Shaping the 'Right Stuff': Gender, Technology and the Cultures of Aviation
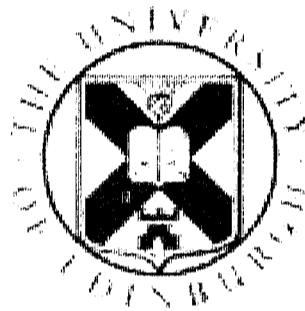
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Declaration

I declare that this thesis has been completed by myself and that, except where indicated to the contrary, this research is entirely my own.

Sarah L Glover

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Abstract

This thesis is an exploratory study into constructions of gender within professional aviation, in order to further understand the continued male dominance of this and other areas of work. It is a unique study, which contributes to understandings of gender identities, gender symbols and roles in the work place.

This research involved interviewing and observing forty-nine pilots in the UK; twenty-eight of which were in the British Royal Air Force and twenty-one were in various civil airlines and training colleges. The data was then analysed in terms of gender symbols, gender identities and gender structures, the focus being mainly on the first two aspects. The experiences of male and female pilots were compared as well as the experiences of military and civil pilots.

The notion of the 'right stuff' was used in this thesis to denote some aspects of the roles that have been created for the professional pilot to fulfil through working practices and cultural images. It is a notion that embodies various aspects of hegemonic masculinity. Images associated with aviation influence the process of becoming a pilot and are inherent to the cultures of aviation. The 'right stuff' includes the risks and pleasures of flying, which are part of aviation's attraction for many pilots. Civil and military pilots obtain different pleasures from flying, even though their jobs can be quite similar.

The working practices within aviation create guidelines of behaviour for individual pilots to fulfil. In effect a professional pilot role is created through interactions between individual pilots and the institutions of aviation. Both men and women have different ways of fitting into this role, and there are conflicts between individual and collective gender identities. Women pilots have to balance demonstrating masculinities at work and then fulfilling more feminine expectations outside of work, and sometimes even in the workplace.

This thesis goes some way towards understanding gender within aviation and other male dominated occupations. Professional pilots perform gender identities, which are shaped by work cultures, images, role expectations and individual agency. This research demonstrated that gender in the workplace is both dynamic and stable; maintaining the male dominance of an occupation whilst also adapting to increased women entering an occupation.

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List of Abbreviations

ALM	Air Load Master
APTL	Airline Transport Pilots' Licence
ATA	Air Transport Auxiliary
ATC	Air Training Corps
ATT	Advanced Technical Training
BCPL	Basic Commercial Pilots' Licence
BFT	Basic Flight Training
CAA	Civil Aviation Authority
CPL	Commercial Pilots' Licence
CRM	Crew Resource Management
DHFS	Defence Helicopter Flying School
IOT	Initial Officer Training
JEFT	Joint Elementary Flight Training
MELIN	Multi Engine Lead In
MEPT	Multi Engine Pilot Training
NCO	Non Commissioned Officer
OASC	Officer and Aircrew Selection Centre
OCU	Operational Conversion Unit
PPL	Private Pilots' Licence
RAF	Royal Air Force
UAS	University Air Squadron
USAF	United States Air Force
WASPs	Women Airforce Service Pilots

Chapter 1

Introduction

OVERVIEW

It has long been recognised that certain jobs are seen as women's work and certain jobs are seen as men's work. Such sex typing of jobs is nothing new (Cockburn 1985; Crompton and Sanderson 1990). However this sexual division of labour is dynamic and the exact nature of these divisions has changed over time. Powerful occupations associated with technology have often been male dominated (Cockburn 1985; Henwood 1993; Wajcman 1991). Professional aviation is one such occupation. This research explores the construction and production of gender in professional aviation, with a view to understanding the continued male dominance of this occupation. Through interviews and observation of forty-nine professional pilots in the UK - twenty-eight of which were in the British Royal Air Force (RAF) and twenty-one were in various civil airlines and training colleges - this research contributes to our understanding of why certain occupations remain male dominated even when women are allowed to enter that occupation. [1]

As far as I am aware this research is empirically unique; at least in Britain no one else has attempted a sociological study of military and civil pilots. Why do research on pilots? You do not often see female pilots in an airport or hear them giving announcements from the flight deck of an aircraft. This very absence from the public eye makes the female pilots that you do see or hear very conspicuous. When thinking about women in male dominated occupations I found it intriguing that very few people have attempted to study women in professional aviation. The research that has been undertaken has tended to be from a historical point of view (e.g. Cadogan 1992; Hodgson 1996; Lomax 1986). In addition, as a child my favourite

film for many years was 'Top Gun'. I found the popular images of flying exciting and attractive, but I never considered flying as a career option. It is still only a minority of women that enter flying and the question of why some women enter flying and so many do not led me to this research.

This research started with a small preliminary study of three women airline pilots - conducted in the summer of 1997 - which explored their experiences and motivations to enter this occupation. From this preliminary study several areas for further investigation were highlighted, including, the cultures of aviation, particularly those in professional aviation, pilot roles and identities, notions of the 'right stuff' and the thrills of flying. All these areas where further explored in the wider research with a focus on understanding the production of gender within aviation. A further forty-six professional pilot interviews - with some observation - and an additional twelve interviews with other RAF personnel were then conducted between March and November 1998. Most of the RAF pilot interviews and observation was completed in the first eight weeks, with the majority of airline pilot interviews being conducted in the following months. Although this research started out with initial questions and aims these evolved over the course of the data collection period to focus particularly on gender symbols in aviation, the roles of the pilot and how individuals fit in with these roles and collective constructions of gender.

Examining identities is important when attempting to understand male dominated work. Hence this study focuses on the individual identities of pilots and how their professional identities are shaped. Individual identities are constructed and performed within the framework of collective identities. Collective identities provide guidelines to which individuals can perform and display their various individual identities. However collective identities encompass more than just identity; structures and symbols also shape them. Here is where the usage of the notion of roles can be useful. Situational roles allow us to move beyond examining identities alone, and encompass more than just identity. They are linked with

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[1] Further details of the research design and methodology can be found in Chapter 3, whilst details of the pilots interviewed can be found in Appendix B in the form of brief individual profiles.

structures and symbols. Hence individual identities, structures and symbols all contribute to the shaping of situational roles. The interaction between structures, symbols and identities creates a framework within which various situational roles are performed. The degree to which situational roles are adhered to by individuals can also vary, and this is where changes in roles can occur. As we can see, situational roles are flexible, subject to individual agency and vary according to the context; namely the are 'performed' by individuals in various ways depending on the situation.

During the course of this study, particularly from the interviews, it emerged that professional pilot roles and other roles exist within aviation, which individual pilots have to conform to in order to succeed in their occupation. These roles embody various conceptions of gender and allow for the continued production of certain types of gender within aviation, for instance hegemonic masculinity. Thus this research explores the construction of these professional pilot roles, which are also part of the work cultures that exist within aviation. This thesis highlights how the concept of the role can still be a useful tool - especially when considering Harding's gender triad - even though it has become unfashionable within current sociological thinking.

In understanding constructions of gender this thesis draws on Sandra Harding's (1986) triad of gender symbolism, gender structures and gender identities. These three aspects of gender interact, to varying degrees depending on the situation, to construct situational roles. The professional pilot roles, for example, are shaped through the gender symbolism associated with aviation, such as that clearly demonstrated in the images of aviation. These roles are also constructed through gender structures, such as those that exist in aviation organisations. Finally the professional pilot roles are also shaped by the individual gender identities of pilots themselves. All these three aspects of gender interact to create various professional pilot roles that change with time and context. Using the concept of roles allows for more clarity when combined with Sandra Harding's gender triad than using the notion of collective identities, since identities are also part of the triad. Roles are a framework within which the various aspects of gender are constructed.

Within this theoretical framework this research forms an exploratory investigation of gender within professional aviation and as such highlights many areas that are worth considering for future research. There are various reasons for the exploratory nature of this study, which mainly stem from the research methodology. First, the research sample includes many different types of pilot, as well as comparing military and civil aviation. In the RAF, multi-engine, helicopter and fast jet pilots were interviewed - and a few observed - the depth of interviews depending on the level of access granted. In civil aviation problems with gaining access to major airlines meant civil pilots from a wide variety of backgrounds where interviewed. The breadth and variety of the data sample meant many areas of professional aviation could be explored but also meant some depth of investigation was lost. Second, the problems of gaining access to one or two large aviation organisations and the practicalities of observing pilots at work meant that a wider variety of pilots were interviewed than originally anticipated. Third, the focus of the research changed over the course of the data collection as new and predominant areas of interest were discovered, for instance the importance of images to gender symbolism in aviation. Hence in the initial interviews some areas of investigation were not covered in such depth as with the later interviews. These factors have all contributed this research being very broad and largely exploratory.

This chapter first explores how this research relates to the wider context of women in male dominated occupations and to the construction of gender. Second the extent of the male dominance of aviation, particularly in Britain, is outlined. Next the research aims and objectives of this study are explained, followed by a more detailed account of the scope and areas of contribution of this research. Finally this chapter concludes with a brief outline of the contents of this thesis.

STUDIES ON GENDER AND TECHNOLOGY

Sandra Harding's (1986) view of gender - as constructed in terms of gender symbolism, gender structure and individual gender identities - forms the basis of how

gender is approached in this thesis. Gender on one hand is about performance (West and Zimmerman 1991), with people performing (or not) to expected norms. It is constructed through social relations, structures, images and individual choices. Yet we must remember the plurality of lived genders and the many forms of masculinity, and femininity, including those associated with technologies. However there are dominant masculinities and femininities. Bob Connell's (1987, 1995) notion of hegemonic masculinity is useful here. This is a dominant masculinity, which is always constructed in relation to various subordinated masculinities, as well as femininities (1987: 183). On the other hand Connell identifies 'emphasized' femininity, promoting women as 'objects of desire', and focusing on female sexuality (Connell 1987: 184-70). These extremes give individuals ideal roles to perform to.

Studies on the usage of technology have demonstrated that gender can affect how technologies are used (e.g. Berg 1996; Cockburn 1985; Lie and Sørenson 1996; Wajcman 1991). Historically many technologies have been appropriated as male domains (Cockburn 1985: 15-43). Technologies are more than just artefacts, or physical objects; technology also consists of "the knowledge that goes into creating techniques" (Faulkner and Arnold 1985: 21) and social interactions (MacKenzie and Wajcman 1985). Technology is useless and meaningless without the knowledge and skills to use and create it, and without the sociotechnical systems or networks in which it is used and designed (Hughes 1986; Latour 1983). It is also redefined through usage (Berg 1996; Lie and Sorensen 1996). We can refer to a 'seamless web' of interactions, or sociotechnical processes, within which technologies are located and shaped (Pinch and Bijker 1984; Hughes 1986).

Feminist studies of technology have shown how in male dominated occupations, such as engineering, gender is constructed through working practices (e.g. Cockburn 1983; Henwood 1993, 1994; Hacker 1989, 1990). Other work has demonstrated how technologies can be gendered through design processes (e.g. Cockburn and Furst-Dilic 1994; Weber 1997). Clearly some technologies are associated with men and masculinities, and some with women and femininities. Aircraft are technologies which are almost exclusively associated with men, although from the time aircraft

were invented there have been some women flying them (see Cadogan 1992; Corn 1983; Hodgson 1996; Lomax 1986; Myles 1981; Wohl 1994). This research concentrates on how aviation technologies have been associated with men and hegemonic masculinity, through both work practices and the symbolic meanings attributed to these technologies. It is partly through this association that aviation has remained male dominated.

WOMEN IN AVIATION

Flying has conventionally been a male dominated occupation and interest. Since the first aircraft were developed men have dominated aeronautical technology, both as designers and aviators.[2] However female pilots have made valuable contributions to the development of aviation technologies and continually demonstrated that women can fly equally well as men can (Cadogan 1992; Corn 1983; Lomax 1986).

Today female pilots are a growing minority. Worldwide it is estimated that there are 80,000 airline pilots, with women composing approximately 5 per cent of that figure (ISWAP 1997). In the UK during 1997 over 29,000 individuals held private pilot's licences, with 6 per cent being women, compared to nearly 13,000 professional licence holders, with only 2.4 per cent being female (CAA 1997).[3]

There are even fewer female military pilots. In 1999 only 9.4 per cent of the RAF's military personnel were women (Office for National Statistics 2000: 17), with very few being pilots. For instance in 1998 only 1.4 per cent of pilots in the British Royal Air Force (RAF) were female, compared to 3.1% of navigators and 1.6% of rear

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[2] Men dominated attempts to develop aviation technology prior to the Wright brothers' success. The other main flying activity, hot air ballooning, was also dominated by men (Gibbs-Smith 1970; Wohl 1994).

[3] These Civil Aviation Authority (CAA) figures only indicate the numbers of registered licence holders and do not indicate whether those licence holders are currently employed or not. But for professional pilots who have, as a minimum, annual health and knowledge reviews most of this figure will most likely be currently employed.

aircrew.[4] However 98% of jobs in the RAF are open to women (Muir 1998). In 1989 the RAF allowed women to train as pilots and navigators for the first time but they could only fly training and non-combatant aircraft, effectively only transport aircraft. However in 1991 female aircrew were allowed to fly all types of aircraft in the RAF (Ministry of Defence 1994: 11). With such an open equal opportunities employment policy one might expect that more women would have entered occupations, such as pilot and navigator, in the RAF, however there are still very few women in these jobs. This begs the question how these occupations are remaining so predominantly male; thus I will outline how this research addresses this question.

