonstrates the shortage of available literature that targets women in non-traditional occupations in a practical and accessible way. This is a finding from this research project that has applicability beyond the military context.

This research has determined that, outside the day-to-day challenges of the masculine culture, some of the most fundamental challenges impacting women's continued flying careers relate to motherhood and pregnancy. This may be because the point of having children presents a major intersection between cultural and structural issues impacting women pilots and women in the Air Force more generally. Women working in non-traditional careers are known to experience work-family conflicts more acutely than their peers in more highly feminised occupations (Watts, 2009; Taylor, 2010) due to the lack of consideration afforded to their needs through policy and procedural interventions. This is especially true of women working in non-traditional occupations within highly masculinised organisations; who encompass barriers pertaining to both their profession and organisational context.

The complex issues associated with pregnancy and maternity leave in this study span several areas of focus, including; whether women can fly while pregnant, how their 'absence' from flying is accommodated within the system, and the impact that a break in service has on their flying career. Another complication for pilots after having children, like their peers in other non-traditional fields is accessing meaningful part-time or flexible work that can readily accommodate the demands of their non-traditional occupation. Each of these areas of focus was addressed by our team, although finding comprehensive solutions within a rigid organisational construct has not been quick or easy. While some excellent work has commenced, a number of issues have not yet been resolved to a satisfactory standard.

A key finding from this project is the need for organisations to apply a feminist gender lens to policy development and ensure women's specific considerations are

considered, especially those policies directly pertaining to pregnancy and maternity considerations. While pregnancy itself can create career barriers for women in many working contexts (Gueutal & Taylor, 1991), for women pilots in the ADF the career-impact of pregnancy is more acute due to outdated and paternalistic policies that fail to consider women's needs. This presents another example of why applying a feminist lens to the problem of women's under-representation is so critical.

Organisations dominated by men may fail to consider how policies might be viewed by the women they most impact. One example of this in the ADF is the existence of an outdated and paternalistic policy that automatically 'grounds' pilots on 'confirmation of pregnancy'; a stance which was very much resented by ADF women pilots in this study. Another problematic policy is the directive that prevents women's workplace positions from being 'backfilled' while they are pregnant or on maternity leave.

Both of these policies, for the reasons outlined in Chapter Seven, have resulted in building resentment towards women in flying squadrons, due to their lengthy absences through periods of maternity. These seemingly innocuous policy directives, arguably designed to protect women's status and rights within the ADF workplace, are a classic example of policy designed without applying a gender lens to the issue. Observing the issue through a gender-aware feminist lens shows that, for women pilots who fight, from their first day of training, to be accepted as full and legitimate members of their flying teams, the idea of filling a flying position whilst unable to fly is simply untenable.

Efforts to have these policies removed or adjusted are gaining momentum within the ADF, fuelled, in part, by women pilots' newfound solidarity across the organisation. Where the complaints of one or two women are unlikely to be heard, it is difficult for the organisation to ignore pleas from the entire population of women pilots across all three services. This example shows the strength of the

liberal feminist ideology that higher numbers of women result in improved outcomes for all. Beyond just 'being nice to women', there are tangible capability benefits attached to altering these policies. The women interviewed in this study preferred to leave the Air Force prior to or shortly after having children, rather than become a 'burden' (perceived or otherwise); changes to these two problematic policies will likely result in the improved retention of women pilots after having children.

In the interim and pending whole-of-organisation policy changes, Air Force issued an interim policy directive which enables women in a range of non-traditional occupations to remain in their workplaces as an 'additional asset' on confirmation of pregnancy, thus enabling their position to be temporarily filled by another member. This policy change has already improved women's willingness to remain in flying squadrons through their period of pregnancy and maternity leave, whilst also maximising options for part-time employment once they have returned to work.

Similarly, another simple policy intervention was a separate policy directive stating that after periods of maternity leave, women are to be afforded every opportunity (and the training/retraining required) to *'resume their career from when it was stalled due to pregnancy and maternity leave, regardless of rank, experience or time out of their primary employment role'*. This policy, while initially drafted with pilots in mind, was applied to all occupations where women comprise less than ten cent of personnel.

The need for this intervention became apparent after research findings showed that pilots' ability to progress their flying careers was hindered by pregnancy-related workplace absences and the impact on flying hours and aircraft currency. We observed first-hand experience of this while Sam was working on our project, as observed in Chapter Seven. Her personal case amplified and personalised the research findings and prompted the need for us to urgently resolve this issue.

Sam, like many of her peers who did resign after having children, was considering leaving the Air Force if she couldn't return to operational flying and progress her career. The impact of these policy changes is telling; there have been no resignations from women pilots since these policy interventions have been put into place. For the Air Force, this means that the substantial investment into pilot training and pilot-skill development has been retained. This new flexibility also affords pilots the option to seek a ground-based, non-flying posting during the early years of parenting, to accommodate part-time and flexible work, with a view to returning to operational flying at a later time. These changes mean that women pilots will no longer have to delay motherhood until their early forties to avoid compromising their Air Force flying careers.

The aforementioned interventions, however successful, are more of a 'Band-Aid' fix than an enduring solution. Working flexibly or on a part time basis is one common means by which women (and increasingly men) manage the additional challenges invoked by being a parent (Watts, 2009). Due to the limited number of women pilots, flexible work situations like Sam's are being managed on a case-by-case basis. While this offers opportunities for individualised, tailored solutions, there are no tangible policy-enforced assurances for women planning to start a family. DGPERS-AF policy staff are currently looking to develop more enduring policy-based solutions to accommodate women's needs.

To further assist women aircrew (not only pilots) and ensure they became aware of the recent policy changes, our team also developed a practical guide for planning and preparing for and also managing pregnancy and motherhood called 'Flying through Parenthood'. This guide was developed in response to women's need for information about motherhood and contains policy advice, practical suggestions and a range of other tips provided by women pilots who had 'been there and done that'. The guide was very much appreciated by Air Force women and although it had a focus on pilots, other aircrew found the tips and suggestions to be most

helpful. Similar guides are being developed for a wide range of non-traditional occupations across the ADF.

Beyond the program deliverables within the auspices of the pilot diversity project, the research outcomes had demonstrated the degree to which the cultural context of the military organisation actively worked against women pilot's ability to succeed. As Nemitschenko observes, 'unless negative and hostile attitudes, which can undermine morale and affect performance, can be turned around, only limited benefits to operational capability will accrue from increasing gender equity' (2001:42). It was evident to our team that the nature of the cultural challenges required intervention beyond the more tactical-level activities already detailed in this chapter.

To achieve fundamental and lasting change, the specific attraction, training and retention initiatives designed for pilots needed to be supported by an organisational shift from expecting and valuing sameness and conformity; to valuing difference. This is another key reform factor; if organisational culture serves to minimise, disenfranchise and subjugate women, then that culture must be changed. Organisations seeking to build diversity must ensure the organisational culture is readied for any changes and understands why the changes are necessary – another key finding from this project.

Therefore, beyond the tactical-level HRD interventions, efforts were also made within the Air Force to transform the gendered nature of the organisation itself. The ability to apply whole-of-organisation, large-scale cultural interventions were beyond the scope and resourcing of our team. Noting the magnitude of the task, the CAF and DGPERS-AF engaged both the Air Forces' Adaptive Culture and Air Force Improvement teams to work together to achieve cultural reform, through a project called 'New Horizon'. From a theoretical perspective, the New Horizon project represents what Ely and Meyerson (2000) call 'post equity', which is a model for addressing the gendering processes inherent in many large organisations. A

post-equity approach entails challenging structures beyond formal policies and practices, by examining informal work practices, symbols and images, social interactions and internalised gender identities (Meyerson & Kolb, 2000).

New Horizon is a holistic approach to improving the organisation’s culture through a range of interventionist strategies that are designed to empower Air Force leaders to lead reform within their own workplaces. The project commenced in late 2012, running concurrently to our project, and entailed a vast array of best-practice cultural reform interventions that together, has helped to shift the culture across the Air Force. The cultural reform activities were part of a multi-faceted approach targeting different areas and rank levels across Air Force, primarily through education, communication, benchmarking and engagement.

Leadership engagement was perhaps the most critical component of the reform program. Shifting the attitudes of those personnel most able to influence more junior personnel was necessary for any reform program to succeed. One example of successful leadership engagement was a large-scale conferencing event that brought together almost all of the Air Force’s Commanders, noting that in the military, Commanders play the most critical role in shaping the culture of the workplace (AHRC, 2012).

The conference program was designed to generate motivation and tools for ‘resisting and revisiting the dominant discourse’ (Meyerson & Kolb, 2000:563) and addressing the inequities generated by the key ‘gendering processes’ in Air Force. Commanders were asked to reflect on their own unconscious biases and their behaviours as leaders, subordinates and bystanders and identify practices in their command which may serve to exclude or alienate members in their workplaces. The activity had a profound impact on the organisational culture, with many formally resistant Commanders gaining a deep understanding of the need to change and how that change might be accomplished.

New Horizon has made and continues to make a fundamental and profound difference to the way that many leaders and personnel within their sphere of influence think and feel about all forms of diversity within the Air Force. The broader reform project has enabled leaders to understand the criticality of reform, the tangible capability benefits associated with diversity within organisations and the importance of building inclusive workplaces where all personnel can perform at their best. Without this enduring cultural shift, the measures put in place by our team may have not have been as successful, especially if leaders had no ownership of the need for such measures.

Lessons learned

Introducing such fundamental change to ideologies, policy and culture is seldom likely to be trouble-free, especially within a deeply gendered organisation like the military. Diversity initiatives are often perceived as threats in large organisations; and the 'dominant response' can be 'denial, avoidance, defiance or manipulation' (Dass & Parker, 1999:69). This necessitates that change be delivered through a change management process that targets likely barriers to change.

Perhaps unsurprisingly, and despite CAF and DGPERS-AF's personal commitment, our team initially experienced some antagonism and antipathy when trying to convince the wider organisation of the need for targeted measures to increase women's representation. I would be surprised if *most* organisations implementing diversity initiatives did not experience some form of 'backlash', due to the discomfort that such programs might induce in the workplace.