RESEARCH OBJECTIVES

The main aim of this research was to understand the production of gender within professional aviation, which partially addresses the question of why aviation has remained male dominated. By the production of gender I mean understanding how all the components of gender (i.e. symbols, structures and identities) are constructed in both the public and private lives of professional pilots. However not all these aspects of gender have been considered equally in this thesis. From the findings of the preliminary study I developed three objectives in order to address this aim:

1. To identify some of the cultures of aviation and the various aspects of gender within those cultures.

2. To understand the role of individual pilots in constructing gender within those cultures.

3. To make this research of general use by comparing it with previous research on gender at work, technology and gender, other male dominated occupations, and gender in the military.

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[4] Data supplied by the RAF. See Glossary for details of these jobs.

THE SCOPE OF THIS STUDY

As explained previously this work is very much an exploratory study into aviation. There are many different flying cultures based on organisational and training structures, types of aircraft and particular specialisations. Military aviation has quite a different culture from civil aviation, and these cultures are both distinct from private aviation. This research concentrates on professional aviation because I felt this area of flying would reveal most about women in male dominated areas of work. Hence I have not examined every form of flying but have explored several. In comparing military and civil aviation the aim was to understand two apparently very different areas of flying. In comparing male and female pilots the aim was also to gain as wide an understanding of gender within professional aviation as possible.

I have used and developed the notion of the 'right stuff' to convey the various aptitudes and characteristics that are thought necessary for a pilot. The 'right stuff' is a social construct that can vary greatly according to context. In this thesis I highlight various aspects of the 'right stuff' which together construct nominal roles which professional pilots have to try to emulate, although in no way does this thesis cover every aspect of the 'right stuff' that may exist.

Several specific research questions have been explored in order to address the research aims and objectives of this study. These questions were formulated whilst reviewing the literatures on gender, technology, work and male dominated occupations.

1. What is the 'right stuff'?
2. What are the cultures of aviation and how is gender constructed within those cultures?
3. Do pilots find flying a 'thrill' and why?
4. How do individual pilots affect constructions of gender within aviation?

From reading aviation literatures and the preliminary interviews, it became clear that defined roles exist for the pilot to portray. The term the 'right stuff' is commonly used within aviation, in literature and by pilots, to refer to the qualities and traits a pilot is expected to possess and portray. Hence the first question arose from these initial investigations. The second question developed from my exposure to aviation literature, culture and pilots during the preliminary research, since it became clear from these sources that different cultures exist within different types of flying. This made me wonder what part gender plays in shaping these different cultures, and conversely how these cultures influence the production of gender within aviation. Personally I enjoy flying and find it fun, similarly the preliminary study revealed how important the fun and enjoyment of flying is for pilots. Hence the third question which considers the thrills of flying for pilots. Finally individuals influence group conceptions of gender, so it is logical to question to what extent individual pilots influence constructions of gender in aviation.

Though addressing these questions this research contributes in several ways to our existing knowledge. First this research is empirically unique, and therefore specifically furthers our understanding of gender in aviation and of the experiences of both male and female pilots in differing work settings. In the wider context, this research adds to the growing literature on women and gender in male dominated occupations. It also furthers our understanding of the relationship between gender and technology, especially how symbolically gendered meanings associated with technologies can contribute to those technologies being viewed as male and masculine, and thus the continued low entry rates of women into certain technological occupations. This research demonstrates how work practices can act to exclude, or at least make it difficult for, women in certain areas of work, and shows the influence work cultures can have on the construction of gender. Finally it demonstrates that role theory can still be a useful sociological tool, which in my view is a more encompassing concept than collective identities.

OUTLINE OF THESIS

This thesis aims to understand the construction and production of gender within professional aviation. How the chapters of this thesis address this aim is detailed below.

Chapter 2 gives an overview of what is meant by the terms gender and technology in this research, especially in relation to masculinities. The chapter then discusses how even though role theory has become unfashionable within sociology in recent years, it can still be a useful theoretical and analytical tool. Finally it discusses current issues within feminism regarding women in the workplace, particularly male dominated occupations.

Chapter 3 describes the research design and methodology used in this study. It outlines a preliminary study of women airline pilots that I undertook and the problems encountered during the fieldwork for the main study. Finally the chapter discusses the role of the researcher in any social research situation and how this has affected my own approach to this project.

Chapter 4 addresses the question of what is the 'right stuff', by investigating the images surrounding the pilot, and the recruitment and selection processes used by aviation organisations to select potential pilots. These two aspects of the 'right stuff' demonstrate how gender symbolism and structures can influence gender identities. This chapter then explores how pilots perceive the 'right stuff' and how this influences their own, and collective, gender and pilot identities. All these factors form a process that contributes to the construction of a form of hegemonic masculinity within aviation and the continued male dominance of professional aviation. In understanding this process we can see how similar processes may exist in other occupations which exclude certain groups.

Chapter 5 explores why pilots find flying a 'thrill', through investigating how pilots perceive the pleasures and risks of aviation. The chapter examines pilots' relations

with aviation technology and how those relations contribute to the construction of gender in aviation. To understand why flying is so attractive and apparently so much fun for pilots the chapter first discusses pilot perceptions of risk and expert opinions on the risks of flying. It then examines the pleasures of flying and the sensual relationship between the pilot and aircraft. In understanding the relationship between the pilot and aviation technology we can see how gender can be related to the usage of a technology.

Chapter 6 examines the socialisation processes pilots participate in during pilot training. In this way it further addresses the question of what is the 'right stuff' but also demonstrates how individuals participate in the shaping of collective, and individual, pilot and gender identities within aviation. This chapter primarily addresses the question of how work cultures can construct gender within aviation, by examining pilot training, the role of the instructor, and the formal and informal rules pilots learn to adhere to succeed in their professional career. Thus it furthers our understanding of the role of work cultures in constructing dominant notions of gender.

Chapter 7 explores the extent to which individuals adapt their behaviour and attitudes to fit in with the various work cultures in aviation. It also explores the problems and challenges posed for individual pilots trying to fit in with collective gender and pilot identities and fulfil the professional pilot role, especially the problems for women in such masculine work environments. This chapter considers how individuals can affect conceptions of gender in aviation, by investigating the interaction between individual gender identities and collective gender identities. Chapters 6 and 7 both contribute to our understanding of how identities can be changed but also how work practices can contribute to the sex segregation amongst occupations.

Chapter 8 draws on the knowledge gained through the preceding chapters to suggest areas for further investigation and work, and also to discuss how this research contributes to our wider understanding of gender, technology and work. The specific

conclusions about gender in aviation, based on this research, are also detailed in this chapter.

Chapter 2

Gender, Technology and the Military

INTRODUCTION

The study of men and masculinities has been slowly growing in the social sciences over the last two decades. The importance of power when analysing masculinities and male dominance has increasingly been recognised by social scientists (Brittan 1989; Connell 1987, 1995; Kaufman 1994; Kimmel 1987; MacInnes 1998; Segal 1997). Masculinities are a crucial aspect in the persistence of the sexual and gender divisions of labour. This chapter considers the importance of masculinities, and femininities, to technology and male dominated occupations, with a particular focus on the military. However it is also important to understand what is meant by terms such as gender and technology, when considering how they are constructed.

As discussed in the previous chapter this research addresses four main questions:

1. What is the 'right stuff'?
2. What are the cultures of aviation and how is gender constructed within those cultures?
3. Do pilots find flying a 'thrill' and why?
4. How do individual pilots affect constructions of gender within aviation?

This chapter addresses how these questions relate to sociological literature and the main sociological arguments that this thesis draws upon. For these questions understanding what is meant by gender is crucial and since this research is primarily concerned with the production of gender, the first section addresses the question, what is gender? This section outlines ideas concerning gender identities, structures,

symbols and roles that are particularly relevant to this research. The second section is very much concerned with the interaction between gender and technology. It discusses various approaches to technology and how it is shaped in conjunction with gender. The third section of this chapter examines divisions of labour and experiences of men and women in male dominated occupations in order to understand gender in the workplace. Finally the nature of hegemonic masculinity in the military is examined, alongside what this has meant for women within military institutions.

WHAT IS GENDER?

> Feminist theory has brought home to us that gender is neither simply the manifestation of sex, nor simply an easily dispensable artefact of culture. It is, instead, what a culture makes of sex - it is the cultural transformation of male and female infants into adult men and women ... (Keller 1992: 46).

In this statement Evelyn Fox Keller summarises some of the key aspects of gender. Feminist writers have adopted differing positions when defining gender and sex. The definitions conventionally used refer to sex as biologically determined - male or female - while gender is used to refer to the 'cultural', or socially constructed notions of masculinities and femininities (West and Zimmerman 1991: 15). This section outlines some important conceptions of sex and gender, followed by discussions on gender identities, structures and symbols. This section demonstrates how such concepts relate to this research.

Sex and Gender

Sex categorisation differentiates individuals into recognised groups - boy/girl, woman/man. Sex assignment usually occurs only once, at birth, which tends to determine an individual's sex category for life (Kessler and McKenna 1978: 8). The basis of this sex categorisation, normally a baby's genitals, would appear to lead to a simple dichotomic division. Sex is not always a straightforward decision for instance with 'intersexual babies' (see Birke 1992 and Kessler 1996). Sex categorisation

influences social structures. Biological determinists would argue that the sexual divisions within society are due to 'natural' and biological differences between men and women (Hawkesworth 1997: 649; West and Zimmerman 1991: 15). The exact nature of these biological differences can be debated.

Sex categories themselves are argued to be social constructs, which have been attributed with certain gender characteristics (Butler 1993; West and Zimmerman 1991). It seems "the body is socially constructed and culturally mediated" (Hawkesworth 1997: 52). However, sex categories do have a certain material basis. There is still one main difference between the men and women, that at present is certain, men cannot get pregnant and breast feed (MacInnes 1998: 64-66). It can be argued that some women, as well as men, cannot get pregnant and breast feed. John Hood-Williams (1996) argues that sex cannot be broken down into two distinct categories. I agree that sex is not as simple as male/female. However there are some biological differences between certain categories of humans. It is how we understand those categories, which is being questioned by many feminists. Thus sex categories are attributed with certain 'cultural' meanings, although there is a basic material reality to the categories of male and female.

When it comes to gender men are conventionally attributed with certain masculine characteristics and women with feminine traits, for instance women are stereotypically seen as emotionally connected, caring, nurturing, passive and sexually submissive. On the other hand, men are stereotypically the 'bread winner', emotionally detached, rational, more aggressive and sexually promiscuous. These images promote certain characteristics as ideals, to be demonstrated by individuals at the appropriate opportunities. Such images also promote dichotomous views of gender and sex.

Connell (1987, 1995) identified two symbolic forms of gender, which represent a dichotomic view to gender. He argues that hegemonic masculinity is the dominant form of masculinity which individuals feel they have to conform to, although its exact form will vary from situation to situation. At the other end of the spectrum lies 'emphasized' femininity, promoting women as 'objects of desire', and focusing on

female sexuality (Connell 1987: 184-7). These extremes are symbolic notions of gender which individuals try to live up to. The notion of hegemonic masculinity is useful when considering why some forms of masculinity are more dominant than others. Hegemonic masculinity is identified as being an important element for maintaining hierarchies, and it is always constructed in relation to various subordinated masculinities, along with various femininities (Connell 1987).

The stereotypical and dichotomic images of men and women are one aspect of gender symbols. Yet if we were to list the characteristics which differentiate males from females, we would find that there are none that "always and without exception" apply to only one sex (Kessler and McKenna 1978: 1). There are multiple forms of masculinities and femininities, which individuals possess in varying degrees and combinations. The plurality of gender means that exploring both gender and technology is a complex process.

Sandra Harding (1986) defines three aspects of gender. First, gender symbolism, such as the imagery associated with aviation or the symbolic notions of hegemonic masculinity and emphasized femininity. Symbols are more than just images; they also encompass beliefs and practices. The second aspect of gender in Harding's approach is gender structures, which includes gendered (or sexual) divisions of labour. Harding's approach to gender allows for the exploration of individual and collective aspects of gender, whilst going beyond a purely structural approach. Hence the third aspect of gender is gender identities. This gender triad formed the basis for analysing gender in aviation, within the framework of the situational role. Each aspect will now be discussed in turn.

Gender Identities

When considering the role of individual gender identities, the psychoanalytical approach is a useful tool (Chodorow 1994; Connell 1995). As children we try to differentiate between ourselves and an 'other' usually the mother or primary carer (Chodorow 1994: 43-44). The crux of object relations theory is that a boy identifies

himself as not-female or not-mother, attempting to be everything his mother is not. While a girl does not think of herself as not male, thus not having the conflict of identity that a boy will have. Such identity conflicts can be seen in the socialisation and adaptation processes that pilots go through during their working lives. However whether men experience more conflicts than women is debatable.

With this approach the psychological separation from the mother is a critical point in a boy's childhood for forming a self-identity. At this point in his childhood a boy will attempt to prove his own identity to himself and others in terms of masculinity (Connell 1995: 9-12). The weakness of this theory is that it assumes we all need to identify with another person of our own sex (Brittain 1989), suggesting that this is an inherent physiological need. However there is no evidence to support this argument. In assuming this need is universal and can be applied to every human, object relations verges on essentialism.

Another approach can be used to analyse gender identities, namely gender performance. This is the approach used to analysing gender identities throughout this thesis. This approach argues that individual's have their own internal gender identities, which consist of a person's feelings towards themselves. Suzanne Kessler and Wendy McKenna refer to this as the "self attribution of gender" (1978: 9). As an individual we may feel that we have numerous forms of masculinities and femininities as part of our character. We often see ourselves differently than others see us. For instance, a person who is biologically male but portrays conventionally feminine traits - such as being artistic, emotional, enjoying domestic activities or caring for others - may be viewed by others as effeminate, but may feel that they themselves have a very masculine gender identity.

Masculinities and femininities do not purely exist along a linear scale; there are multiple forms of masculinities and femininities. Personally I reject the approach to masculinities and femininities, which places them on a linear scale. I prefer a three-dimensional approach, since many types of masculinity and femininity can exist in one place and time simultaneously. There are many and differing masculinities and

femininities that will exist either in harmony or in conflict within an individual's gender identity. Individuals, depending on the context and situation, *display* certain gender traits (Connell 1987: 171-9). It is through these gender displays that we portray our external gender identity to others, who then place us in a sex category (West and Zimmerman 1991). This approach to gender argues that individuals portray recognised characteristics of femininity or masculinity in order to display their gender. The characteristics displayed depend on the context of the situation, socialisation and social structures.

Socialisation processes promote gender differences. These socialisation processes both reflect and reproduce particular social structures and ideas. Individuals are socialised into performing certain gender identities. A person's external gender identity is also defined by their social position and the expectations placed on that position (West and Fenstermaker 1995: 17). Thus groups within society expect appropriate behaviours to be performed. For instance the sexual division of labour within our society means that it is appropriate to treat boys differently from girls at birth, hence certain social behaviours are perpetuated (Brittan 1989: 20). These expected gender displays can be referred to as collective gender identities.

It is important to remember that individuals are actively involved in producing their own gender identities. These identities may, or may not, conform to collective gender 'norms' and identities. Thus gender can be viewed as a fluid *process* of accomplishment. Conflicts can arise when individual gender identities do not conform to conventional collective gender identities. This conflict between individual and collective identities is apparent amongst professional pilots. The complexity and fluidity of gender identities are a particular focus of this research. The notion of performance has proved particularly useful for examining the fluidity of gender identities. Throughout this study gender identities are explored, particularly individual gender identities, since collective identities are examined through the concept of the situational role. The situational role allows us to move beyond the examination of identities, especially since social environments and interactions are more than just a series of individual and collective identities. Gender, for instance,

does not solely consist of a variety of identities. Gender structures and symbols also shape the concept known as gender, hence together forming situational gender roles.

Gender Structures and Symbols

Race, ethnicity, class and sexual orientation, as well as other factors affect gender.[1] As Donna Haraway states "there is nothing about being 'female' that naturally binds women" (1991: 155). Hence men and women cannot be treated as homogeneous groups. This is very apparent in the study of professional aviation, where there are many different cultures and roles for pilots to fit in to. These cultures and roles form part of the gender identities within professional aviation but are also part of the gender structures of aviation. One question that arises when considering gender is why some areas of social life remain male dominated?

Bob Connell (1987, 1995) views gender as a set of social structures that organise social practices. He identifies power relations based on patriarchy; production relations based on divisions of labour; and cathexis, which is concerned with sexual desire. Western society has been based on hierarchical power structures, from the times of feudalism to the present day (Connell 1987, 1995). A connection exists between authority, masculinity and male dominance. Masculinity can lead to power and authority (Kaufman 1994). Men, historically and presently, dominate most sections of society. In the workplace the most powerful positions tend to be held by men (CSO 1995) and at home women still do most of the caring and housework (Gershuny 1982). There is a hierarchy of power between masculinities, with various masculinities being subordinated under hegemonic masculinities (Connell 1987; Kaufman 1994).

Maintaining definitions of hegemonic masculinity has been of great importance to certain groups. Hence groups that undermine definitions can be subjugated, such as homosexual men (Connell 1987: 108). The definitions of hegemonic masculinity change but not without a struggle. "Manliness, in other words, is a contested territory;

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[1] West and Fenstermaker (1995) give a detailed analysis of the interactions between race, class and

it is an ideological battlefield" (Edley and Wetherell 1996: 106.). The experiences men have of power will vary greatly depending on their situation within the power hierarchies (Kaufman 1994).

Connell has traced the history of masculinity from the Renaissance, where individual expression and rationality became accepted, to the violence of Imperialism. He notes the gentry masculinity of the aristocracy and the ruling classes of the eighteenth century, and the rise in the importance of scientific and technical knowledge in the nineteenth and twentieth centuries (Connell 1995: 185-203). On the other hand, John MacInnes argues that concepts of masculinity arose during the Enlightenment and with the growth of capitalist society (MacInness 1998: 1-23). Whatever the forms of masculinity prevalent within society men have formed the dominant social group.[2]

One way of explaining male dominance is to argue that men have managed to control meaning, namely what it means to be a man and a woman, and what constitutes men's work and women's work. Nigel Edley and Margaret Wetherell (1996) explain that male power has stemmed from the ability to control how dominant groups within society think, which has been accomplished by dominating key institutions. Patriarchy has maintained this system and 'naturalized' male power and status (Edley and Wetherell 1996: 105-110). They argue that change has occurred and is possible, and that male dominance is not a conspiracy. However there are problems with using the notion of patriarchy.

Some feminists have used patriarchy to explain the sexual division of labour and male power. Radical feminists have argued that "the original and basic class division is between the sexes, and that the motive force of history is the striving of men for power and domination over women" (Hartmann 1981: 13). It is argued that patriarchy and class relations have worked together to oppress women (Cockburn 1985, 1991; Rees 1992: 30-33; Walby 1986). Yet the nature of this relationship has changed over

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gender.
[2] Remembering that men are not a homogeneous group is important, since subordinate groups have also consisted of men due to race, class, etc.

time. Hiedi Hartmann defines patriarchy, "as a set of social relations between men, which have a material base, and which, though hierarchical, establish or create interdependence and solidarity among men that enable them to dominate" (1981: 14). The role of domestic relations is stressed along side the public spheres of life. Sylvia Walby (1986) defines the key sets of patriarchal relations as domestic work, paid work, the state, male violence and sexuality. She also defines patriarchy "as a system of interrelated social structures through which men exploit women" (1986: 51). Domestic relations influence women's access to work, but also access to certain forms of training, discrimination in hiring practices, marriage bars and part-time work can affect divisions of labour. Walby (1986) identifies two forms of exclusion; ways of restricting entry for women to particular occupations; and ways of 'ejecting' women from certain occupations (55-57). These are useful for examining occupational segregation, as will be discussed later in this chapter. Patriarchy and capitalism can come into conflict, for instance when there is a labour shortage, women can be used to fill the gaps (Walby 1986). Thus these systems are dynamic and change is possible.

The theoretical usefulness of patriarchy as a concept is limited, since no general "rules" of patriarchy can be established (Crompton and Sanderson 1990: 16-19). Feminists have adopted a wide variety of meanings when using the notion of patriarchy but no consensus has been reached (see Waters 1989). Patriarchy also strikes of essentialism and universalism, as it can assume every man is part of the dominant group and it can appear trans-cultural and trans-historical. The relations between men and women change over time, and Walby (1986) for instance has difficulty in establishing the exact circumstances for change.[3]   At its loosest, the term patriarchy can be useful in attempting to describe the general oppression of women by men, bearing in mind that this also involves hierarchies of power amongst different groups of men and masculinities. Hence it could be argued that male dominance within aviation is maintained through patriarchal social relations.

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[3] See Crompton and Sanderson (1990) chapters 1 and 2 for a further discussion of the limitations of patriarchy as a theoretical basis of analysis.

Male dominance of social structures also appears to have perpetuated male power. The state acts to control subordinates for instance through regulating sex by determining ages of consent and the legality of certain activities, such as homosexuality and rape (Connell 1987: 126-9). Thus social structures act to support power structures, but we have to remember the majority of individuals have to abide by the rules for state regulation to work. Also women are not slaves in the home, it is a role many women have accepted due to conventions and have thus contributed to its perpetuation.

> In Western society, the highest places in a social hierarchy are not held by those with qualities of the divine, but by those with qualities defined as scientific or technological rationality. The lowest places, the fewest rewards, are held by those with qualities of the womanly - nurturance, routine maintenance, intimacy, sensuality, social and emotional complexity. (Hacker 1990: 122)

Wealth and political power often open the path to influence within capitalist society, thus science and technology do not necessarily offer power, but can pave the way to accumulating wealth. Men's appropriation of technology and science in industrial capitalist society has given them the material means to maintain power structures in the favour of men (Wajcman 1991: 162-167). Cynthia Cockburn (1983) has argued that the power technology and science affords in society has meant that women have been excluded from this area through various structural means; while also devaluing the skills women have attained. Capitalism as a social structure cannot be viewed as gender neutral, but we can refer to patriarchal capitalism (Adkins 1995: 44). We can see that social power structures maintain gender divisions and act to promote certain forms of masculinity and femininity. Thus certain masculinities and power can be seen as closely connected. Within aviation hegemonic masculinity and the power of aviation technology are also closely connected. The structures and symbols within aviation act to maintain the dominance of a form of hegemonic masculinity. In this thesis I have concentrated more on gender identities and symbols rather than gender structure. Gender structure is important in maintaining masculinities and gender divisions within aviation. However I have chosen to focus on identities and symbols since the data obtained during the study revealed more about these areas of gender than structures

within aviation. Concentrating more fully on one or two aspects of the gender triad has also allowed for a greater depth of study on these areas rather than trying to encompass all the aspects of gender within aviation. For a thesis of this size I felt this approach more revealing, although I must add that I do not consider gender identities and symbols of any greater importance that structures in the construction of gender within aviation. All three aspects of the gender triad have a part to play in shaping gender.

Gender and Other Roles

Twenty years ago feminist theorists argued that gender, and sex, consisted of various roles (e.g. Hochschild 1973; Kessler and McKenna 1978; Oakley 1972). The basic argument followed that men and women were socialised into various sex (or gender) roles. However this implied a static notion of gender, with roles appearing very rigid, whereas gender, and sex, can be very fluid. There were problems with defining these roles and where they overlapped (West and Fenstermaker 1995; West and Zimmerman 1991). Gender roles also created problems for examining issues of power and inequality (see Connell 1987).

Role theory in general starts from the premise that everyone has various social positions, which they fill (e.g. woman, daughter, teacher). Each position has various rules of behaviour and attitudes, which define a social role. Individuals will participate in these roles because of social sanctions, which may be written in law, or merely the fear of being ostracised or somehow 'punished' (Dahrendorf 1968: 8-26). The idea of fixed professional roles developed from this notion of social roles (e.g. Becker and Carper 1956; Becker et al 1961; Becker 1964; Barnes 1971). Particular values and behaviours were learnt and adopted by individuals during the course of their working lives, gradually changing their identity (Becker et al 1961: 419-425). These notions of social and professional roles give individuals little freedom and the roles themselves appear very rigid.

Ralf Dahrendorf (1968) gives a detailed critique of role theory in is book *Homo Sociologicus*. He criticises role theory for these two very reasons and concludes that

the fixed idea of roles has little use for the empirical study of individuals and society (1968: 49-56). Dahrendorf states that individuals do have a range of freedom of choice in their behaviour and it this very freedom which allows for change. Thus roles are not as rigid as they may appear (1968: 25-40). Goffman (1961, 1971) used the notion of performance to demonstrate the flexibility of roles. Goffman (1971) argued that individuals present different identities in their everyday lives, which fill the various roles, they are expected to demonstrate. Other sociologists referred to this as a situational role (Becker et al 1961; Becker 1964; Barnes 1971), where performances depend on the context of the role.

Howard Becker et al (1961) refined the idea of the situational role in their book *Boys in White*, which explores the training of male medical students in the United States during the 1950s. The notion of "situational" role learning developed out of this and other works (see also Becker 1964; Becker and Carper 1956). The notion of situational roles states that individuals take on certain aspects of a professional (or other) identity appropriate to the current situation, while also adapting it to their own individual self identity (see also Barnes 1971). For instance the medical students in Becker's research (1961) through the course of their training began to accept and emulate certain "culture traits"; namely the ideas and behaviours which one group will try to pass onto another. For example, concepts of medical responsibility and clinical experience where adopted and internalised by the students, since these were stressed in the training and seen as important to successfully completing the training (Becker et al 1961: 239-373). In the same way once these students became doctors and started to train new students, these ideas would be passed on to the next generation of doctors. However in this process the exact nature of these "culture traits" can change, for instance new behaviours for doctors will be stressed in training as clinical practices change with developments in medical science and technology.

Here we can see that situational roles are not only about individual identities. A situational role is more than just a collection of behaviours and ideas. A structural change, such as through changes in technology, will also influence situational roles.

Situational roles are learnt. The learning process can bring about changes in these roles, but they are also dependent on the context in which they are performed and created. The context being shaped by structures, symbols and identities.

Over the last twenty years role theory has become unpopular within sociology for the reasons of appearing rigid and fixed. However the concept of a role is still a useful tool, especially when exploring how the gender triad operates within a particular context. We all have roles to live up to and which we perform to. Identities, social structures and symbols construct these roles.

Situational gender roles consist of aspects of gender identities, gender structures and gender symbols. The interactions of these aspects of the gender triad combine to construct the context in which roles are performed. Gender structures for instance can be the actual physical context, such as a pilot training college. The sexual division of labour is an easily recognisable gender structure. Power relations within a social setting and social relationships are other examples of structures. Alongside these structures exist symbols. Examples of gender symbols include stereotypical or idealised views of certain masculinities and femininities, images in popular culture, notions of patriarchy, and concepts of social exclusion. Such gender symbols influence beliefs, ideas and behaviours. These beliefs, ideas and behaviours exist within a particular structure and become part of gender identities.