The backlash that our team experienced was perhaps more acute, due to both the highly masculinised nature of the military and a cultural identity that values homogeneity. Any actions to promote gender inclusiveness directly challenge the strongly held military 'equality as sameness' ideology cause discomfort to those wedded to extant paradigms. Mitchell's (1998) entire book 'Women in the Military: Flirting with Disaster' is a furious, bitter diatribe against women's inclusion in the United States armed forces and any affirmative measures designed to increase their

presence. Our team's experience indicates there are some personnel in the ADF who share Mitchell's antiquated and inaccurate views.

Senior Air Force women were sometimes our team's staunchest adversaries; again unsurprisingly, as the literature demonstrates that 'women who have "made it"' tend to 'deny the existence of gender obstacles in their path' (Powell et al. 2006:692). A small number of women pilots and other aircrew were also resistant to the underpinning aims and ideologies of the project, supporting Mitchell et al.'s (2005) finding that that affirmative action policies can undermine women pilots' confidence and legitimacy in relation to their professional competence. Researchers also note that in non-traditional contexts, women themselves may also be 'more concerned to maintain the status quo' (Gale, 1994:10) because they have faced their struggles to 'fit in' and prove themselves worthy within the male-dominated contexts.

Of all of the project's activities, those designed to bring women together for mutual support and networking drew the harshest criticism from across the Air Force. In male dominated contexts, men can find women's relationships with other women very threatening and respond by preventing women from engaging with women's groups (Cockburn, 1991; Katzenstein, 1998). Ironically, while the importance of 'male bonding' is often provided as a valid reason to exclude women from military Service, 'male soldiers seem categorically unable to perceive or forgive a similar need in women … they often possess an irrational fear of women's groups, believing that, in their midst, men will be plotted against or perhaps worst of all, be rendered unnecessary' (Barkalow in Katzenstein, 1998:84).

Male resistance to the foreign concept of women's bonding in the military took many forms, including derogatory remarks in the workplace, angry emails to our team and supervisors actively banning their staff from attending WINGs meetings (which are held at lunchtime). Policies and initiatives designed to improve the entry of, retention of and support afforded to women pilots also garnered some criticism,

based on several pervasive and inaccurate perceptions around the diversity programs. The most common concerns were based on perceptions that women were somehow gaining an ‘unfair advantage’; standards were dropping to accommodate their increased entry; and men candidates were being disadvantaged. These are common responses to diversity initiatives targeting women (Dass & Parker, 1999).

The work of other diversity researchers and practitioners has demonstrated that diversity initiatives supported by a ‘competitive advantage justification’, as opposed to an affirmative action argument are more likely to be well-received within organisations (Kidder et al., 2004). Our team made some mistakes at the earlier stages of the project by not expending enough time and effort building communication strategies to underpin the interventions being delivered across the organisation.

Once we became aware of the ‘backlash’ and the impact of failing to adequately communicate the rationale for change, we expended far greater effort towards providing sustained education and messaging that helped people ‘see the need for and the logic of a change’ (Kotter & Schlesing, 2008:5) by reinforcing the capability argument in support of women’s increased inclusion. A sound communication and engagement strategy ensured that any future messages delivered in relation to diversity were accurate, sensitively crafted, supported by senior leadership and in keeping with the organisation’s wider approach to cultural reform.

Our project team used the research data (primarily direct quotes from women pilots) and the case for change quite extensively, to quell any sense that gender-inclusion initiatives were nugatory and/or unnecessary. As ‘individuals have a unique capacity for denial’ multiple exposures were ‘necessary to create the depth of emotional response’ (Nadler & Tushman, 1989:199) across the Air Force’s population. Personnel were subject to multiple exposures through a wide range of ‘persuasive communication’ (Armenakis et al., 1993), including awareness

presentations, conferences focused on non-traditional employment, communications via email, media and marketing interventions.

Our experience indicates that the key to effective messaging is developing an appreciation of the primary issues of concern and subsequently finding ways to openly and frankly address those issues. While different organisations might require messaging relevant to that organisational context, our team found that there were two keys forms of messaging that were effective in quelling the disquiet; the first emphasised the capability-based case for change, for example:

- The pool of applicants to Air Force piloting roles has been diminishing in both numbers and quality; women are an as-yet-untapped source of future pilots.
- Other aviation organisations like the commercial airlines and foreign militaries are all implementing similar programs to attract women into flying roles, due to a capability need.
- Studies have shown that women and men tend to excel in different areas of flying; a crew comprising both men and women enables the Air Force to exploit both skill-sets.

The focus of the second type of messaging was to directly reassure personnel regarding some of their primary concerns. Examples of these forms of messaging include:

- The Air Force's women pilot representation is less than half the industry representation rate, suggesting there are barriers in the ADF beyond those experienced in civil aviation.
- The Air Force will never risk human life and expensive equipment by lowering any entry or graduation standards.
- The low numbers of women pilots, 20 women to 1000 men, does not suggest that women are being advantaged through selection or training processes; conversely, the numbers suggest they may have been disadvantaged.

- Talented men will not be disadvantaged through these initiatives, rather, the aim is to widen the overall recruiting pool such that the Air Force can attract the best and the brightest from across the whole population.

Beyond communication strategies, theories of organisational change also show that engaging those most likely to resist in the change process will help to reduce any disquiet (Kotter & Schlesing, 2008). As such, 'champions of the cause' like Sam and other women pilots actively worked to minimise the backlash from within the pilot network, by reiterating the numerous benefits likely to result from the planned changes. Some pilots initially quite resistant to the reform initiatives have become more supportive over time, especially those working for commanders who have really 'sold' the importance of increasing the numbers of women pilots.

After some strong initial resistance, at around the twelve month mark, we did notice tangible reduction in the levels of resistance across the organisation. It is difficult to prove whether this improved acceptance was due to the targeted communication measures, or attributable to Air Force personnel adjusting over time. We did see some positive signs such as personnel from outside of the branch starting to lead, activate and/or willingly participate in cultural reform activities within their own spheres of influence. Numbers of personnel, men and women across a range of rank levels, also started actively offering to help our team with progressing diversity and cultural reform activities across the organisation.

We attributed this shift to a range of factors, including senior leadership's commitment to organisational reform, personnel better understanding the compelling case for change (aided by the communications strategy developed by our team) and some of our team's early 'wins' in our program delivery. Time, familiarity with the initiatives and the overarching cultural change towards valuing difference has also reduced the level of disquiet across the Air Force.

That said, the Air Force is still very much at the start of their cultural reform journey with much work yet to be done. Continued success will depend on many factors,

especially ongoing leadership support, resource availability, organisational commitment and project interventions being incorporated into the organisation's everyday 'running system'. Another factor in support of enduring commitment to change will be the longer-term success of the interventions already in place.

Project outcomes

When gauging project success, the early signs are promising from both a quantifiable and cultural-change perspective. In terms of quantifiable measures, establishing tangible benchmarks for success (numerical measures) has been an essential element in sustaining the momentum for change. Cultural success measures are more difficult to ascertain, but our team has proactively sought continuing feedback from varying sources; perhaps most tellingly, from women pilots themselves.

From a quantifiable perspective, the project success will ultimately be measured by the degree to which increased numbers of women enter, succeed and remain in Air Fore flying roles. The recency of the reforms is a limitation to this study, but although some project outcomes are still at the early stages of implementation, the initial signs are very promising.

When this research commenced, women comprised the following percentages of the ADF pilot workforce: Navy 3 per cent, Army 3.8 per cent and Air Force 2.4 per cent. As at 6 August 2014, the ratios of currently serving pilots in the full-time ADF are: Navy 3.4 per cent, Army 4.3 and Air Force 3.5 per cent. If both the trained and under-training workforce is considered, the ratios are: Navy 4.2 per cent, Army 5 per cent and Air Force 4.4 per cent[5]. Although all three services show improved representation, the Air Force's increases are the most significant.

The Flight Camp concept and GPS initiative will increase those Air Force percentages even further over the next few years. As noted previously, twelve women are

[5] Based on data sourced from Defence's Directorate of Workforce Planning and DGPERS-AF pilot career management personnel, on 5 August 2014

currently in the recruiting pipeline for the GPS, which only commenced in late 2013. For Flight Camp, seventeen of the forty young women who attended the camps have already applied, through DFR, for entry to the ADF as pilots. A further eight young women have applied for a range of other ADF occupations, including other aircrew roles. As many of the young women attending the 2013/2014 camps are yet to complete their high school education, the number of applicants may increase further over forthcoming years.

In terms of overall recruitment and interest in pursuing flying careers, the data from DFR also looks positive. The tables at 8.1 and 8.2 and figure at 8.1 show the volume of women applicants in the pilot recruiting pipeline from FY 2010/11 – 2013/14. The significant dip in years 11/12 is due to a very low recruitment drive for pilots generally, due to lengthy waiting times to commence flying training. The tables show that there has been an increase in the overall volume of women applicants seeking careers as pilots, most likely as the result of initiatives such as Flight Camp, the GPS and also an increased recruiting focus, targeted marketing and improved networking through the AWPA.

The 164 women applicants for Financial Year (FY) 13/14 are still being processed through the various recruiting stages. If successful through the selection and testing processes, these pilot candidates will most likely be appointed during FY 14/15 or even FY 15/16 due to the lengthy recruitment process. That said, there has already been a noticeable increase in the number of women appointed to the ADF as pilots in the past year. The average number of women recruited to the ADF annually, from the FY 2009/10 to 2012/13[6] was six per year, across all three Services. For the FY 2013/14 however, the intake number for women pilots was thirteen, with nine of these women appointed to the Air Force[7].

[6] Data provided by DFR in August 2014; based on averaging the overall intake numbers of ADF women pilots from FY 2009/10 to 2012/13.

[7] Data provided by DFR in August 2014.

Pilot Pipeline By Gender	Female	Male	Grand Total
10-11	99	816	915
11-12	67	697	764
12-13	109	909	1018
13-14	164	1057	1221
Grand Total	**563**	**4614**	**5177**

Table 8.1 – Pilot recruiting pipeline by gender (whole numbers) FY 2010/11 – FY 2013/14

Pilot Pipeline % By Gender	Female	Male	Grand Total
10-11	10.82%	89.18%	100.00%
11-12	8.77%	91.23%	100.00%
12-13	10.71%	89.29%	100.00%
13-14	13.43%	86.57%	100.00%
Grand Total	**10.88%**	**89.12%**	**100.00%**

Table 8.2 – Pilot recruiting pipeline by gender (as a percentage) FY 2010/11 – FY 2013/14

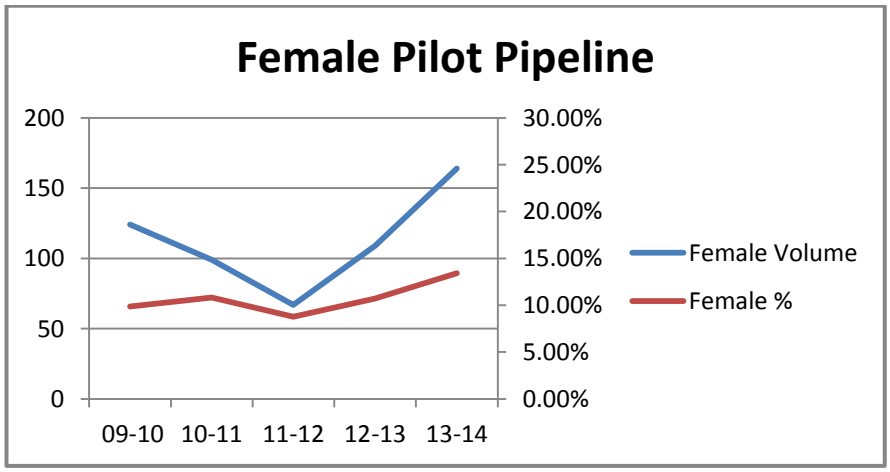

Figure 8.1 – Female pilot recruiting pipeline, FY 2009/10 – FY 2013/14

There is also some compelling evidence that Air Force pilots are increasingly opting to remain in service for a longer period of time. The most compelling evidence of this point is that there have been *no* women pilot resignations since 2011, even

though a number of pilots have reached the end of their contractual obligation over the past few years[8]. This is true even for women who have started their family, noting that it is at the point of having children that Air Force women pilots have historically sought resignation.

Six women pilots in the Air Force have had babies over the past two years, and *all* have returned to the workforce after doing so, with minimal expected impact on their career progression. The extent to which women have been prepared to have a baby whilst still serving in the Air Force may also indicate an improved level of confidence in relation to being supported by the organisation and being able to maintain their flying career. Improved access to flexible employment may also be a factor.

To this end, as at August 2014, twenty one per cent of women pilots in the Air Force were accessing flexible or part time working arrangements[9]; another promising outcome of the targeted policy changes and cultural reform measures. Improved retention, coupled with the recruiting initiatives launched in 2013, means that the Air Force looks likely to achieve their target of doubling the number of women pilots within the next two years. Given women's historically low representation in this field, this will be an impressive achievement.

With regard to cultural measures, perhaps the most positive and tangible outcome of the project is the sustained organisational and personal commitment to achieving project outcomes, which has endured beyond the original team's tenure in the diversity directorate. A number of women pilots have volunteered to work in the diversity directorate to maintain the momentum achieved through the project's early stages. Women pilots are now volunteering for public speaking roles, engaging

[8] As advised by via email from DGPERS-AF pilot career management personnel, on 5 August 2014

[9] Ibid.

with other women in aviation through external forums and advocating pilot jobs through a range of different forums.

Several recent pilot applicants have applied to Defence Force Recruiting (DFR) as a direct result of meeting and discussing Air Force flying careers with currently serving women pilots. The organisational commitment is also evidenced by a wave of new resources dedicated to diversity projects, including an additional five team members posted to DFR to support gender diversity programs and recruitment activities.

A number of further additional factors will be critical to the enduring success of the project. Sustained change depends on both the achievement of the critical mass and the translation of that mass into greater representation within the organisation's senior ranks. The degree to which women feel compelled to remain in the Air Force for longer term careers and strive to build careers that will facilitate promotion up the ranks will be the ultimate test of the project, which may take many years to ascertain.

Maintaining targets for success and reporting against the achievement of those targets will also be invaluable to ensuring that momentum is not lost, as organisational priorities (and associated resources) shift over time. With this in mind, the Air Force has recently evolved gender diversity targets and measures into a strategic gender-diversity strategy document, which dictates goals and measures to the year 2020 (see Figure 8.8). The Air Force is now required to report against gender diversity achievement on an annual basis, through Defence's Annual Report.

Occupational feminism: a new approach to increasing women's representation in non-traditional occupations

In recent years, feminist theorists with a focus on human resource development, such as Meyerson and Kolb (2000), Bierema (2002) and Howell et al. (2002), have implored feminists to find new ways to bridge theory/research and human resource development (HRD) practice. When seeking to build human resource strategies that

were based on the outcomes of my research, I searched for a proven model for success. Unfortunately my searches proved fruitless; I was unable to identify a theoretically-supported model that had demonstrated success in linking feminist sociological research outcomes to human resource strategy.

The inability to locate an extant model for change necessitated the development of a new approach to diversity which I have called 'occupational feminism'. This approach and the FOI model through which occupational feminism can be applied within organisations, presents the culmination of both my research and the corresponding reform efforts within the gendered occupation of Air Force pilot. As an approach to change, occupational feminism presents a new and targeted paradigm for linking feminist research on an occupational group to workplace strategies to build diversity.

As made apparent by the name of the approach, feminism is the theoretical lens on which occupational feminism is based. Occupational feminism brings together feminist epistemology, sociologically-orientated research and practical human resource interventions as a means of delivering change within non-traditional organisations and occupations. The approach is based on the premise that targeted, feminist research about the under-represented group is absolutely critical to developing the strategies designed to mitigate the barriers and challenges experienced by that group. Occupational feminism is further predicated on an ideology that only by considering practical, policy-orientated frameworks for interventionist Human Resource Development (HRD) strategies (informed by feminist theory), can we truly begin to erode the structural nature of workplace oppression and the power relations embedded in the workplace.

The Feminist Occupational Intervention (FOI) model (Figure 8.2) diagrammatically shows the staged application of occupational feminism to achieve diversity reform. The model shows the linear progression from research to intervention and the terrain where feminist theory, action-research and Human Resource Development

(HRD) meet to deliver *real-life outcomes* for women working in non-traditional occupations.

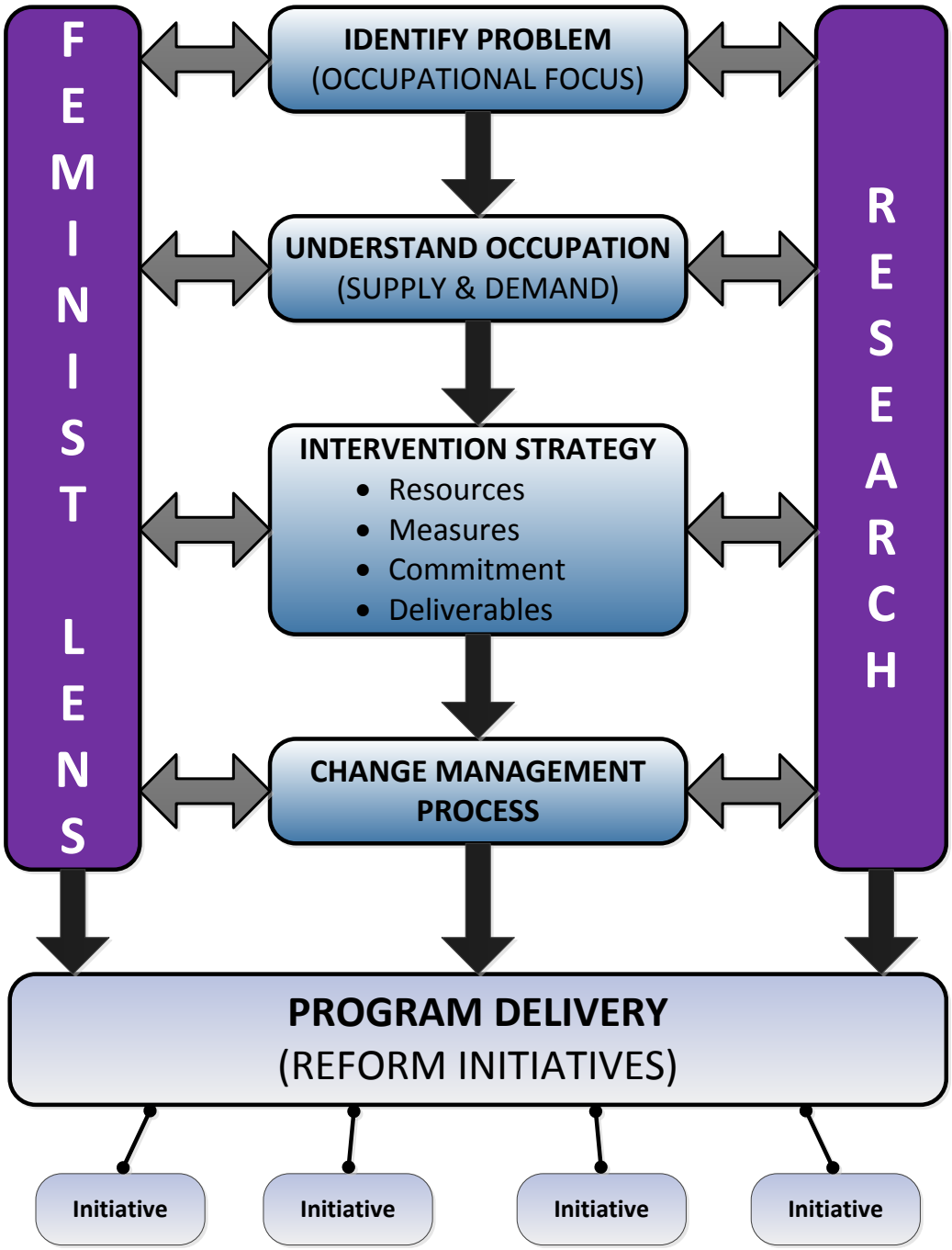

Figure 8.2 – Feminist Occupational Intervention – A model for linking feminist research to human resource development interventions

The specific features of occupational feminism, as a model for change, are summarised through the final thesis chapter, as a means of drawing together the many threads that lead to the framework's development.