Gender identities exist both collectively and individually. On an individual scale, gender identities relate to how individuals perceive and present themselves. However collective gender identities are about performing identities that belong to a group and are in line with expected group behaviours and beliefs, for instance the expected behaviours of a professional doctor or a young white heterosexual male. Of course individual identities will reflect these collective identities - and possibly vice versa. These gender structures, symbols and identities all combine and interact in various social situations to create situational gender roles. Hence the situational role is a way of examining how the gender triad interacts, at a particular point in space and time, to construct notions of gender.

It is this interaction of the three aspects of the gender triad, which makes roles both changeable and apparently stable at the same time. Some aspects of the triad may change more rapidly or more dramatically than others. Yet if a change affects only one aspect of the triad, such as a symbol, then that may not change the whole nature of a situational role, but it may signify the start of a wider change to that role. Situational roles allow us to examine how changes in the gender triad lead to changes in constructions of gender. It also allows us to examine which parts or aspects of the gender triad are changing, or not, at any particular place and point in time. Professional pilots have various situational roles that they have to fulfil, which may or may not be changing. In conclusion, you can say that a situational role is a structural and cultural framework within which identities are performed.

I use the concept of the situational role to explore the various pilot and gender roles highlighted during the course of this research, since the situational role encompasses both the flexibility and stability that exists in constructions of gender. For instance the continued dominance of certain forms of hegemonic masculinity, yet also the changing nature of those same masculinities. The situational role allows one to closely examine how the gender triad operates to construct notions of gender, in a way that the concept of collective identities does not. The situational role allows more easily for analysis to go beyond identities. It is a useful concept for linking and analysing structures, symbols and identities.

TECHNOLOGY AND GENDER

> Technologies are the missing masses which for too long have been neglected but are now demanding their place in the accounts of society (Lie 1998: 25).

For a long time in the social sciences the predominant view was that technology was an independent variable, that impacted on society (MacKenzie and Wajcman 1985: 4-8). In opposition to this technological determinist approach, in the last twenty years social scientists have moved on to talk about the social shaping and social construction of

technology. These approaches argue that society also affects technology (MacKenzie and Wajcman 1985). Technology does not operate independently from society but is closely intertwined with it. In this section the close relationship between technology and gender is explored. First the main sociological approaches to technology which relate to this thesis are outlined, followed by a discussion of the mutual shaping of gender and technology. Finally this section examines the symbolic meanings of gender and technology, which is an area of investigation particularly relevant to this research.

Approaches To Technology

Is important to understand what is meant by technology. At the most basic level technology is about artifacts. It is about physical objects such as the aircraft pilots fly. As Judy Wajcman states, technology is also about 'know-how' (1991: 14). Technology is useless without the knowledge and skills to use and create it. So pilots need specific knowledge and skills to fly an aircraft, which are gained through training. Finally technology is also about human activities, including organisations (MacKenzie and Wajcman 1985: 3). At present most aircraft could not fly without the pilot and their knowledge, although this may change in time. Even pilotless aircraft would need the technological knowledge to design and operate them. Technology can be as complex a process to examine as gender.

MacKenzie and Wajcman (1985) argued that technologies are shaped by society. They advocated examining how economic and political relations affect technology. This social shaping approach had been criticised as creating social determination as opposed to technological determinism (Grint and Woolgar 1995). During the 1980s the analysis of technology focused on to the social constructivist approach, which drew on the sociological of scientific knowledge.

The social construction of technology examines the processes through which social groups interact to define a technological artefact (Pinch and Bijker 1984). Thus it focuses on the artefact and the knowledge supporting that artefact. This approach involves identifying all the relevant social groups and the problems groups have with a

particular artefact. For each problem varying solutions are identified. Hence conflicts of interest can be seen, although the social construction of technology approach does have difficulties allowing for power differences between social groups (Russell 1986: 334-335). Closure or stability for any particular technological trajectory is only achieved once conflicts between social groups are resolved (Pinch and Bijker 1984). Some technological paths are followed while others fail or are replaced (Hughes 1986).

Langdon Winner (1993) has criticised the social construction of technology approach for focusing on the shaping of technology rather than its impact. He also questions whether all social groups will be included in such an analysis, for instance weaker or subjugated groups may not be seen as relevant to a particular technological artefact. This also raises important issues concerning the relation of gender to technology, which could be overlooked using this approach. Social groups also need to be carefully located within their own particular context.

A useful concept has emerged from the social construction of technology, namely interpretative flexibility (Pinch and Bijker 1984; see also Bijker and Law 1992). This concept argues for the interpretation of artefacts to be adaptable and for flexibility in the interpretation of construction. The social construction of technological artefacts is open to change and re-interpretation. This concept can be useful for examining the changing usage of technology. This notion of interpretative flexibility can be used to examine how different types of pilot approach flying aircraft, for instance in terms of the perceptions of risk. Hence this is a useful concept for this research.

The view of technology and society as a 'seamless web' is a second particularly useful notion (Hughes 1986), especially for examining gender and technology. The interconnectivity of technology and society allows us to talk about sociotechnical systems. With this view it is not possible to make clear distinctions between the social and the technological; when talking about technology you are also taking about social factors. This seamless web approach has also been adopted for analysing gender and technology.

The Mutual Shaping of Gender and Technology

Gender is part of every aspect of our lives. It is used to organise social relations, but also, as Sandra Harding poignantly states, "as a symbol system, gender difference is the most ancient, most universal, and most powerful origin of many morally valued conceptualizations of everything else in the world around us" (1986: 17). Humans are not the only 'objects' to which gender is assigned. Animals, mountains, ships and aircraft are all given gender traits. In fact most technologies have gender assigned to them in one form or another, for instance some technologies are associated with certain masculinities and femininities.

Gender and technology are mutually shaped and interwoven through social relations, structures and symbols. Feminist literature on gender and technology from the outset focused its attention on women's relationship with technology and science, both as users and designers (Berg 1996; Cockburn 1983, 1985; Faulkner and Arnold 1985; Cockburn and Furst-Dilic 1994; Wajcman 1991; Lie and Sørensen 1996: Cockburn and Ormrod 1993). Technology is profoundly gendered through design (e.g. Weber 1997), one reason being that there are few women in design engineering (Cockburn and Furst-Dilic 1994). As users, women are not often consulted in the design process (Berg 1996). In the design of aircraft cockpits the smaller bodies of female pilots have only recently been considered. Thus some women, and some men, have been excluded from flying due to their smaller then 'average' size (Weber 1997).[4]

Feminist studies of technology have demonstrated that technology undergoes a process of negotiation and renegotiation in the course of everyday life (Cockburn and Ormrod 1992; Berg 1996; Lie and Sørensen 1996). Technology is continually being reconstructed through a domestication process, since "the users/consumers make active efforts to shape their lives through creative manipulation of artifacts, symbols and social systems in relation to their practical needs and competences" (Lie and Sørensen 1996: 9). Research has been conducted on the domestication of technology at home and work

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[4] See Chapter 4 for further details of this article and discussion.

(Cockburn and Furst-Dilic 1994; Cockburn and Ormrod 1992: Lie and Sørensen 1996). Pilots are users of aviation technology and view the usage of that technology differently from aircraft designers. Aircraft designers influence how pilots use aircraft, but pilots also influence and redefine that usage. As discussed in Chapter 5 some pilots view aircraft as 'fun' machines while others approach the task more instrumentally and methodically. The jobs of pilots are influenced by changes in technology, which also affect usage. There is a two way process of negotiation between designers and users of technology, and between societies and technologies.

Differing approaches to examining gender and technology have been adopted. First, we can examine 'women *in* technology', focusing on issues of inequality and women's exclusion from technological work (Henwood 1993: 31; Faulkner 2000). Studies of women in occupations, like engineering and the British government's Women into Science, Engineering and Technology (WISE) schemes, have taken this focus. They have focused on why there are so few women in these areas. A second and overlapping approach focuses on 'women *and* technology'. This looks at the gendering of technological skills and knowledge (Henwood 1993: 31). The devaluation of women's work is very much a focus of this second approach. The third approach is '*gender and* technology', which recognises the need to examine men as well as women, gaining a fuller picture of both men's and women's experiences of and interactions with technology (Faulkner 1997, 2000).

Women's roles in the home and the sexual divisions of labour in the workplace have meant that women are largely users or assemblers of technology (Cockburn 1985: 15-43; Wajcman 1991: 27-53). These roles are not as passive as they may initially seem. Men and women, designers and users, interact to create differing meanings of gender and technology. Research into this area has centred on the third approach of gender *and* technology, since both men and women are actively involved in creating conceptions of gender and technology. The male dominance of flying is more than just an issue of gaining equality for women; it is also a matter of understanding the meanings associated with aviation technology by both sexes.

Donna Haraway (1991) takes the view that the boundaries between the body and science and technology, and what is artificial and natural are becoming blurred. Thus she uses the terminology of cyborgs. This idea clearly stresses the interrelation between technology and human, and technology and gender. Haraway states that "modern war is a cyborg orgy..." (1991: 150). In other words modern weaponry is so interrelated with its human users that it is an extreme example of the "cyborg". Modern fighter pilots are intimately connected to their machines. They need an extremely detailed knowledge of the aircraft's systems and need to be able to use those systems almost without thinking. Thus the relationship between humans and technology can be very important; it is a 'seamless' relationship. The ideas of the sociotechnical system and the 'seamless' web of gender and technology are central to this research. Pilots and aircraft are interrelated so the construction of gender in one influences the other. The symbolic gender meanings associated with gender and technology are a particular focus of this research.

Symbolic Meanings of Gender and Technology

The importance of gender symbols was highlighted earlier in this chapter. Symbols give meanings through which gender structures and identities are shaped and influenced. Technology is one aspect of gender symbolism. It is this relationship between technology and gender symbols in aviation that is explored in Chapter 4.

Symbolic dualisms exist with regard to technology. Technologies are sometimes referred to as 'soft' and 'hard'. This dichotomy tends to correlate with stereotypical images of femininity and masculinity (Lie 1996; Faulkner 1996). Certain technologies are associated with being "strong, hard and vigorous", which can allude to male sexuality (Lie 1996). These 'hard' technologies are inert and powerful, and are endowed with such symbolic meanings (Lie 1996; Faulkner 1996). 'Hard' technologies are often also 'big' technologies, such as space programs, aviation and nuclear weapons. These are technologies, which tend to be in the public sphere, as opposed to smaller domestic technologies. An example of a 'hard' technology is weaponry. Weapons are often associated with aggression, power and control. Julie Wheelwright (1992) examines

how a gun can become a phallic symbol; "a penis and an M-16 are interchangeable. Therefore, a woman with a gun has only half the equation since she lacks a real 'weapon'" (Wheelwright 1992: 221). In this sense, the gun is a symbol of masculinities. The aircraft is seen as a 'hard' big technology, associated with masculinity. It is a symbol of military strength (e.g. the F15) and commercial success (e.g. the private jet or fleets of Boeing 747s); a symbol of power. In military organisations the gendered symbolism of aviation technology is especially potent, since the military is also a site of strong hegemonic masculine ideals.[5] Aviation can be seen as a source of power. In the military it is a demonstration of both political and destructive power, while in other situations it can demonstrate individual power and identities. Hence the meanings associated with technologies reflect conceptions of gender.

In aviation we can see further examples of the symbolically gendered meanings associated with technology. Terms such as the "conquest of the air" (Turner 1910) and "mastering flight" have been used by many aviation commentators. To an extent links can be drawn between aviation and a desire to order and control nature. The symbolic mastery of aviation technology has very important gender meanings. Brian Easlea (1983) argues men psychologically associate power with the penis. In order to overcome feelings of inadequacy men have used science to demonstrate their 'creativity' and reaffirm their masculinity. Easlea (1983) states that this desire stems from an envy of women's abilities to reproduce - i.e. 'womb envy' -, which has led to a need for men to demonstrate their creativity and power. Easlea (1983) cites the development of the atomic bomb and the Manhattan Project as one such vent of male "creativity"; thus the atomic bomb was a "pregnant phallus". He argues that scientists throughout history used science and technology to affirm that "only *men* can and do control nature" (Easlea 1983: 14). Easlea's (1983) arguments tend to be rather sweeping and generalising. He does not account for gender diversity and individuality. However aviation can be viewed as a site where attempts have been made to control nature and demonstrate certain masculinities.

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[5] Links between masculinity and the military are discussed in greater depth later in this chapter.

Easlea views science as "a male enterprise that metaphorically views nature as female" (1983:7). Viewing nature as female is not new. The term 'mother nature' has been in use for centuries. The idea of male science raping nature is also not new (Caputi 1988; Easlea 1981; Merchant 1980). This notion stresses the tension between nature and science. However when we talk about the relationship between nature and aviation it can not always be viewed as a conflict. It can be seen more in terms of the pilot becoming attuned to the elements and danger nature posses for an aircraft. Antoine de Saint-Exupéry wrote that "the machine [aeroplane] does not isolate man from the great problems of nature but plunges him more deeply into them" (1939:55). The pilot needs to respect nature and understand that it is outside their control. Pilots themselves do cite control as part of the attraction to flying (see Chapters 4 and 5). This does not necessarily refer to control over nature but seems to refer to control over themselves, the aircraft and the technology.[6]

From the above example we can see how gendered meanings can relate to aviation technology from a variety of sources. The conquest and mastery of the air is a recurrent theme within aviation and may be a contributing factor to the masculine associations of flying. Flight is a demonstration of power, be it political, commercial, sexual or gender related. The 'seamless web' that exists between gender identities, symbols and technology is clear within aviation, as we shall see in subsequent chapters.

GENDER AT WORK (AND IN THE HOME)

By conforming to gender 'norms' (or roles) both men and women reproduce gender divisions (Kandiyoti 1988). Social structures and symbols exert pressures on individuals to conform to social stereotypes and collective gender identities. Going against these conventions can have high personal costs. The persistence of the sexual division of labour is explored in this section, followed by a discussion of research in to

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[6] What defines nature is also an issue for debate, which is beyond the remit of this study. However in terms of flight I take nature to mean the elements, weather, landscapes and anything in 'the air'.

women and gender in male dominated occupations. Finally this section considers the position of women in the military and the specific issues that arise in these organisations.

The Sexual Division of Labour

Work organisations, education, the family, the state, class and ethnicity all affect - and are affected by - the sexual division for labour. We can take the example of women in science and technology. Education systems support established labour and production structures, for instance through sex segregation, curriculums, uniform and teachers attitudes (Kessler et al 1985). Studies have revealed that girls tend to shy away from science based subjects once they are given a choice (Kelly 1987; WISE 1994). There does not appear to be a question of differences in ability based on sex. British evidence indicates that girls do as well as boys in the sciences up to the age of 16 - when they are able to make subject choices (WISE 1994). Thus the reasons why girls do not choose science have been found to vary from a lack of self confidence and a fear that science is too difficult (Kelly 1987: 14), to masculine images of science (Kelly 1987), to teacher-student interaction (Crossman 1987), and a lack of role models (WISE 1994: 12). In education we can see the interaction of structures, symbols, and identities to maintain sexual divisions. As explored in Chapter 6 the evidence from this study suggests that the experiences of women student pilots reflect the experiences of women in other science and technology based educational settings.

An individual's identity and feelings about themselves can influence occupational choice. Choices are not as free as they may seem, and society can influence individual choices and attitudes. Individual feelings can and do change over time; hence, individual, and collective, identities are not static. We need to address the questions of how and why the division of labour exists?

Divisions of labour have changed over time, but certain practices have become social rules (Connell 1987: 99-100). As mentioned above, "skilling and training is one of the mechanisms by which the sexual division of labour is made a powerful system of social

constraint" (Connell 1987: 100). Few women go into science and technology related fields and few women are trained to become pilots. This is part of the process of maintaining sexual divisions. It is important to understand how certain occupations have been defined as 'men's' work since this will reveal how such occupations are gendered. Skill differentiation and the sex typing of tasks are two main elements in creating sexual divisions of labour, which are perpetuated through organisational structures. The rest of this section outlines some of the reasons that have been put forward for the persistence of the sexual division of labour

Occupational divisions occur on two levels: horizontal and vertical segregation. Horizontal segregation includes occupations which are sex-typed into male and female jobs (Crompton and Sanderson 1990); for instance engineering is seen as a men's work while nursing is seen as women's work. Sex-typing can occur through associating certain tasks as feminine and masculine (Crompton and Sanderson 1990: 32-38). Due to women's conventional domestic and reproductive roles, jobs that involve caring for others are often identified as 'women's work'; regardless of the technical skills involved.[7] Medical occupations are a prime example. Cynthia Cockburn has studied radiography, a mainly female profession, requiring a degree of medical training and technical skills (1985: 112-141). Technological innovations, such as CAT scans, have made this occupation increasingly skilled, in terms of operating equipment. However physicists have tried to play down the skills involved in administering the technology. Radiography is not only about operating the equipment but involves interacting with patients - a role which radiologists, who make the final decisions about the type of diagnosis or treatment, have undervalued. Through this association with caring it has been defined as a female job, even though radiography involves technical skills. Thus radiographers receive less pay and status within the medical establishment.

> It seemed that radiographers in part owed their hold on their profession and their jobs to a systematic undervaluation by men of the technical

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[7] We cannot deny that one of women's biological functions is to reproduce, but to assume that this means women have biological tendencies towards nurturing and caring is essentialist and ignores diversity.

complexities involved in it, not to recognition of women's technical skills. (Cockburn 1985: 135)

This illustrates how women's skills are often devalued. "Women are seen not only as poor scientists but also as poor technologists" (Cockburn 1985: 35). Thus many technical professions are male dominated. Horizontal segregation also includes jobs into which women are 'crowded' as cheap labour, for instance office cleaning or casual agricultural work (Crompton and Sanderson 1990: 33).

Vertical segregation includes the recruitment of men and women into different categories of the same occupation, for instance in teaching women are mainly located in primary schools, while more men are found in secondary, further and higher education (Crompton and Sanderson 1990: 34). The internal labour market within organisations can also contribute to vertical segregation through "credentialist and patriarchal exclusion" (Crompton and Sanderson 1990: 35); namely men may gain promotions while women do not. Qualification differences can be used to reinforce vertical segregation as well as 'old boy networks'.[8] Judy Wajcman (1996) identified the male 'senior management club' as a main barrier for women entering senior management positions. This is just one example of exclusionary practices.

Masculinities, and femininities, within the workplace have also maintained the sexual division of labour. Collinson and Hearn (1996) have identified contradictory masculinities present within contemporary workplaces. On one side there is collaboration, co-operation and identifying with others, but on the other side there is conflict, competition and self-differentiation (Collinson and Hearn 1996: 61-76). Studies of men and work have revealed how organisations can have masculine values and assumptions embedded in their structure, culture and practices (e.g. Cockburn 1983, 1985, 1991; Greed 1991; Roper 1994); such studies have challenged these modes of work. Aviation is one area where masculinities are embedded into the aviation cultures and practices, which act as a barrier for women, and men, to cross and adapt to.

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[8] Crompton and Sanderson (1990) use pharmacy and accountancy as examples where women were excluded due to qualification restrictions.

Women's roles in reproduction and childcare have been cited as reasons for the male dominance of certain occupations. "Human capital theory stresses that because women's primary orientation is to their child-rearing role they voluntarily choose to invest less in education and training than do men" (Wajcman 1996: 261). Thus the argument follows that women tend not have the necessary skills to enter certain occupations, while domestic commitments lead individuals to choose less demanding jobs. Occupational divisions can therefore be seen as an outcome of specialisation in the public and private spheres (Crompton and Sanderson 1990: 28).

Economic theory suggests that domestic divisions of labour are also a matter of free choice. Since men generally earn more it is more economically viable for men to be the main 'breadwinner' and for women to do the domestic and caring work (Humphries and Rubery 1995). However this seems to neglect the reasons why sexual pay differentials exist. As demonstrated with radiography, sometimes jobs with technical skills are given a low status due to the "supposed inferiority of women" (Crompton and Sanderson 1990: 29). Sexual divisions are not only a matter of economic efficiency but cultural attitudes. Some economists also argue that women are better at caring, therefore it is more efficient for them to do work involving caring. They also argue that it is a matter of free choice whether or not women decide to do paid work (Humphries and Rubery 1995). This argument tends to essentialise the characteristics of both men and women.

Women are often viewed as being less committed to paid work (Wajcman 1996; Hakim 1995). Some economists argue that such perceptions held by employers can cause markets to operate at less than optimal efficiency (Humphries and Rubery 1995: 4). For instance, if women are viewed as less committed to work and therefore less productive, employers will give women less pay, specific jobs and certain training based on this perception. Thus inequalities and a segmented labour force arise.

Women are perceived to be less career-conscious, with weaker or no commitment to paid work, less likely to seek training and promotion, less likely to approach their job with a long term perspective, having high turnover and absentee rates, and be unwilling to take on responsibilities at work that would compete with their domestic responsibilities (Hakim 1995: 432).

Some commentators assume that women choose less demanding roles. However, "the assumption that women are content and even prefer doing boring repetitive tasks has been found to be false when examined empirically" (Dex 1985: 87). Shirley Dex cites studies, which have found that women may not voice their dissatisfaction, but will tend to leave an employer. However this may add to the conception that women are less committed to paid employment (Dex 1985: 87).

Judy Wajcman's study of senior managers indicates that, in terms of hours worked, there were no significant differences between men and women, while as sources of motivation, a sense of achievement and enjoying the job were most important for both sexes (1996: 266-268). On the other hand Catherine Hakim (1995) suggests that studies in the USA, Germany and Britain show two distinct groups of women workers; those in who are committed to a full-time career and whose work commitment is the same as men; and those who have opted for the "marriage career" but who work occasionally or part-time. The second group's attitudes to work reflect conventional perceptions. However women are not a homogeneous group and such categorisation can be problematic. Commitment and attitudes towards work may also be influenced by the type of work, pay differentials and organisational cultures. Thus different occupational groups of both full and part time women workers may reveal quite different attitudes to work. Following this reasoning women in aviation only represent the attitudes of a specific occupational group, but in comparison with other occupational groups similarities may be found.

Women's conventional child caring roles and the problems of fitting into a male defined occupational structure have been cited as explanations for women not entering male dominated occupations. Wajcman's study indicated that women managers were more likely to be single, divorced or separated, and over two-thirds of

the female managers surveyed did not have children (1996: 268-270). Domestic commitments and pressures may be further reasons why women choose not to enter male dominated occupations. However Hakim suggests that childcare problems acting as a barrier to women's employment is a myth (1996: 435-438). She suggests that the type of work chosen is voluntary, that "childcare costs have only a limited impact on women's work decisions" (1996: 437), and that social class can influence attitudes to children and marriage. Namely that women in higher social classes are more likely to plan for employment while raising a family. Thus women in different classes may have differing degrees of freedom in choosing to commit to family, work or both. Different classes may hold different attitudes, however combining childcare and work is difficult for many women. Pay differentials can increase the problems, especially for single parent families.

A lack of relevant skills has been argued as another reason why there are so few women in male dominated occupations. Skill can be measured through educational qualifications. Wajcman's study showed no difference in qualifications between male and female managers (1996: 265). In Europe women's participation in general education has been rising, with young women now gaining better results than young men (Miller 1995: 204). However, this has not necessarily meant better or different opportunities for women in the labour market. In German speaking countries skilled workers are defined as those with vocational or university training and remuneration is closely linked to skill definitions. In these countries the number of women participating in vocational training has slowly increased, but few women are trained in manufacturing and technical occupations, which have better employment prospects than service related jobs (Miller 1995). In Britain, 77% of women on youth training schemes in 1994 were in office and sales occupations. In general women in Britain are between a third and three-fifths less likely to receive job-related training than men with similar attributes (Felstead 1995: 177-183). Thus even when women do get the opportunity for training it is usually in conventional female occupations. A reason for this is that recruitment by organisations in Germany and Britain is still highly gender specific (Felstead 1995; Miller 1995). There are more employment opportunities and fewer risks associated with training a

man in a male defined job than a woman (Humphries and Rubery 1995: 18-19). Hence training and education does not necessarily lead to women entering male dominated occupations. It is also not surprising that women do not have the necessary skills to enter these occupations.

Studies of the influences on young men's career choices have found that "home background, ethnic origin and education have strong influences on the level of occupational choices" while "personal characteristics like intelligence or ability, personality, interests, values, occupational knowledge and, in the few cases where it was included, sex, were all found to be important variables" (Dex 1985: 92-93). Terasa Rees (1992) has investigated the influence of education and class on girls' career choices concluding that,

> The notion of choice is a false one, because for so many girls those choices are constrained not simply by their own construction of their future role in the family. They are bounded by the manifestations of class and patriarchal relations (Rees 1992: 58).

These influences on the career choices of young men cannot be excluded from influencing young women, but to what extent can be debated. We need to address the roles of organisational and social structures and cultures, and the socialisation of individuals in maintaining the sexual division of labour. "Women's preferences are not autonomous but moulded by their experience and expectations" (Humphries and Rubery 1995: 7). External factors cannot be excluded as reasons why sexual divisions of labour persist. Women's individual choices do influence employment patterns. To assume that individuals do not have some influence on their choice of work would be to take a deterministic standpoint (Dex 1985: 94). The fact that there are a few women in male dominated occupations demonstrates that individuals *can* choose not to follow occupational conventions.

Women and Men In Male Dominated Occupations

The notion of sex typing is particularly important for women entering male-dominated and technical occupations. Stereotypes and gender roles influence women's career choices. Concepts of 'women's' and 'men's' work form cultural barriers for women who enter male-dominated professions. We can ask why men may want to exclude women from certain occupations? An American study of job satisfaction, job related depression, job related self esteem and general well-being of men in various categories of work - all male, predominantly male (5-19 per cent female), mixed (20-70 per cent female) and predominantly female - found that men in mixed and predominantly male setting were significantly less satisfied than men in all male settings (Wharton and Baron 1987: 582). On the other hand, men in all female settings were more satisfied at work. The reasons suggested by the study were that these men might receive superior treatment in the workplace and perceive themselves better off than their female counterparts. They also may experience the privileges in wider society of being male (Wharton and Baron 1987: 576).[9]

The results also indicated that the higher pay and economic benefits associated with 'men's work' were not the only factors that gave men in all male occupations greater satisfaction, but simply working alongside other men affected them positively (Wharton and Baron 1987: 583). In general, men in mixed and predominantly male occupations also suffered from more job-related depression and had lower self-esteem (Wharton and Baron 1987: 584). However, married men in these occupations were more satisfied if their wives were not working; "in other words, challenges to 'public patriarchy' are tolerable if 'privately patriarchy' remains intact" (Wharton and Baron 1987: 584). Thus it must be remembered that domestic arrangements and relationships influence 'men's work' as well as 'women's work'.[10]

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[9] The results of this study, as with any study of job satisfaction, can be contested since this is a highly subjective topic and what constitutes job satisfaction can vary dramatically.