Conclusions

The research and subsequent intervention strategy have entailed using an approach that was feminist in intent, occupationally-focused, evidence-based and supported by research. Critical to the project's success were a series of preconditions that created an optimum environment for project delivery. In hindsight, perhaps the most critical of these was the senior leadership support and commitment that lead to the project being resourced. This research shows the power of gaining senior leadership commitment and stakeholder buy-in when supporting widespread cultural change; as resistance to any form of targeted intervention is likely to be strong. Also critical was building a quorum of committed change agents, who have remained actively engaged and supportive to the project's delivery, even beyond their initial work with our team.

By leaving gender 'in' and acknowledging the advantages borne from male privilege within non-traditional contexts, the Air Force has (perhaps inadvertently!), moved towards an ideological position that can only be escribed as 'feminist' in application. Through the work of my team and other AHRC interventions, the organisation's leaders now understand that expecting women to operate in male paradigms, without support and acknowledging the differences that exist between men and women, is actually *unequitable.* Today, some years after the reform process commenced, diversity and cultural reform have taken on a life of their own within the Air Force, largely due to the commitment shown by proactive diversity champions across the organisation.

The consideration and real-life application of the research and subsequent reform activities, in relation to this case study of women pilots, has resulted in the development of a new and different approach to building diversity within

organisations, called occupational feminism. This approach is practically supported by an applied model, FOI, which is a tangible means of linking feminist research to practical organisational interventions.

The FOI approach supports the widely held feminist contention that ‘we must recognise the ideologies of difference which define us as men and women and the inequality this produces’ (Wilson, 1996:825). As organisations struggle to diversify their workforces, not just pertaining to gender but cultural, religious, sexual and all other forms of diversity, occupational feminism, as demonstrated through this research, provides a reform model that has potential application to other organisational and occupational contexts seeking greater diversity.

Appendix 1 TO Chapter Eight

PHOTOGRAPHS OF KEY ACTIVITIES

Figure 8.3 – (below) Screen shot from Air Force's 'Anywhere, Anytime' advertisement

Figure 8.4 – (left) Chief of Air Force, Air Marshal Geoff Brown, with attendees from the March 2014 Flight Camp in East Sale

Figure 8.5 – (below) Women from RAAF Williamtown WINGs program listening to guest speakers (2013)

Figure 8.6, the author, (then) Wing Commander Dee Gibbon hosts a panel with Air Force's senior leadership team during the 2012 Women's Development Forum

Figure 8.7 – Flight Lieutenant (now Squadron Leader) Natalie Pietroban, chats to Officer Cadet Ellen Mace at the inaugural 'Flying Females' breakfast, held in 2011

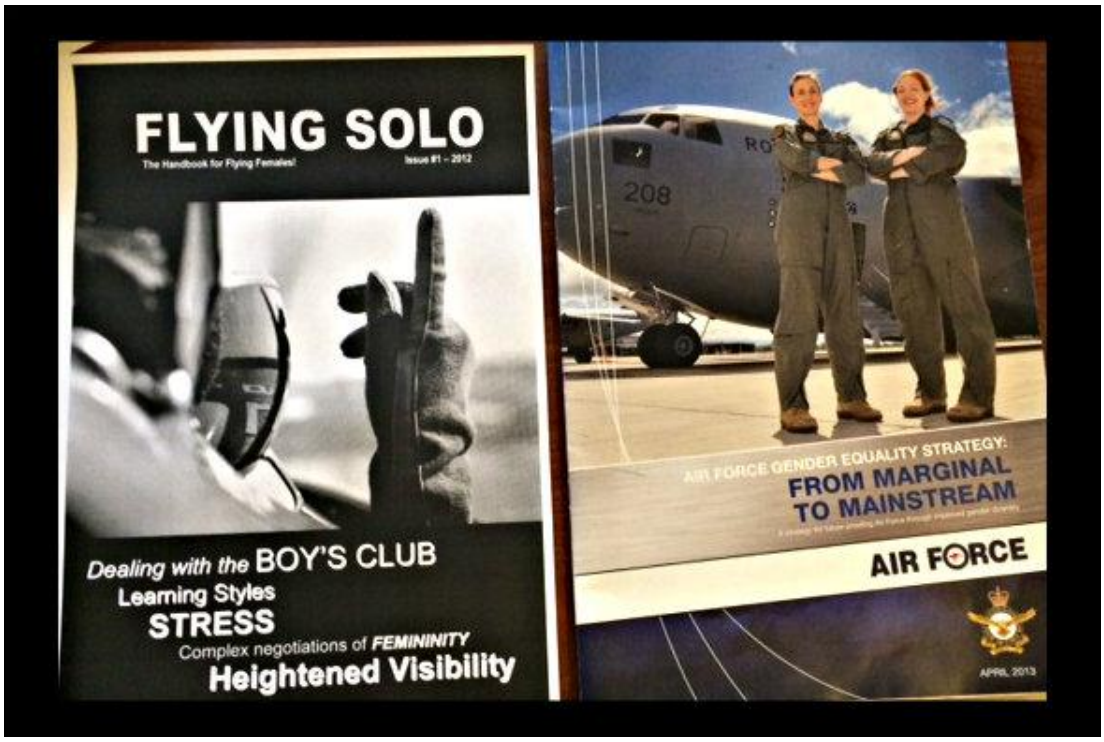

Figure 8.8, the covers of Flying Solo and Air Force's Gender Equality Strategy, developed by the Air Force's Directorate of Workforce Diversity

CHAPTER NINE–CONCLUSIONS

CHAPTER NINE - CONCLUSIONS

Introduction

This study entailing research and the application of that research, has achieved several important objectives. The research has:

- explored the cultural and structural barriers confronting women who seek to enter and pursue a career as an Air Force pilot, a distinctly non-traditional occupation;
- demonstrated the value of applying a feminist approach to understanding those barriers and challenges, not least by giving voice to the women most directly affected;
- significantly shaped the development of a practical implementation strategy designed to tackle those issues in a comprehensive way; and
- in doing so, established the basis for a new model to support diversity interventions across a much wider range of organisations and institutions.

This approach to the employment of women in non-traditional occupations had to be developed from the 'ground up'. While there many excellent and practically-orientated models and approaches for building diversity and understanding gender within organisations, each had limitations that impacted their suitability for this particular project. Many extant diversity research and frameworks tend to focus on one specific element of diversity, such as race (Ibarra, 1995; Richard, 2000), multiculturalism (Henderson, 1994; Cox Jr, 2001), culture more broadly (Watson et al., 1993; Gardenswartz & Rowe, 2009), religion and spirituality (Bennett, 2009; Hicks, 2002), sexuality (Button, 2001; Colgan et al., 2007), disability (Stone & Colella, 1996; Spataro, 2005) and/or age (Capowski & Peak, 1994; Bell & Narz, 2007).

Other models/strategies address 'diversity' from a more generic perspective, focusing on diversity in the broader sense (see for example, Robinson & Dechant, 1997; Shore et al., 2011; Guillaume et al., 2014); but few of these take a feminist perspective. While gender diversity tends to attract the lion's share of diversity research and practitioner interest, few models are feminist in intent and/or

practically orientated and action-focused. Those models that do have an action orientated, feminist focus (for example, Ely & Meyerson, 2000) tend to be organisationally-focused, rather than occupation-specific. As such, I was unable to source a successful theoretically-supported diversity model for directly linking feminist sociological research on non-traditional occupations to workplace diversity strategies; which necessitated my developing 'occupational feminism' and the FOI model as a new approach.

Developing a new framework for building diversity is both timely and practicable, noting the high prevalence of gendered occupations around the world (Anker, 1997) and within Australia (Rawstron, 2012; Workplace Gender Equity Agency, 2013). As talent pools shrink, organisations and industries are actively looking for new and creative ways to address the issue of gender segregation in occupations. For example, industries such as nursing (Meadus, 2000; Trossman, 2003) and teaching (Mills et al., 2004) are actively seeking higher representation by men workers where more locally, Australian industries such as policing (Fleming & Lafferty, 2003) and mining (Office for Women and Minerals Council of Australia, 2007) are trying to attract and retain more women. Occupational feminism and the FOI model present a new and promising means of tackling an enduring societal problem.

The particular qualities which set this study and model for change apart are its recognition of:

- the value of applying a feminist lens to each step in the research and subsequent reform process;
- the insights gained by focusing the analysis below the organisational level to the barriers and challenges impacting women in a specific occupation;
- the way in which both the supply and demand need to be addressed if comprehensive and lasting change is to be achieved; and
- the importance of bridging the gap between academic theory and more practical human resource development interventions.

The theoretical foundation on which this study was based is fundamental because it allows the particular occupation to be viewed through a different lens, which both illuminates and challenges established value sets and perceptions. Developing and testing a practical implementation strategy also afforded valuable insights into the intersection of cultural and structural barriers and the comprehensiveness of the initiatives required to change both practice and mindset.

Analysis and discussion

Applying a feminist lens

Feminist theory, an approach not normally ideologically compatible within a macho military culture, provided valuable insights into women's barriers and challenges that may not have been exposed using another theoretical framework. Feminism, as both an ideology and research framework ensured that gender was always kept at the heart of the inquiry (Reinharz, 1992) and that findings and interventions were sensitive to and framed around the unique perspectives of women.

This approach entailed 'leaving gender in' throughout all research and intervention stages and actively rejecting the 'male perspective of the dominant paradigms' (Bologh, 1984:388) that features so strongly in most military dialogues. Applying a feminist approach has entailed conducting research for women, by women to help women; an approach that has been pivotal to successful project outcomes and the development of a model for change.

One example of the feminist approach made clear through this research, is the extent to which male-dominated organisations, like the military, can fail to even consider factors impacting women's motivation to pursue non-traditional occupations and how these may differ from 'typical' male entrants. In the case of this research, even for those women interested in pursuing flying or ADF careers, this research has determined the prevalence of gender-specific disincentives to joining the ADF (for example, the lengthy contractual obligation and perception of difficulty associated with pilot entry tests). These disincentives to joining would not

have been exposed without a targeted research approach that was focused on women's perspectives.

A significant question when considering the possible wider application of occupational feminism and the FOI model framework is whether applying a feminist lens might limit the model's applicability to other types of diversity interventions. Thurlow et al.'s (2006) work, however, provides reassurances that a feminist approach should not be limited to only gender diversity. They note that a feminist qualitative approach offers 'an opportunity for researchers to begin to address issues of relationships, power and oppression within organizations by providing a more profound understanding of the experiences of individuals within organizations' (Thurlow et al., 2006:231). This understanding is relevant to members of any under-represented group. Thurlow et al. further contend that feminist research has application to many forms of diversity, including (but not limited to) 'issues of race, ethnicity, class, sexual orientation and age' (2006:231).

As noted in Chapter Two, there are many 'feminisms' which might be applied to the problem of women's under-representation in non-traditional occupations. Occupational feminism, as a new paradigm for examining non-traditional occupations, deliberately does not prescribe a specific theoretical feminist positioning. This affords researchers and practitioners the option of applying the feminist framework of their choosing. However, it is my view, in building, applying and testing the model, that liberal feminism is the most helpful framework for diversity reform. The key premise of the liberal position is that men and women have the same right to participate in the workplace, hold similar skills and abilities and therefore deserve full and equal access to all occupations, including those dominated by men (Offen, 1988); a theoretical premise that aligns with action to increase women's representation in non-traditional roles.

The liberal feminist position also supports the notion that targeted policy, positive measures and other proactive interventions are necessary to change extant

organisational cultures and remove any structural and cultural barriers impeding women's entry to and success in non-traditional occupations (Tuttle, 1987; Bagilhole, 2002). Liberal feminist thought is also underpinned by a belief that women's improved representation is likely to result in a reduction of gender biases in the workplace (Agostino, 2000); a viewpoint which also resonates with occupational feminism and the FOI model for change.

Irrespective of the specific feminist framework used, any approach informed by occupational feminism should be broadly supportive of feminism's key tenements, which means the approach must be conducted by people 'who consciously use a feminist perspective' to 'give a voice to women' (Neuman, 2006:102). To be considered 'feminist', the approach must also seek to improve the equality of men and women through advocacy and challenges to male dominance and patriarchy (Bierema, 2002; Shaw & Lee, 2009; McNabb, 2010) and have an underpinning commitment to bring about changes that will improve the status of women in the workplace (Eichler, 1997; Morawski, 1997).

The feminist lens ensures women's perspectives, the impact of the activities on women and the degree to which the activities empower women, are key considerations at all stages. A feminist perspective also has implications for the research method/data collection method and how the data is both coded and analysed.

Occupation, not organisation

Occupational feminism highlights the value of determining an occupational focus for the subsequent research and reform activity. As noted previously, the occupational focus distinguishes this model from diversity approaches that are either organisationally or industry-based. For organisations seeking to increase the representation of women, this means identifying an occupational focus and then researching and delivering *occupation-specific* attraction, recruiting, training and retention strategies that are based on the research outcomes.

The case study explored through this research offers compelling evidence in favour of an occupational approach. Within the military organisational context, previous strategies to increase women's representation were focused on generic recruitment efforts, with little attention afforded to understanding the occupation-specific, gender-based barriers that exist beyond 'getting women through the front door'. The degree to which these past approaches have not succeeded is perhaps indicated by the minimal demographic shift in the ADF over the past few decades (AHRC, 2012); the same might be said for other highly gendered occupations in civilian industry.

In the case of military pilots, had I attempted to build strategies to increase women's representation in flying, without a solid occupation-specific research foundation, I would have missed some of the pilot-specific considerations that ultimately shaped the intervention strategy. I believe that it is the targeted focus on the pilot occupational group that has resulted in this approach being so successful in increasing women pilot's representation in the Air Force, where previous, generic reform initiatives have failed. As such, the new framework is based on the strong premise that an occupational focus is the key to successful organisational diversity reform.

In selecting an occupation on which to focus, organisations and/or industries must identify a problem that warrants targeted research and reform attention. An identified problem and the tangible need to change are known drivers behind most successful organisational reform imperatives (Armenakis et al., 1993). Different organisations or industries may have quite different reasons for selecting an occupation on which to focus their diversity reform efforts. A shortage of men workers is often a key driver for improved gender diversity measures in non-traditional fields, as noted by Reskin and Roos (1990). One local example, a research report entitled Unearthing New Resources (Office for Women and Mineral Council of Australia, 2007) is research commissioned by the Australian mining industry to attract women workers into mining roles, due to an operational need.

Engineering is another area of focus in relation to gender diversity for operational success in Australia (Lewis et al., 2007; Eggleton, 2011).

Other reasons for building diversity within occupations may stem from: political or legislative pressures (such as government-mandated gender quotas); social justice or moral imperatives; the need to reduce labour costs, a desire to widen the talent pool, wanting to improve the organisation's reputation, and/or to achieve better organisational outcomes (Kossek at al., 2006). Fortunately, in the case of Air Force pilots, there were compelling capability-based, talent pool widening and reputational imperatives for change that resulted in this project being delivered in the Air Force. Additional impetus for the subsequent intervention strategy was gained as the project progressed, due to the external political/societal pressure from the ADF's recent 'sex scandals'.

The intersection of these two dimensions; the capability need (structural imperative) as well as the externally-driven imperative for change (cultural imperative) certainly strengthened the canvas on which the pilot-specific interventions were drawn. While the Air Force's pilot project commenced before the Australian Human Rights Commission's (AHRC) external scrutiny of the ADF, the externally-driven scrutiny helped to enhance the ADF's broader strategic policy and practices to support gender integration. Organisations seeking similar occupational and organisational reform may also benefit from having external and authoritative champions from outside the organisation to both reinforce the case for change and provide objective scrutiny as reforms are progressed.

Understanding the occupation

Occupational feminism is based on the premise that targeted, feminist research about the occupational group is absolutely vital to creating a strategy designed to mitigate the barriers and challenges experienced by that group. As such, the second element of the FOI model entails conducting research in order to develop a thorough understanding of the barriers and challenges that might be impeding entry to and success/retention in the occupation.

The research may comprise many different facets; including literature-based research, an analysis of demographic data in relation to the occupational group, a comparative analysis of the occupation in relation to other occupations and/or empirical research that explores the problem of women's (or men's) under-representation. In the case of women pilots, the research stage of project delivery comprised all of these factors, which together, provided tangible information about what must be done to diversify this occupational group.

In terms of understanding the occupation and identifying barriers and challenges through targeted research, the FOI model emphasises the criticality of addressing both supply (choice) and demand (power) factors impacting women's entry to, success and retention in the occupational group. Beyond academic perspectives arguing the case to consider both demand and supply-side processes when researching occupationally-based sex segregation (Correll, 2001, 2004), the research underpinning this project provides evidence of the need to address both. The empirical stage of this project determined that barriers and challenges were located at every stage of the working cycle, from career initial interest/disinterest through to departure from the organisation. As such, neglecting either supply or demand barriers would have compromised the Air Force's ability to increase women pilots' overall representation.

Simply attracting higher numbers of a target demographic to a role (supply factors) is not enough, if cultural and structural barriers (demand factors) work to impede the integration and progress of personnel within that target demographic. Focusing on training and retention, without enticing higher numbers of women to join the occupational group is also unlikely to result in increases to a target demographic. Supply and demand barriers must therefore be a key focus of any research efforts and subsequent intervention strategies. The FOI model shows that a successful strategy to increase a particular group's representation requires that *all* aspects of the model be addressed; a key finding of this research process.

From a practical perspective, when determining *who* is best placed to undertake the research, organisations have many options, including: outsourcing to a research agency; sponsoring an academic study; and/or internal company/industry research reports etc. The Air Force chose to sponsor a member of their own organisation to deliver academic research under the auspices of a doctoral thesis, which allowed the problem to be examined from an academic perspective by somebody with a sound understanding of the organisational culture. The academic focus provided weight and gravity to the argument for change, which become necessary during the latter stages of the project. My 'insider status' as a military Officer also proved helpful during the semi-structured interviews with military pilots, but this may not be as necessary in less culturally complex organisations.

From a methodological perspective, there are many research techniques that will enable researchers to identify barriers and challenges impacting potential members and members of a non-traditional occupational group. Irrespective of the method used, the research must be positioned in a way that enables a deep and thorough understanding of any the barriers and challenges impacting personnel from the under-represented group. As a preferred data-gathering method, the outcomes of this research and the Air Force's ability to deliver HR interventions on the basis of that research offers strong support for semi-structured interviews as an empirical data-gathering method.

Semi structured interviews allowed the Air Force to capture the 'real' workplace experiences of women working in a highly masculinised field, on their own terms and in their own voice. The resulting data (particularly personal quotes) proved a powerful means of generating an organisational commitment to change through the later stages of the project; a finding that might be useful to organisations seeking a similar commitment to change. Quantitative methods such as surveys simply could not have capture the lived experiences in the same way as a dialogue-

driven approach that created the 'personal, empathic connections between the researcher and those being researched' (Reinharz, 1992).

In the case of this project, ascertaining women and girl's perceptions of the occupational group (supply factors) through focus groups also proved to be an effective means understanding supply-side barriers. However, a range of other methods may also provide helpful data in relation to perceptions, including surveys, interviews etc. Whatever the method, any data-sets resulting from the research stage of the project should be coded and analysed as a means of identifying gender-based barriers that impact the demographic-make-up of the occupational group. Once again, applying a feminist lens ensures that the data sets are viewed, coded and analysed in accordance with feminist principles.