[10] As Carol Pateman (1988) agues women are not 'free workers' since they are unable to exchange their labour for paid employment in the same way as men due to their unpaid domestic work. Men also have the support services of wives, while women still have their domestic 'responsibilities' to fulfil. Therefore women can find it harder to be accepted into work on the same terms as men. While men without the

If integrated work setting do indeed diminish men's perceived well-being on the job, such settings may be associated with male resistance and hostility toward women (Wharton and Baron 1987: 586).

Women can be seen as a threat to male security both emotionally and economically.

"Workforce and unions are significant elements in determining the occupational structure" (Crompton and Sanderson 1990: 30). In the past unions have acted to exclude women from various occupations. Cynthia Cockburn (1983) in her study on the printing industry demonstrated how union power managed to exclude women from compositing for most of the nineteenth and twentieth centuries.[11] Initially printing was regulated through a guild system. The numbers of printing presses were strictly regulated until the eighteenth century, when increased numbers of newspapers were allowed to be printed. Under the guild system, printers had to complete a seven year apprenticeship before they were accepted as a journeyman, and few became master printers with their own printing presses. Thus printing was seen as a highly skilled occupation and very few women were allowed to enter. A few women did run family businesses but the extent of their involvement in the printing process is unclear.

During the nineteenth century compositors organised into trade societies, later becoming trade unions. The apprenticeship system was maintained and managed to exclude unskilled labour; women being viewed as one source of unskilled labour and a potential threat to the status of compositors. In the industry, women were segregated into bookbinding and papermaking. Some companies employed women as typesetters, to distribute the used metal letters, which was seen as less skilled

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conventional support services of a wife may experience more difficulties at work and home.

[11] Compositing is the stage at which the document is 'translated' into a form which the printer can understand. Initally this involved puting letter blocks into a frame which was then placed on the printing press. During the late nineteenth century blocks were made as required from molten metal and the linotype keyboard was introduced. Photocomposition has been the final development in this process. See Cockburn (1983) for a detailed account of the technological developments in printing.

work. However in general the craftsmen blocked the companies until the women were fired. A few women set up their own printing presses but these were mostly short-lived projects. During the 1960s and 1970s technology has changed to photocomposition and computers are now used for compositing. Thus the change of the compositing keyboard from the largely unknown linotype to the Qwerty keyboard has meant that less training is required. There is also less physical work involved, so the opportunities for women compositors have increased. In Britain trade unions fought the changes in technology and managed to retain control over photocomposition, since with computerisation documents can be formatted in the originating office and sent directly to the printer; yet this was still not occurring in many printing firms (Cockburn 1983). This example shows how institutions can restrict entry to an occupation. The concept of 'skill' can be changed to suit the situation. For instance women were considered not physically strong enough for compositing. It was also argued that women did not have enough education and intellect (Cockburn 1983). Women were seen as a threat to the status, the pay and the 'fraternity' of male compositors.

Equal opportunities legislation has made it harder to justify overt exclusion of women from male dominated occupations (Cockburn 1991: 31-36). Spencer and Podmore have identified a variety of factors which "contribute to the professional marginalization of women in male-dominated professions" (1987: 2); including stereotypes about women, stereotypes about the nature of professions and professionals, sponsorship systems, the lack of role models and peers, informal relationships, the concept of professional commitment, the unplanned nature of many women's careers, the concept of 'women's work', client/customer expectations and the fear of competition. Although these findings specifically related to research conducted on lawyers. they can be linked to other professions. Scarlett MccGwire suggests that the lack of role models and the male-based assessment of women through their career are reasons why women are not applying and obtaining positions in senior management and male dominated occupations, such as engineering (1992: 37-40). These are all factors that may influence a woman's career 'choice' and can be applied to professional aviation, as well as other occupations

Many cases of male exclusionary practices have been identified by feminists. Highlighting sexuality is a way of creating divisions between men and women in the workplace, and a way for men to maintain control in a male dominated occupation (Cockburn 1991:138-170). Sexual harassment is one method that men - and women - can use to express power and degrade the position of women - and men - in the workplace (Cockburn 1991). Humour can be used to emphasise divisions. MccGwire quotes one women engineer who says, "Even now, though, if people make jokes about how useless women are I just try to get in first so we are all joking about how useless they are" (1992: 78). This women tries to fit in to the environment by joining in with the jokes. However this engineer does also say, "I thought originally that if I wanted to work in a man's world I had to accept the conditions: I'm not so sure of that now" (MccGwire 1992: 78); this raises the question to what degree should women have to 'fit in' with the existing work environment or should it change? I cannot attempt to address this question here but it is an issue which needs to be, and has been, considered by feminists. Cynthia Cockburn concludes that humour "in contrast to the exclusion of women by male clubbing this culture *includes women but marginalizes and controls them*" (1991: 153 italics in original). These are just a few ways in which the work environment can be used to exclude women; namely it makes work a struggle for women in male dominated occupations. Many women may feel that the struggle is too difficult and choose not to enter these occupations.

Workplace relationships are not the only means of excluding women from certain occupations and positions; company policies can also indirectly discriminate against women. Maternity leave, career breaks, opportunities to return after having children, part-time working, job sharing, term-time working, working from home and workplace nurseries are all areas where companies could encourage and assist women in male dominated occupations (MccGwire 1992: 27-37). However, as MccGwire (1992) found during her study of fifty British companies, few will consider implementing these options until there is a larger number of women in an occupation.

In order to perform to hegemonic masculinities men have to suppress emotions and needs, such as empathy and compassion, and stay in control of these emotions and needs, an act which is clearly demonstrated by pilots, especially those in the RAF. Michael Kaufman (1994) argues that a fear of not living up to these ideal masculinities and feelings of powerlessness can cause men to assert their power, whether that be at home, work or elsewhere. Failures and fears, he argues, can actually cause 'pain' (146-153). Thus men have contradictory experiences of power; it is both painful and rewarding.

> Many of the institutions of male bonding - the clubs, sports events, card games, locker rooms, workplaces, professional and religious hierarchies - are a means to provide safety for isolated men who need to find ways to affirm themselves, find common ground with other men, and collectively exercise their power (Kaufman 1994: 151)

Hence men will 'bond' in order to relieve some of the 'pain' of masculinities. They can reaffirm their own masculine identity by performing the appropriate gender for that situation and maybe exercise some degree of power. However it can be argued that women also experience 'pain' in performing gender. Women also have femininities, which they have to live up to. Women in male dominated environments may have to demonstrate masculinities. This in itself may cause identity conflicts or 'pain'. Thus women and men develop coping strategies to cope with these conflicts.

Women have to adapt to male dominated occupations and often develop strategies to fit in and to become one of the guys. Sally Hacker (1990) has noted that male engineering students feel that "relationships with females, other than for immediate, specific sexuality, would distract them from their work and drain their energy; hence the qualified acceptance of women students only as 'one of the guys'" (1990: 114). Cynthia Cockburn has found that "many female technicians reported having 'lost touch' with their female school friends, and that their closest friends were now the few other women in a similar position to themselves" (1985a: 60). Flis Henwood (1994) found that women engineers deny any difference from men; they want to be treated 'as equals',

thus they may play down their femininity to fit in. On the other hand Newton argues playing down difference, could be to discourage unwelcome sexual attention (1994: 3-11). However Hacker's (1990) work would suggest male work colleagues do not necessarily want sexual relations with female work colleagues. Women develop different managing strategies to fit into a male dominated environment; these example being just a few strategies. As we shall see in this thesis women pilots develop coping strategies to fit into the male dominated and masculine work cultures and practices. Yet men also have to adopt various coping strategies to fit into those same work environments. It can be as difficult for some men to fit in as it can be for some women.

Women In The Military

Barton and Sally Hacker (1987: 764) state that historically "armies became the first social institutions in which women held roles clearly and explicitly subordinate, not merely different". This subordination of women in military organisations had the effect of excluding women from the benefits and rewards of military life; namely the power and status that could be gained from success in warfare. The irony is that although women were excluded from most positions within the military, they have always been vital to its development in various support roles (Enloe 1983). For instance today large numbers of women are employed in the armaments industry (Segal 1987: 191-195) and the majority of women in the British Armed Forces are employed in administrative and operational support roles (Office for National Statistics 2000: 17).

Throughout history women have fought in wars. Some cultures have encouraged women to become warriors, for instance the legendary Amazon warriors (Hacker and Hacker 1987: 759; Rothery 1910; Wilder 1999). More recently, women fought in the First and Second World Wars and have taken part in countless civil wars (Wheelwright 1992). Thus women can and do fight when called to do so. During the First and Second World War women in Britain were drafted into occupations from which they had previously been excluded. "War became women's passport into the experiences and world of men", thus they could experience "the contradictory exhilaration, thrills, anguish and despair of the front lines of battle" (Segal 1987: 171). Near the front lines

women drove ambulances, were nurses and were dispatch riders. In the Air Transport Auxiliary (ATA) women were trained as pilots to fly bombers and used to fly aircraft to strategic locations, although they were forbidden from flying on missions (Segal 1987: 175). Symbolically war is associated with heroism and glamour, however for the men, and women, fighting wars it is often anything but heroic and glamorous.

In Britain in 1981 women constituted 4.8 per cent of the armed forces (Enloe 1983:129), rising to 7.1 per cent in 1995 (CSO 1996:157); a trend reflected in many other Western nations. Women's roles in the armed forces are having to be reconsidered by many Western governments due to manpower shortages and changes in technology. Women are increasingly being recruited into Western military forces due to difficulties in recruiting adequately qualified men, increasing equality and changes in military technology, possibly meaning that physical strength is less of an issue for both men and women (Dandeker and Segal 1996).

One stream of feminist thought sees violence as a male domain (e.g. Daly 1987, Dobash and Dobash 1992). However women do participate in violence, both the legitimated violence of war and the more 'private' (or domestic) violence. Thus simple biological essentialism cannot explain violence. Military institutions train, mainly men, to kill and harm other people without question, thus would seem "the quintessence of male power" (Segal 1987: 178). Military institutions and the images of the military as places of glory, heroism, excitement, thrills, brutality and strength - both physical and mental - are a central part of one form of hegemonic masculinity. They represent an ideal of masculinity and male power.

> The toughening up of the male combat recruit is not only a preparation for military practices, but also necessary to maintain the image of 'military manhood' as the pinnacle of manly daring (Segal 1987: 187).

The organisation and every day practices of military institutions are designed to promote this hegemonic masculinity. Soldiers have to be strong, hard, tough, unemotional, able to obey orders without question and dedicated, while also appearing very smart and professional. Some soldiers have to be leaders, yet they all have to work

as part of the team and participate in *l'esprit de cours.* In short they have to be part of the 'brotherhood'. This form of masculinity is not only limited to military institutions. The police and firemen are two other examples. As subsequent chapters will demonstrate both men and women have to 'perform' this notion of masculinity, which creates challenges and conflicts for all involved.

Arguments surrounding physical strength, pregnancy, sex and personal relationships have been put forward as reasons why women should not take combat roles, but no compelling evidence has yet been produced (Wheelwright 1992). The main objections to allowing women into combatant roles arise from the challenge it poses to the core identity of the military, which is associated with hegemonic masculinity (Hacker and Hacker 1987).

> The taboo on women firing weapons was, and is still, designed not to protect women but to protect the mythology, morale, motivation, prestige and privileges of the male solider, to uphold the idea of the inevitable masculinity of combat. And the taboo was, and is still, necessary to uphold the idea of the essential femininity of those who must 'be protected' (Segal 1987: 174).

Historically in warfare man has been seen as the protector of women and family (Enloe 1981). Women have been kept distant from combat to remove them from danger and allow men to concentrate on fighting. Thus manhood could be proved through combat (Hacker and Hacker 1987). "The male image of militarism, jealously guarded, also serves to deny or obscure women's relations to nationalism and militarism" (Segal 1987: 179).

Military technologies (e.g. weapons) are symbols of masculinity - as discussed previously in this chapter. Military institutions have structures and symbols promoting a particular form of hegemonic masculinity. Women entering these institutions and using military technology challenge this hegemonic masculine ideology, thus creating dilemmas for military policy and ideology, alongside wider society.

CONCLUSION

The concept of gender is not as straightforward as one may initially think. Feminist literature now recognises the diversity of masculinities and femininities, and the complexity of categories like sex and gender. However within all this diversity and complexity there are also striking continuities and convergences. Gender and technology, to varying degrees, are part of every social situation. Thus gender and technology are important aspects of our everyday lives. Both gender and technology are processes: we perform gender and produce technological knowledge. However technology also has a material side in the form of physical artefacts. It is useful to consider that gender and technology are mutually shaped and form a 'seamless web'. This mutual shaping of gender and technology is the approach used to both these subjects throughout this thesis.

Gender identities, structures and symbols all contribute to the sexual divisions of labour. In the workplace gender identities can make it difficult for certain individuals, men and women, to fit in with work cultures and practices. Exclusionary practices have kept women out of certain areas of work but women do enter male dominated occupations with relative success. There is a cost or 'pain' associated with entering these occupations for both men and women, but individuals develop coping strategies to cope with this 'pain'.

This research draws on several key concepts, the performance of gender, situational roles, the gender triad of symbols, structures and identities, the idea that hegemonic masculinities are part of the persisting male dominance of certain occupations, and the 'seamless web' of gender and technology. Gender symbols, structures and identities contribute to the construction of situational gender roles. These roles in turn influence individual gender identities, which are performed to conform - or not - with these roles. A 'seamless web' exists in this process of constructing gender, which in turn is linked to the construction of technology. These concepts form the foundation of this research into the production of gender within professional aviation.