A comprehensive strategy for reform, informed by research

Linking research outcomes (or knowledge) to a set of well-targeted initiatives to achieve practical outcomes provides the essential bridge between theory and practice, between research and effective reform. In the case of women pilots in the ADF, the interrogation of the ingrained and pervasive barriers suggested that the reform measures must entail a comprehensive, multi-faceted approach that targets the entire employment cycle from attraction to long-term retention. A piecemeal approach or approach only targeting one or two of the known barriers simply could not (and in the past, has not) facilitated the degree of change necessary to transform the highly gendered nature of the military aviation workplace.

This research suggests that a thorough and carefully managed approach is necessary to create the inclusive working contexts that will enable higher numbers of personnel to enter and succeed in non-traditional occupations within those contexts. As such, occupational feminism and applying the FOI model entails building an intervention strategy that is founded on solid research and accords with a feminist perspective. The model then entails delivering the interventions through a targeted change management and program delivery process of the organisation's choosing.

The model is deliberately non-prescriptive regarding how both the intervention strategy and change management processes are delivered, due to the wide variations likely to be found within different occupations, organisations and industries. That said, there are some key considerations built into both the intervention and change management elements, due to their criticality to successfully applying the framework. The means by which the Air Force addressed these aspects of the model is included in the following discussion, to demonstrate the model's application to a real organisational case study.

The model, supported by its application in the Air Force, shows that there are three key factors that must be considered during the intervention strategy's formation; establishing defined measures for success, attaining leadership and organisational commitment and resourcing the reform. Failing to consider or achieve any of these factors (which might also be considered preconditions for successful intervention) is likely to compromise the overall success of the reform intervention.

To measure outcomes of the intervention, there are many means by which diversity reform interventions might be judged 'successful'. The Air Force decided to measure success through two means; firstly, the application of numerical targets for women's overall representation and secondly, by ascertaining the degree of women pilot's improved experiences within the ADF workplace. Critical mass theory indicates that as a natural consequence of higher numbers, women will have improved training and workplace experiences.

To confirm this, Air Force leaders have committed to delving into women pilots' experiences more deeply, through a second series of semi-structured interviews in 2016, some four years after the intervention strategy commenced. The data and analysis from these interviews will offer insights into the tangible impact that the reform measures have had on the working lives of the women most impacted by any changes; both positive and perhaps negative. The outcomes of this second

stage of research will provide some excellent insights that may result in further refining the occupational feminism and how the Air Force delivers diversity programs into the future.

The next feature of the FOI model is garnering leadership and/or organisation commitment to the intervention. Attaining leadership commitment to organisational reform differs from initially selecting an occupation on which to focus the research. At the post-research intervention stage, the leadership commitment becomes essential to translating the research outcomes into organisational imperatives by leading and resourcing the change. Gardenswartz and Rowe observe that, in relation to progressing diversity initiatives, 'where the leadership of the organization goes, the rest of the organization will follow' (2009:39), further noting that grassroots (or bottom up) reform is rarely fruitful without strong leadership commitment.

There are many means by which leadership support might be garnered within organisations. In this sense, research findings themselves are ideally placed to help the organisation's leaders understand the imperative to change, particularly if the findings are as compelling as those found through this research. In the case of women pilots, the research outcomes challenged many of the 'myths' about women pilots and thus proved pivotal to generating organisational commitment to reform.

The final mandatory aspect of generating an intervention strategy is ensuring the reform is resourced, noting that interventions that are not adequately resourced have minimal chance to succeed (Kossek et al., 2006) and 'long term cultural change requires a significant commitment of resources and leadership' (Kossek et al., 2006:67). In most organisations, resourcing is likely to comprise personnel for the task as well as a budget to fund the various intervention activities; both were provided by the Air Force to deliver the suite of diversity outcomes detailed in chapter eight.

Organisations have many options for sourcing personnel to lead diversity reform, including; establishing a dedicated team to undertake diversity tasks (internal or external), building a 'diversity council' within the organisation to progress diversity initiatives (Gardenswartz & Rowe, 2009) or assigning diversity tasks to personnel within the organisation as an added workplace tasking. There are pros and cons to each of these methods; but due to the magnitude the task, the Air Force opted to build an internal team of motivated and empowered change agents within the organisation's personnel branch. This worked well in the Air Force but other organisations may find that alternative means of progressing diversity may be equally as efficacious.

Within the FOI model, the key component of delivering an intervention strategy is developing a series of HR activities (policy and practice) designed to generate positive change. Once again the model diagrammatically demonstrates the requirement to view any planned reform interventions through a feminist lens and in consideration of the research findings. Basing deliverables on tangible feminist research outcomes ensures that women's differing needs are placed at the centre of each reform activity and each intervention activity is enacted with sensitivity and consideration for how the activity may impact women's workplace experiences. Further, a comprehensive evidence-base detailing the barriers and challenges faced by women pilots, and interviewee's own insights as to how the problems might be fixed ensures that the interventions are well-informed and focused on the key issues as identified through the previous research.

Achieving effective reform outcomes will only be possible, however, if the design and implementation of any occupational feminist interventions draw upon a comprehensive knowledge base which itself is not preconditioned by the nature and values of either the specific occupation or the wider organisation within which it is situated. Establishing a sound theoretical foundation and exploring the comparative literature on non-traditional occupations was invaluable in helping to identify the range of issues that may need to be considered and the different lenses

that might be applied to both identifying the issues and developing strategies for their resolution.

Literature-based research confirmed the degree to which flying in all organisational contexts is a hyper-masculinised, unwelcoming and hostile non-traditional employment realm for women. Piloting, both military and civilian, was exposed through the literature as being a 'bastion of masculinity' (Mitchell et al., 2005:43) where men pilots actively 'stave off the threat of feminization' (Ashcraft, 2005:84). The literature also provided insights into the gendered nature of the military institution, where extreme manifestations of 'hegemonic masculinity' (Enloe, 1983; Hinojosa, 2010) serve to subjugate and 'other' (Barrett, 1996) anyone *different* to the dominant prototype warrior.

Equally critical is the ability to understand an organisation and an occupation from the inside out. The chosen research methodology was, and is, critical to this. Drawing on the experiences of women pilots across a range of different contexts proved an invaluable means of determining the nature and extent of the identified barriers and the degree to which they were context or occupation-specific. The multi-contextual approach enabled women to reflect on the cultural difference across different workplace contexts and share their ideas for improving the workplace culture on the basis of that exposure. That most women had experienced working or learning in at least two of the different aviation contexts (for example, general, military or commercial) was extremely helpful to understanding the degree to which the hegemony found in military aviation was due to the military context, rather than just the occupation of pilot more broadly.

Interviewing currently flying women pilots, future pilots and women who had left military flying to pursue civilian flying careers also proved instrumental in understanding barriers and challenges at different career stages, and how women at different life stages experience and reflect on the barriers. Only interviewing currently serving military pilots would have compromised the research outcomes,

particularly in understanding interviewee's rational for leaving and the barriers and challenges they faced trying to juggle different life stages (like parenting) with military flying.

It was the insights of former military pilots that lead to several different policies being revised in order to retain women for longer careers, especially at the point of having children. Interviewing civilian university students was also useful to developing attraction/recruitment strategies based around their concerns about joining the ADF. The Graduate Pilot Scheme, perhaps one of our team's most successful interventions, was designed purely on the basis of insights garnered from this group of interviewees.

The multi-contextual research approach also highlighted the degree to which women with past exposure to either aviation or the military experienced fewer gender-based challenges in military aviation. Women in this category were already adept at negotiating their gender through one of the layers of non-traditional employment; as such, they did not face the 'double assault' of having to adjust to both the military and aviation context. Women who commenced pilots' course with a firmly established and supportive friendship group, formed through previous training, also experienced fewer challenges, due to their in-built support network. This finding has ramifications for building programs for women's entry; not just for the military but for any organisation seeking to increase representation of women in non-traditional roles.

As an empirical method, the approach to interviewing, where women were asked to actively reflect on barriers through the different career stages of entry, training and the workplace was highly effective in drawing out the challenges that exist for ADF women pilots at every career stage. Asking interviewee's to describe their career journey afforded insights into a wide range of challenges at every career stage; there was simply no respite. Women pilots are required to 'fly solo' through

numerous 'rites of passage' that are dominated by highly gendered, male-dominated discourse, cultural norms and symbolism.

Women's minority status in this non-traditional context means that they face stressors far beyond those experienced by their men peers. From a cultural perspective, these include complex social negotiations, heightened visibility, an inability to 'fly below the radar' and being stereotyped into comfortable and familiar social roles.

Asking women interviewees how they 'negotiated their femininity' within these male-dominated contexts provided valuable information about women's strategies for 'surviving and thriving' and the relative success of these different approaches. The research shows the degree to which women must develop a 'façade' as a means of adapting and integrating into the dominant culture. To integrate into the masculine Defence context, women have been required to 'act like men and to strive to achieve the same career goals in the same fashion as men without the benefits men take for granted' (Agostino, 2000:78).

Women also have to manage complex negotiations of femininity (Bridges, 2005; Burton, 1996) without women peers, instructors, role models and mentors to guide their journey into highly masculinised training institutes and workplaces. Women able to enact masculinity either naturally or as a deliberate strategy experienced fewer barriers in training than their more feminine peers. This differs somewhat to other studies in civilian aviation, where more feminine pilots experienced the greatest acceptance (Davey, 2004).

Perhaps one of the most noteworthy lessons from the research approach, which again comes back to using a feminist approach, is the degree to which interviewee's trusted me and felt safe sharing their stories, sometimes for the first time. A feminist interviewing approach involves creating equal status with interviewees, removing any barriers between interviewer and interviewee and allowing

interviewee's to dictate the discourse (within the realms of a semi-structured format).

For military pilots who are so justifiably distrustful of 'the system' I believe the opportunity to share their stories, with a trusted and empathetic 'insider' (myself as a military Officer) was critical to exposing, quite brutally, the degree of cultural dysfunction within military aviation. My access to interviewees as both an organisational 'insider' and at the same time, objective academic, proved to be a valuable combination in terms of gaining interviewee trust. This may be another finding with application to other organisations seeking similar research outcomes.

Due to the high degree of trust, interviewees felt safe sharing their truths about being 'othered' in military flying through a variety of insidious means, including isolation, ritual humiliation, harassment, stalking, physical and verbal abuse and other forms of unacceptable treatment. These behaviours were designed to diminish, isolate, subjugate and destroy women's confidence; especially if they were more competent pilots than their men counterparts. These are not legacy cases from an ADF of the past; as through the course of this research and post the field-work phase of interviews, I have continued to be contacted by a number of recent pilot trainees seeking to share their negative training experiences.[1]

The degree to which women have sought to share their stories highlights three systemic issues within the ADF. These are: the organisation's previous inability to help women to feel 'safe' reporting or discussing incidents of unacceptable behaviour; the degree to which women in non-traditional occupations are not being heard within the organisation; and their need to share their experiences. This particular research outcome directly led to the development of systemic 'fixes', which includes developing women's networks, improving access to mentors and improved avenues for complaint.

[1] Events occurring after the field-work phase of this research have not been included in the data-set for this thesis due to ethical considerations.

Interviewee's personal insights and reflections, as garnered through the process of semi-structured interviews, have also stripped away the inaccurate cultural notion that women pilots, like their sisters in other military non-traditional roles, are 'fine' or indeed somehow advantaged by being women. This research has determined that the barriers and challenges faced by women pilots are borne from the masculine 'warrior' culture within the ADF and Air Force especially.

Interviewing women from different aviation contexts (including the Navy and Army) demonstrated that women pilots in the ADF experience cultural barriers pertaining to *both* the military and piloting. As such, military interviewees in this study experienced gender-based challenges far beyond those experienced by their civilian pilot colleagues. This, in part, explains women's much lower representation in ADF flying than in the civilian aviation sector.

The coding and analysis method used in this study comprised both a 'top down' approach (known codes and themes, as identified through the literature) and 'bottom up' approach (a grounded approach where the data determined the existence of codes and themes). This blended coding and analysis approach was ideal for the purposes of this research, in that the identified barriers and challenges could be compared and contrasted to those experienced in other non-traditional occupations.

There were some stark similarities across the barriers and challenges faced by women pilots to those experienced by women in other non-traditional roles. This finding enabled our team to draw on intervention strategies that have proven successful in increasing women's representation in other non-traditional fields (for example, the notion of experiential camps and targeted marketing strategies). At the same time, identifying those barriers and challenges unique to military aviation (and aviation more generally) also enabled our team to construct customised policy

and practice interventions that were focused purely mitigating the barriers within the military context.

Through coding, identifying, analysing and further unpacking the barriers faced by women pilots, the research highlighted an enduring issue facing the ADF and other organisations with a highly gender-skewed workforce; the abject lack of consideration for women's abilities, differences and career-needs through every stage of the career continuum. The analysis of data determined that there was much to be done, across every career stage, to optimise women's opportunities to enter, succeed and progress within ADF aviation contexts.

In the past, like many other military organisations, the ADF's approach to integrating women into non-traditional employment roles has entailed 'opening the door' and allowing, sometimes grudgingly, women to enter. Until quite recently, there has been minimal (if any) efforts to accommodate women's differences; young women joining the ADF as pilots have been expected to adapt to the highly masculinised ADF flying context with no specific support for or consideration of their minority status within a male-dominated working context.

When theorising occupational segregation by gender, theorists tend to align themselves with either supply-side (choice) or (demand-side (power) based explanations (Anker, 1997; Bagilhole, 2002; Padavic & Reskin, 2002). Through examining the literature addressing the theoretical explanations for enduring occupational segregation by gender which exists 'in every region, at all economic development levels, under all political systems and in diverse religions' (Anker, 1997:315), it became apparent that supply-side and demand-side explanations may have equal applicability to explaining women's low representation in military flying.

As such, when designing a research methodology, it was essential that both supply (focus groups and interviews) and demand (interviews) considerations were captured and analysed. This approach proved invaluable to building an intervention

model (FOI) and strategy that encompassed barriers at both ends of the explanation spectrum.

In building a framework for linking research outcomes to the development of targeted human resource development interventions, the Air Force has employed an approach which is distinctly 'feminist' in application. Feminism and Air Force service may seem strange bedfellows, due to the degree to which military service is steeped in 'hegemonic masculinity' (Kronsell, 2005; Zeigler & Gunderson, 2005; Hinojosa, 2010). However, establishing the need for a feminist approach and operationalising that approach through building and testing the FOI model, has proven to be a valuable catalyst for change, even within a deeply masculinised organisation like the military. It has been rewarding to see my organisation so willingly embrace aspects of feminist ideology in the application of this project, and in doing so, significantly shift the organisational culture to be more inclusive of women and actively valuing their contribution.

Focusing the newly developed diversity model on a military context has strengthened the model's potential for wider application; noting the deeply gendered nature of an institution, where extreme manifestations of hegemony serve to subjugate and 'other' (Barrett, 1996) anyone *different* to the dominant prototype warrior. The multi-faceted and interconnected layers of extreme masculinity prevalent in military aviation means that this was a very challenging environment in which to attempt to build diversity. Thus, any reform interventions successful in that environment are highly likely to be applicable in less challenging organisational and occupational contexts.

The successful application of this approach in occupation with extremely low numbers of women and in such a highly masculinised and challenging context, suggests that the approach used by the Air Force has far broader application than just military pilots. To this end, the organisation intends testing the FOI model on a range of other non-traditional military occupations, including firefighters and

technical trades. The model, once tested in other contexts and on other occupational groups, may also have some applicability to a range of diversity initiatives beyond non-traditional occupations.

Situating the thesis

The most valuable contribution of the thesis to extant knowledge is, I believe, the development of a new model for improving diversity within workplaces through linking feminist occupationally-focused research with targeted action that addresses both supply and demand explanations for women's low representation. The concept of occupational feminism, as a model for reform, demonstrates a practically orientated means of using sociological research outcomes to underpin targeted HRD responses within organisations. Occupational feminism and FOI, as paradigms for change, have the potential to fundamentally change the way organisations attract, recruit, select, train and retain women in non-traditional occupations. The occupational focus, feminist lens and research foundation are attributes which differentiate the model from other diversity models already in place.

The thesis also makes a number of more specific contributions. It contributes Australian military women pilots as a 'case' to the literature examining: women in the military; women pilots; women in non-traditional roles and women in non-traditional roles within the military. Adding military women's voices to the literature about flying as a field of non-traditional employment was a stated goal at the outset of this project.

Piloting, as a field of non-traditional employment has been neglected by past researchers, for reasons highlighted in Chapter Two of this thesis. Academic studies focused on gender and flying have only rarely featured the voices of military women. As such, the population's views on military women pilot's experiences have been formulated through propaganda and marketing mechanisms which portray women in an overwhelmingly positive light. Military women pilots'

biographies, however, tell a very different story regarding their degree of acceptance within military aviation workplaces (Flinn, 1997; Spears, 1998; Cummings, 1999).

Unexpected Turbulence will raise further awareness, both within and external to academia, about the barriers and challenges faced by women entering the deeply masculinised culture of military aviation. Military women's struggles will now be known to others outside those experiencing them. This research has made 'women's invisible experiences visible' (Gray, 2007:225); a key goal of feminist research. This new visibility has already had a profound impact on our leaders' commitment to change.

A range of theories pertaining to the topic of women in non-traditional employment and gendered organisations have been applied and tested through this research. The degree to which different aspects of research have informed and enhanced the contribution of this research is detailed within each chapter and will not be reiterated here. However, one of the more noteworthy theoretical outcomes of this work pertains to Kanter's (1977) theory on tokens and 'perceptual phenomena'. Kanter's research, while now over forty years old, remains an authoritative and oft-used theory for researchers examining the organisational and group dynamics of minority workers within organisations. Kanter's theory, beyond being an extremely valuable window for looking at the cultural barriers and challenges faced by women pilots, has been extended through this research.

Kanter observes that women in non-traditional roles may experience 'role entrapment', which is a form of assimilation involving women being categorised into gender-appropriate 'female caricature roles' and treated accordingly (Kanter, 1977a). While there was ample evidence of a number of Kanter's (1977) female caricatured roles; mother, seductress and iron maiden, another 'comfortable' gender-appropriate social role emerged through this research. This role emanated from the ultimate form of 'assimilation'; which entails marrying into the

occupational group. I have coined the term 'mob-wife' as an abbreviated form of 'married to the mob' to explain this new role.

While there was ample evidence of this role in relation to pilots, both military and civilian, this finding needs to be tested within other occupational groups to ascertain any prevalence beyond the world of flying. It is with some excitement that I note that our team's early work on women fire-fighters has replicated the 'mob wife' finding in this different occupational group, although this is still within a military organisational construct.

The research has also extended the understanding of how women negotiate their femininity within non-traditional contexts and the strategies they employ to survive and thrive in that context. Women pilot's responses to the dominant culture have been categorised in this thesis as: emulation, integration, accommodation, isolation, alienation and self-actualisation; which presents a fresh approach to understanding gender negotiations in highly masculinised workplaces. Locating these different strategies contributes to theoretical understanding of the means by which women negotiate their femininity within male-dominated workplaces, and the advantages and disadvantages of adopting the different strategies. Again, these findings are preliminary and would benefit from further exploration and verification through other research.

Limitations and recommendations for future research

It is important to recognise, however, that this study is part of a much wider literature base. The necessity of confining the research scope has resulted in some limitations that were either accepted in its initial conception or have become evident as the study progressed. Limitations that were known from the outset have already been detailed in Chapter One. Those that have emerged during the study are fundamental to both placing its outcomes in proper perspective and identifying areas in which future research might be undertaken to further develop the literature addressing non-traditional occupations.