Chapter 3

Research Methodology

INTRODUCTION

At the outset this research had no clear hypotheses to test and no fixed expectations of what would be found. I was interested to find out how women managed being part of a male dominated and seemingly masculine associated occupation. Of course personally I had some expectations of what pilots would be like, especially those in the military. My expectations have been influenced by popular images of pilots, for instance black and white films about the Battle of Britain or more recently *'Top Gun'*. This is unavoidable since I am a product of my social background and surroundings, namely a married, white, university educated, English woman. When undertaking this research I focused on its main aim, namely to examine the production of gender in professional aviation through the experiences of professional pilots. To fulfil this aim the main objectives of this study were first to unveil some of the cultures of aviation and the role of gender in those cultures. Second to understand how individuals fit into, and influence, these existing cultures of aviation in terms of gender identities, symbols and structures. Finally to compare this study with other research, such as that on gender at work and male dominated occupations. The role of gender identities was particularly explored in this study. Data was collected through the use of interviews and observation.

This research began with a small preliminary study of female airline pilots, with the aims of identifying key research questions and areas of interest for the fuller study. This chapter first discusses the preliminary study and its main results. It then moves on to discuss the wider study of the RAF and various airlines, explaining the questions and objectives behind the research, together with the methodological

approaches used. The analytical approaches to the data are then outlined. Finally I examine my role as the researcher. Throughout this chapter I explain how the research objectives were attained.

THE PRELIMINARY STUDY

For the preliminary study I conducted semi-structured interviews with three female airline pilots in Scotland. These interviews were conducted individually, but on one occasion additional time was spent interviewing two pilots simultaneously. I also had the opportunity to conduct a second telephone interview with one pilot to gain additional material. The interviews lasted from 45 minutes to over an hour and were all conducted by myself. I used personal contacts and snowballing techniques to gain the co-operation of the pilots.

The main aims of the preliminary study were to examine the roles of women and gender in aviation, alongside highlighting areas for further study. I was interested in what positions women occupy within professional aviation and how gender identities are produced within those positions.

The interviews contained general background information as well as questions on the motivations and influences in becoming a pilot, flight training experiences, experiences working as a pilot, relationships with work colleagues, and questions about their private lives and outside interests.

These three interviews were analysed under two broad headings. The first was *becoming a pilot*, which included their past experiences, attraction to flying and flight training. The second was *being a pilot*, which included all aspects of their life since qualifying as a pilot. These categories gave me a basis for analysing the influence of structures, power relations and individual identities on gender and career choices. They also allowed for comparison between different aspects of the female pilots' lives and the drawing of any parallels between the three pilots. As well as analysing parallels and distinctions between the pilots' life histories, I also looked at

each individual's life as a whole to try to put their choices in the context of their own situation. In this way I could identify the differing turning points in each individual's life.

The women made differing occupational choices before deciding to become a pilot; none of them choosing a direct route. They indicated it was the thrill and pleasure of flying which attracted them to being a pilot. This was such a strong theme in all the interviews that I decided to pursue it during the wider study. Family, friends, teachers and work experiences also all affected the decision to become a pilot in differing ways.

Being highly visible, both within the airline and in society, was a fact of life for these women. The preliminary study indicated that whilst these women were aware of no overt discrimination, there was a pressure for them to prove their competency both to work colleagues and to themselves. I found that hierarchical divisions existed within aircraft personnel, both between the cabin crew and flight crew, and the captain and first officer. From all staff the captain receives "automatic respect". For the women there appeared to be tension between being one of the 'girls' with the cabin crew and one of the 'guys' with the pilots. How this was resolved varied from individual to individual. Thus it become clear that fitting in with existing social structures and relations was important, but not straightforward, for women. This led me to ask several questions. Is fitting in also as important, and as problematic, for men? What constitutes this role they seem to be fitting in with? What methods do individuals use to fit in with the apparent pilot role?

The preliminary study also indicated that, in their private lives, the women pilots had to demonstrate that they were feminine, in line with social conventions. Domestic relationships could be strained since these pilots did not fulfil the role of the conventional wife or partner. This was due both to their own gender identities, which did not fit with stereotypical notions and also to the unsocial hours and travel involved in their job. I began to question how far the job impinged on the private lives of both female and male pilots. The preliminary study showed that there is a conflict for

female professional pilots between their public and private lives, although individual experiences can differ greatly.

I found that the three women did not pursue any technical interests beyond work. However I could not determine if differing styles of flying existed. Initially I aimed to explore differing gendered styles of flying, as in the studies done by Turkle and Papert (1990) and Turkle (1984) on computing for instance. There would be difficulties in attempting to observe different styles of flying. First, it is usually impractical to fit an extra person in the cockpit. Second, flying is highly regulated and pilots follow strict procedures, which may mean there is little variation in styles. Hence during the course of the preliminary study it became more important to understand the role and socialisation of the pilot when examining the experiences of male and female pilots.

This preliminary study was very small; hence possibilities for analysis were rather limited. However I learnt practical lessons in conducting interviews and analysing data, along with the difficulties of arranging interviews with airline pilots. It also demonstrated the need for including men in the fuller study, since gender is not only about women. The need to focus on the social structures and relations within aviation, alongside individual, and collective, identities was also made clear during the preliminary study. Finally this small study also highlighted the areas which were the focus of the broader research, which are discussed next.

AIMS, OBJECTIVES AND RESEARCH QUESTIONS

I previously stated the main aim of this research was to understand the production of gender within professional aviation. Sandra Harding (1986) defines three aspects of gender: individual gender, gender symbolism and gender structure.[1] In this research I aimed at understanding how all these components of gender are constructed in both the public and private lives of professional pilots, both men and women.

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[1] These three aspects of gender are discussed in more detail in Chapter 2.

To fulfil this aim I first needed to understand the world of professional aviation. Hence the first objective was to identify some of the cultures of aviation and the various aspects of gender within those cultures. The next objective was to understand the role of individual pilots and identities within those cultures, during which I explored structures, symbols and identities. The final objective was to make this research of general use by comparing it with previous research on gender at work, technology and gender, male dominated occupations, and gender and military.

This research has focused on four main questions:

1. Do pilot roles exist and how are they constructed? Or more simply *what is the 'right stuff'?*

2. What are the cultures of aviation and how do gender symbols, gender structures and gender identities interact to construct and produce the dominant notions of gender which exist within those cultures? Or *what are the cultures of aviation and how is gender constructed within those cultures?*

3. What relationship and feelings do pilots have towards aviation? Or *do pilots find flying a 'thrill' and why?*

4. What gender identities do individual pilots perform and how does this affect gender within aviation? Or *how do individual pilots affect constructions of gender within aviation?*

In identifying a pilot role, I have used the concept of a 'situational' role, which is open to interpretation and flexibility.[2] This first question aims to establish if roles exist within professional aviation which pilots try to emulate, and focuses on the interaction between symbols, structures and identities in constructing these roles. A particular focus of this question is symbolic side of gender in aviation, alongside how

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[2] Role theory and the 'situational' role are discussed fully in Chapter 2.

pilots and organisations construct various roles for the professional pilot. However this question also addresses the parts organisations and individuals play in forming this 'right stuff'. In the second question the notion of gender performance is crucial. This question explores how the various aspects of the gender triad interact within professional aviation - both within aviation organisations and the public and private spheres of pilots' lives. The question particularly focuses individual gender identities within the framework of gender roles and aviation cultures. These issues can be related to other sociological studies of male dominated occupations. The third question is concerned with the relations between individual, gender and technology. This question is focusing on the pilot as a user of technology and the pleasure that can be derived from that usage. The fourth question is concerned with how individuals fit into various work cultures and how individuals can influence and/or change constructions of gender.

RESEARCH DESIGN

To address these research questions I conducted a qualitative study of several groups of professional pilots, using both interviews and observation. Quantitative methods would not have allowed the depth of exploration that was desired. It would be difficult to design a survey that covered the range and depth of issues required to understand identity, social relations and relations with technology. Following up on any unexpected issues would also be problematic (Robson 1993); therefore qualitative research methods were more appropriate for this study.

Initially including private pilots, such as those flying for leisure or as a hobby, was considered when planning the wider research project. This would have been an interesting comparison since 6 per cent of private licence holders are women compared to the 2.4 percent of professional licence holders (CAA 1997). The larger proportion of women in private aviation could be due to a number of reasons, from easier access to private aviation being more attractive to some women. However it soon became clear, when data collection started, that data from this additional group would mean either collecting less professional pilot data, which was not appealing, or expanding the size of

the study, which was unpractical. Concentrating on professional aviation provided a more coherent focus, since it is an occupation rather than a hobby. It is also an occupational group that has not undergone such a sociological study in Britain before. Studying an occupational group also allowed for easier comparison with other research on gender and work. However private pilots remain an interesting social group for possible further research, especially with reference to gender and technology.

When designing social research it is important to understand any problems that may occur with the design of that research, and how to resolve or work around such problems. One particular issue with regard to external validity that arises within any social research is that of representativeness. Conventional social science methodology argues that generalisation and replicability of a study are important for contributing to wider theoretical issues (Hakim 1987; Schofield 1993). Such generalisation can be problematic with qualitative research.

This research is more of an exploratory study on an occupational group never before investigated in this way. Hence generalisability was not a priority, and a specific focus was more manageable. In this research I have used two main research methods - observation and interviews - in order to gain an in-depth insight into my sample population. This research can never truly be shown to be representative of the wider pilot population but can give indicators of the nature of gender and the roles of the pilot in aviation, alongside the cultures of aviation and the socialisation of pilots.

Due to the problems associated with generalising qualitative research the concept of 'fittingness' has been developed by some social scientists. 'Fittingness', "with its emphasis on analysing the degree to which the situation matches other situations in which one is interested, provides a more realistic and workable way of thinking about the generalisability of research than do more classical methods" (Schofield 1993: 206). For this research it is more realistic and workable to compare and contrast situations and studies, than it is to generalise. For instance comparing the training experiences of pilots with that of other professions and the experiences of female pilots with women in other male dominated occupations. However, just because one factor may be

comparable it does not mean than others will be applicable. Each study has to be analysed within its own contextual background.

Comparison Between Various Pilot Groups

In this research I have not studied whole organisations but individual pilots within various organisations. As we can see in Table 1, of the total 49 pilots interviewed, 28 were from the RAF and 21 were from six civil organisations. This formed the first comparative element of the study. Military and civil pilots are not exclusive social groups, since some civil pilots have previously been military pilots and, for a small number, vice versa. In the sample of civil pilots six were previously professional military pilots, while none of the RAF pilots had worked in civil aviation.[3]

Table 1: Breakdown of Interviews Conducted

Professional Pilot Interviews	Total	49
	Male	28
	Female	21
	RAF	28
	Civil	21[4]
	Students	22
	Experienced	27
Interviews with Related RAF Personnel	Male	4
	Female	8
Total Number of Interviews		61

The inclusion of both civil and military pilots has made it possible to explore the contribution of these two types of organisations in constructing notions of the 'right stuff' and the roles of the pilot, alongside organisational influences on gender identities and relations with technology. These organisations are part of the cultures of aviation and participate in the construction of those cultures. There are variations in how these organisations influence pilots and gender identities. Hence comparisons of such social

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[3] Some of the civil pilots had also flown in university air squadrons but only as students, not as professionally qualified pilots.
[4] This figure includes the three interviews conducted for the preliminary study.

structures are important to understand particular cultures within aviation and how they fit into wider society.

Military organisations have a very particular culture and ideology, which is based on their history as male dominated organisations, as discussed in the previous chapter. For a start this makes them inherently interesting when researching gender. The influence of this particular culture on civil organisations, and vice versa, is one reason for conducting a comparison. However the similarities and differences between these two social structures are also important in shaping the experiences of pilots today.

Unlike the RAF, which acts as the military case study, no one airline or commercial aviation organisation agreed to have a large number of their pilots interviewed. Thus a comparison between the RAF and a single civil organisation was not possible. Two civil aviation organisations were very co-operative with this research, a pre-eminent pilot training college and a regional airline. These provided twelve of the civil pilots; the rest were obtained through personal contacts and a process of snowballing. The cohesion of studying one organisation has been lost in using this approach for civil aviation, however I feel it has allowed this research to reflect a wider understanding of professional flying in Britain. I have gained insights into the roles and experiences of many varied types of pilot and flying. I have also found that one organisation, for instance the RAF, can contain great diversity, while the numerous civil organisations have many similarities.

As shown in Table 1, 28 male and 21 female pilots were interviewed. This formed the second comparative element of this research. Gender is not a one sided issue, it involves both men and women. To understand the processes involved in creating gender identities it is important to investigate both male and female perspectives. Also the experiences of male and female pilots revealed much about how the role of the pilot is constructed and perceived, as shall be seen in subsequent chapters. Researching the lives of both male and female pilots allowed me to explore the role of masculinities and femininities within aviation, and the meanings attributed to gender and technology by

both groups. There were many similarities and differences between male and female pilots, although, as expected, neither of these two groups proved to be homogeneous.

The decision was also made to examine both student pilots and experienced pilots.[5] The experiences of student pilots were used particularly for exploring the training and socialisation of pilots. For the majority of student pilots the training formed the core of their flying experience. The data from operational pilots has revealed much about how individuals gradually adapt to expected norms of behaviour within aviation. The data from both groups is useful for examining change within the attitudes and behaviours of pilots. There are differences between students and operational pilots that are due to different amounts of exposure to the cultures of aviation. Thus to see this change overtime, without having to study the same pilots over a number of years, investigating both these groups has proved crucial.