Perhaps the most visible limitation of this research pertains to the applicability of occupational feminism as a concept and the applied FOI model to different occupational groups within different organisations. To feel truly confident in the concept of occupational feminism and the accompanying FOI model's ability to bring about cultural change, it needs to be applied and tested in other organisations and industries. This is an endeavour I would very much like to undertake myself and fortunately, I have been recently approached by another highly masculinised industry to undertake a similar research and intervention project in that domain. This presents a wonderful opportunity to test the premise of occupational feminism, using another, quite different, occupational 'case'; the results of which may lead to further refinement to the FOI model.

To achieve the project aim of delivering a barrier mitigation strategy targeting the full suite of career barriers impacting women pilots, it was necessary to examine the entire spectrum of women's experiences, from the decision to fly through to the reasons for resignation from the ADF. One of the disadvantages of examining barriers and challenges at *every* career stage is that no one career stage could be afforded a truly deep analysis. A 'broad-brush' approach has enabled each area to be covered, but only at a 'macro' level of exploration. While this was necessary to develop an intervention strategy on the basis of the FOI model, any one of the results and analysis chapters warrants a thesis unto itself; which would allow far more depth applied to each area of discussion. Each of the areas of barriers identified here offers a starting point for more detailed work on any of the issues raised through the various results chapters.

A qualitative approach to gathering data was initially deemed necessary to achieving the research aims; especially in relation to women describing their journeys into and through piloting careers. A qualitative data-based approach is 'appealing to researchers who are keen to capture directly the lived experience of people' (Punch, 2005:58). A disadvantage of qualitative data is the degree to which the data-set might be replicated by subsequent researchers, noting the extent to

which the researcher's subjectivity might influence key decisions about how the data is coded and used (Punch, 2005). While I have taken measures to ensure the integrity of coding and analysis, as detailed in Chapter Three, my own subjectivity cannot be fully eliminated and nor should it be, as researcher subjectivity is welcomed (and even encouraged) within some feminist research (Reinharz, 1992).

Further research, perhaps using an alternative methodology, might provide some assurances about the findings from this research. I suggest that the research findings explored through U*nexpected Turbulence* could be further tested and extended through alternative methodological approaches, including ethnography, quantitative survey, self-report inventory or more targeted individual case studies (for example, following individual women through the early career stages of entry and training). An auto-ethnographic approach would also provide valuable insights, should researchers be capable of being selected as ADF pilots. A feminist academic colleague, Stacie Furia, used this approach to great effect in capturing the experiences of women undergoing Army training in the United States (Furia, 2010), as she became part of the studied group.

Another limitation of this study is that I, quite purposefully, elected to only consider the experiences of *women* pilots in relation to the barriers and challenges they have encountered in the ADF piloting workplace. I felt that it was essential to both the aims of this research and the underpinning feminist epistemology; *women's* voices, perceptions and experiences, as they had experienced them, drove the research findings and outcomes. Ely, while limiting her own research on gender identity to women's perspectives, notes that 'it is important to assess men's views as well' (1995:628).

I agree with Ely's view, and while men pilot's perceptions of women pilots have been captured through previous studies (eg. Mills, 1998; Davey & Davidson, 2000; Ashcraft, 2005; Mitchell et al., 2005; Kristovics et al., 2006), these rarely feature a military pilot perspective. Military men pilots' perceptions of their women

colleagues would add a further dimension to research of this nature and perhaps offer further insights regarding how barriers and challenges might be mitigated.

Another finding from this research is that women in piloting roles within the Air Force face greater barriers than their sisters working as pilots in both the Navy and Army. I have hypothesised that this variation in Service culture pertains to the divergence between 'women warriors' versus women in roles that are perceived as 'supporting'. This theme warrants deeper consideration in relation to women's treatment in warrior roles versus non-warrior roles within a military context.

Research of this nature may be especially timely as more countries, including Australia, are removing existing restrictions from women in frontline combat positions. There may be deeper cultural implications of this finding that extend beyond the military; for example, have Australian women's infiltration into so many spaces that were once the sole domain of men led to a 'battening down the hatches' by men in those few areas where women are yet to enter?

A way of 'testing' if this finding is more broadly applicable might be to gauge the workplace experiences of women working in supporting roles versus 'operational' roles in other deeply masculinised workplaces. One example might be examining experiences of women working in clerical roles on a mining site versus women operating the trucks or in technical roles. The finding pertaining to women in roles that are 'warrior' versus 'supporting' invites further exploration within a military construct; possibly through comparing the experiences of women in other military supporting roles versus those working in more non-traditional spheres. Studies such as this would be helpful to generating an enriched understanding of what the Chief of the Air Force, Air Marshal Geoff Brown, describes as being a 'bi-polar' Air Force; where different personnel have completely contrasting experiences within the same organisational construct.

Also worthwhile might be capturing the experiences of military men working in roles that are non-traditional for their gender, as men in nursing, allied health, clerical and catering occupations are likely to encounter gender-based challenges that may be similar or quite different to those identified through this thesis. Another question might be whether military men in non-traditional roles, due to the overarching warrior construct, might experience reduced or possibly enhanced gender-based barriers as compared to their civilian colleagues in highly feminised fields. For example, does the 'manly' nature of the military ameliorate or increase the known gender-based barriers faced by men working in highly feminised roles such as nursing (Cross & Bagilhole, 2002; Simpson, 2005)? I would urge future researchers examining other non-traditional occupations to at least consider the inclusion of military workers as research participants, where access and permissions are allowed.

Beyond their own struggles, some interviewees spoke, at length, about the barriers and challenges faced by men pilots who were unable or perhaps unwilling to assimilate with the larger group of pilots. These may be men who perform masculinity in a manner differently to the expected 'norm', choose not to participate in ritualistic 'male bonding' activities or, heaven forbid, don't drink alcohol.

These non-stereotypical men may face many of the barriers identified through this thesis through all stages of the pilot selection, training and subsequent career stages. There is some evidence from this study to suggest that men unable to perform masculinity in the expected manner may suffer even worse consequences than women, especially through flying training where group acceptance may be essential to survival. Men's experiences through other highly masculinised military occupations (for example, infantry soldiers) might also be another rich field of inquiry addressing gender negotiations in the military workplace.

The research field of 'women in non-traditional roles within the military' more generally, is one that I hope will continue to garner the interest of other researchers; especially as increasing numbers of women enter frontline combat roles that were once exclusively sanctioned for men. This research project demonstrates the degree to which the military provides a theoretically rich, complex and socially significant organisational context for studies of this type. This is especially true in relation to research addressing of women (and indeed men) working in non-traditional roles; the overarching hegemony of the military organisation provides an intriguing dimension to research pertaining to gender in the workplace.

Conclusions

The research and work behind the production of *Unexpected Turbulence* has had a truly profound impact on my personal development as a researcher, military Officer, feminist and advocate. The correlation between the research and my professional role has enhanced aspects of my work and study quite substantially and resulted in cultural change within the Air Force.

The time it has taken to deliver this thesis, while sometimes frustrating to my family and friends, has actually proven quite helpful to capturing the latter aspects of the research journey. The later stages have entailed the delivery of initiatives conceived and developed through the earlier research stages; much of which has been captured through the development of Chapter Eight. I am hopeful that this 'action' element and the development of FOI as a model for change, has demonstrated how the research outcomes can directly translate into organisational imperatives for change.

Bringing about positive change for women is a key goal of all forms of feminism; and I am confident that this goal has been achieved through the work detailed here. Before commencing this project I was somewhat naive regarding what military life was like for women working in non-traditional occupations within the wider defence construct. This research has opened my eyes to the challenges faced by

some of my women peers and this has impacted me at both a personal and professional level. Based on the leadership commitment that I have seen over the past few years of working in the reform space, I am quietly optimistic that we are entering a new age for diversity in the ADF.

Our leaders are seeking to build a diverse and dynamic organisation where difference is accepted and welcomed and the varying needs of workers are actively supported through targeted interventions. It has been my great pleasure to support their intent by leading parts of the ADF's cultural reform agenda. The Air Force's quest to build a more diverse organisation is still in the embryonic stages. However, in time, and with much further work, we may build an ADF where valuing 'sameness' will become secondary to an inclusive organisation that actively capitalises on *difference* and the known benefits that diversity brings to organisations.

For the women most impacted by the research outcomes, pilots in the ADF, this research has resulted in tangible outcomes that have positively influenced their willingness to remain in military aviation careers.

> *… after a while it becomes a bit tiresome when you are dealing with it for your whole career, you are like, I remember getting to one point and going it's not worth it. I am so sick of fighting for just doing this job I don't want to do this anymore.* ***(Bianca, Air Force pilot)***

I am optimistic that the views of women like Bianca are a legacy from the past; in an Air Force that had no understanding of the cultural and structural barriers and challenges faced every day by women working in non-traditional fields. Ironically, it is strong, resilient, and capable women, like those who succeed in military aviation against all odds, that the ADF needs in senior positions, as commanders, supervisors, role models, mentors and decision-makers. Until this research, women pilots tended not stay in the organisation for long enough to become leaders of

influence and thus the cycle has continued. In removing or mitigating the barriers across all career stages, the Air Force has created an environment and workplace culture that women may be reluctant to leave.

If there is strength in diversity, recent cultural reforms within the ADF and outcomes of this research project can only lead to further positive changes that will enhance the ADF’s capability both now and into the future. Occupational feminism, the FOI model and its continued application to other non-traditional occupations and minority groups will be pivotal to these ongoing changes. Because of these ongoing changes, and the organisational commitment to reform, I am hopeful that should either of my own daughters decide to join the ADF as a pilot or in another non-traditional role, their experiences will be vastly different to the stories shared through this thesis.

Inspired by (or arguably in spite of!) my focus on pilots over the past few years, my twelve year old daughter Maya desperately wants to become a fighter pilot in the Air Force. With some lingering reservations and a hefty dose of faith, I find myself actively encouraging her dream.

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