In addition to the pilot interviews, 12 other RAF staff were interviewed, including seven navigators, one airman and four air loadmasters (ALMs).[6] Although these interviews were conducted on an ad hoc basis, namely when the opportunity arose, they proved to be a valuable data source. In particular these interviews have confirmed some of the problems and issues that arise when individuals try to fit into the organisational culture - especially women - as is discussed in Chapter 7. Such sporadic interviews provided only a taster of some of the wider issues for military personnel and this would also be an interesting area for further research.

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[5] In the RAF this distinction is clear and easily drawn. Once a pilot has completed all their training they enter an active or "front-line" squadron and become operational. However they do not always undertake full squadron duties, such as secondary duties, until they have gained some experience. In the commercial airlines, pilots who have obtained their licence, but are inexperienced, are trained on the job, flying with fee-paying passengers. Hence they may be operational in the RAF sense, but they are still in training until they no longer need to fly with a training captain. I will use the term operational for experienced pilots, however some airline pilots actually on the job are classified as students because they were in training at the time of the interview.

[6] Beyond navigation the job of the navigator can also include controlling weapons and communications amongst other things. Navigators are also commissioned officers, as are air loadmasters. They will perform various functions in the rear of the aircraft, as will airmen, who are non commissioned officers (NCOs).

DATA COLLECTION METHODS

Access and Selection

My first problem when undertaking this research was gaining access. I have mentioned the problems with civil organisations. The main reasons given by airlines for not participating were time and cost to themselves. However the RAF was very receptive to the proposals for this study once security clearances had been received. The RAF would not undertake a sociological study of this type by themselves, hence they thought the findings may be valuable.

So how were individual pilots selected for interview? Different approaches had to be adopted for the RAF and the civil organisations. The selection of all pilots was based on their availability within the UK, excluding Northern Ireland, due to travel costs. The aim was to have a sample comprising of half male and half female, 50 per cent military and 50 per cent civil, and half students and half experienced pilots. As can be seen in Table 1, this is approximately what the sample comprised, with slightly more RAF and male pilots. There were also slightly more experienced pilots than students. I also initially aimed to gain a spread of pilots across various age groups. However due the ad hoc nature of much of the selection process, only 30 per cent of the final sample of pilots were over thirty and most of these were under forty.

Once approval had been received from RAF Command, I received a list of all the female pilots in the UK who were available to be interviewed, including the type of aircraft they flew or their stage in training. Thus I selected pilots who were geographically accessible from a variety of stages in training and various types of aircraft. The RAF suggested that once I had arranged to visit a particular squadron, I could then arrange to interview an 'equivalent' male pilot (or pilots) to the selected female pilots (or pilots). Availability at the time of my visit, willingness to be interviewed and aircraft type flown were the main factors considered when male

pilots were selected for interview.[7] Male pilots were usually selected on my behalf either by the female pilots or by squadron commanders. There was no 'scientific' method used in selecting male RAF pilots; rather it was an ad hoc process. Also due to the rapid changes that can occur in the plans of RAF pilots, some of the women originally selected for interview became unavailable during the course of the fieldwork. One factor was an increase in RAF activities in the Middle East during my fieldwork.

I did meet some initial apprehension from pilots either when I contacted them to arrange a visit or prior to being interviewed; many were unsure about the nature of my research. I found that a variety of details had been given to people either from flight command or their immediate bosses, so the pilots had many different preconceptions about my research. However in general once I had explained the nature of my study, and that all interviews were to be kept anonymous, they were willing to be interviewed, and on some occasions observed.[8] The nature of my study - namely examining the experiences of pilots and their perceptions of the job and aviation - was explained to all interviewees either when the interview was being arranged or prior to any questions being asked.

Sara Arber argues that through personal recommendations the legitimacy and validity of the researcher are established within the community to be researched (1993: 73-74). I found this true in two senses. With the RAF, after interviewing one or two people, I usually found they explained to other potential interviewees what my research involved and the types of questions I asked. They then seemed to accept me more readily both formally during the interviews and informally in more social settings. This second hand passing of information may have influenced the outcomes of the interviews, but I did not get that impression in most instances. The fact the RAF Command had allowed me access also gave me vital legitimacy.

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[7] As far as I am aware all the pilots interviewed participated voluntarily.
[8] I use no real names to identify my 'subjects' and where names are used in this thesis they are pseudonyms.

Many of the civil pilots were approached via personal recommendations. Thus they were either approached on my behalf or by myself. On the whole I found people were quite willing to be interviewed. I experienced two problems with using this snowballing technique. First, the flying community in one region can be quite small and I was concentrating on southern Scotland. Thus after a time people tended to recommend others pilots who I had already interviewed. Second, sometimes a pilot just did not want to involve other people from their workplace. However snowballing did give me an insight into the social networks of civil pilots in this region. Other civil pilots selected from the training college and airline were people who happened to be available during my visit. Although most pilots were selected on an ad hoc basis, there were still many common threads amongst their experiences.

Interviews

The predominant method of data collection involved semi-structured interviews. I conducted the interviews and other fieldwork between March and November 1998. The interviews varied in length from 30 minutes to nearly 2 hours.[9] Most interviews were conducted individually in private, either within airline, flying school or RAF offices or on a few occasions at the person's home. Two pilots were interviewed together since they felt restricted for time. All the interviews were recorded on tape, with notes being taken during and after the conversation. The interviews were loosely structured, since this allows for a more relaxed and conversational style of interview. This can also permit a greater depth of response and investigation than a rigid schedule. However it did mean that it was sometimes difficult to decide on the spot whether every topic had been covered adequately.

Detailed interview schedules were prepared (see Appendix A). A basic schedule was used for pilots in training, first covering background information, motivations and influences in becoming a pilot. These aimed to investigate the attractions of flying, the thrill and technical interest of flying, and the effects of social relations and structures on

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[9] Three of the interviews with university air squadron students lasted from 15 to 30 minutes due to limited access or a lack of flying experience.

individual choices. Questions on pilot training experiences were included to examine the socialisation of pilots and the role of work relationships. I also asked questions on the nature of the job, investigating attitudes to flying and aviation technology, the changing role of the pilot, attitudes to women pilots, being in the military and images of aviation. Finally questions on life outside of work were asked to gain an insight into the interaction between the public and private spheres of the pilots' lives.

Additional questions were asked to operational pilots concerning work relations, again to explore the socialisation of pilots and also individual identities. More additional questions were also asked to instructors aimed at understanding the role of the instructor in shaping a pilot and constructing notions of the 'right stuff'. The same interview schedules were used for other military personnel, excluding questions on the nature of the job, which were specifically aimed at pilots. These interviews were used to gain additional information on work relations and the inclusion of individuals into existing social structures.[10]

The interview schedules changed during the course of this research. The preliminary study indicated the importance of examining male and female pilots, the thrill of flying, fitting in and the socialisation of pilots. Hence as I have already discussed both men, women and pilots in training were interviewed. However at the start of the main data collection - beyond the points already noted - the main themes to be explored remained flexible. There were still many unknown aspects that may have arisen, for instance what male pilots and the RAF would reveal. During the course of the first dozen or so interviews the importance of image in terms of pilots and gender alongside risk became clear. Thus from about half way through the interview process, questions on these topics were included.

An exploratory study like this will evolve over time. The problem with such 'evolutionary' research is that not every interview will contain detailed data on every

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[10] Details of all the interview schedules for operational pilots, pilots in training, instructors and other RAF personnel can be found in Appendix A, along with the additional questions asked in later interviews.

topic. For instance the data collected on pilot images is very incomplete and can only give a sketchy view of attitudes. However as I have previously stated this research is intended as exploratory, hence these changing focuses were part of the exploration. Second interviews would obviously help fill any gaps, but they were not possible on this occasion for reasons of time and finance. Initially I did consider doing second interviews but this would have been at the expense of breadth of the study. Finances only allowed for a certain degree of travel. For second interviews to have worked effectively I would have had to significantly narrow the RAF interviews to one or two bases, thus limiting my exposure to different types of flying and training within the RAF.

The preliminary study highlighted various shortcomings in conducting interviews solely with one social group. Interviewing alone did not provide a good understanding of the work environment of pilots and their approaches to the job. The main problems I experienced with my interview questions during the preliminary study were in gaining an understanding of the pilots' relationships and approaches to using technology in and outside of work. My second main problem was in determining what pilots considered to be the cultures of aviation and what images are associated with that culture. The preliminary study also indicated the need for myself to acquire certain background knowledge, such as aviation terminology and greater understanding of the experience of flying an aircraft. Hence additional data collection methods beyond interviewing were needed.

Observation

The second method of data collection involved observation, which on a few occasions became participant observation. At the outset of the wider research project it was planned that I would shadow pilots during their working day, except where this was impractical, such as during flights or sensitive meetings. It was expected that I would observe each pilot for a few days to gain a feel for their job and further insights into their working lives.

In principle this proved to be acceptable to the organisations. My first data collection experiences were with the RAF. The RAF pilots were approached by their commanding authorities who explained the research project to them and asked if they would agree to being interviewed. Thus, as far as I am aware, participation was voluntary. Some pilots felt that my presence for several days would be a great inconvenience. Hence there were many interviews, but limited occasions for observation. I managed to shadow a handful of pilots, ranging from an afternoon or morning to a couple of days. When I contacted any particular squadron I tended to be assigned to follow one individual, but then interviewed many others during that visit.

Most of the RAF observation occurred within the training establishments. I had one opportunity to observe a training flight, but most of the observation occurred while sitting in on briefings, coffee breaks, meals or during evening social gatherings. The social gatherings were particularly useful for seeing how people's identities varied, or not, away from work, and for understanding the cultures of aviation. Of course at social events I participated in the conversation and my very presence influenced it. I would ask questions as the opportunities arose and also answer questions. This was not passive observation. We have to address the question of how representative is this observation data considering the influence of my presence? As I will discuss later the researcher will of course influence the data collected.

In civil flying the opportunities for observation were even more limited, since most interviews were gained through snowballing. At the training college again I had the opportunity to meet people at social gatherings and during the interviews, but otherwise not in a working context. The one airline that agreed to my presence only really allowed me access for interviews, although I did meet other pilots and cabin crew in their crew room.[11] Thus most of the observation data comes from the RAF.

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[11] The crew room being an area set aside for flight crew - pilots, stewards, etc - where they can have drinks, food, do some planning or just relax. From my experience such a space seems standard to most aviation organisations, as is the terminology.

My participant observation, beyond social gatherings, involved taking three flying lessons. Thus I gained a basic understanding of flying terminology and how to fly an aircraft, alongside what it feels like to fly an aircraft. The feeling aspect was important because pilots talked about the thrill and excitement of flying. I must admit that I did feel that excitement and thus could imagine the feelings that the pilots talked about. Being a pilot student, however briefly, also gave me an insight into the instructor-student relationship. The flying lessons were in a private aircraft where the emphasis of training does differ from professional flying. As one pilot commented during an interview, private flight training is about being safe, while professional training is also about completing the job successfully, whether that be transporting passengers, goods, surveying an area or using weapons (i.e. professional flying is about being 'professional' - an aspect discussed in later chapters).

Other Information Sources

Finally data has also been used from other sources. Data was collected through interviews with three airline personnel departments and managers at the training college. Time was also spent at the RAF Officer Aircrew Selection Centre (OASC), both observing the recruitment processes and interviewing senior staff at the centre. The other sources used include Civil Aviation Authority (CAA) regulations and statistics, organisational training syllabuses and recruitment literature, not to mention aviation literature. These sources were particularly useful for understanding the formal socialisation of professional pilots. Textual analysis of recruitment literature and aviation literature was also useful for exploring the images of aviation.

These sampling methods led to a vast diversity of data, with all the problems associated with examining such diversity and drawing any meaningful conclusions beyond the individual case.

DATA ANALYSIS

I did not start this research with any strict analytical framework in mind.[12] However one objective of this research was to yield data that could be compared with other work. Thus in analysing the data comparisons have been drawn with other studies on gender and technology, on women in male dominated occupations, on the role of the military and on institutional socialisation processes.

In this research, data was analysed using an approach based on Harding's (1986) definition of gender. Thus the interaction between social structures, symbolism and identities has been a continual concern of this study. Using this framework, I have explored the interactions between pilot gender identities, collective and individual, social organisations and aviation symbolism.

During the course of this research several main themes for analysis were identified, which are reflected by the research questions. These themes mainly emerged during the course of the interviews and were developed as the data collection progressed. These themes have taken this research far beyond the initial desire of the preliminary study to examine the experiences of women in aviation.

Themes

1) The importance of *gender symbolism within aviation*, reflected through specific images, became evident. These images influence, and are influenced by, organisational perceptions of what it takes to be a pilot and the perceptions of pilots themselves; namely self-identity. I have adopted the notion of the 'right stuff' to incorporate the symbolic meaning of these images. The 'right stuff' has many gendered meanings. The importance for examining how gender symbolism interacts with identity and structures to produce constructs of gender became clear from this theme. Thus data on pilot recruitment and from interviews with

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[12] I started this research with Sandra Harding's (1986) approach to gender in mind, and the understanding that gender and technology are mutually shaped.

pilots on their perceptions of the 'right stuff' were analysed for this theme, resulting in Chapter 4. However my exploration of symbolism is only partial and is, like much of this research, exploratory. Examining gender symbolism in aviation could be an area for future research.

2) The second focus involved the *socialisation of pilots,* and how individuals fit in with dominant cultures and gender ideologies, whether they are societal, organisational or more local to pilots themselves. This theme also addressed fitting in and challenging established gender identities. Aspects of the pilot training, together with the relationships between pilots and other groups were analysed for this theme. The interactions between individual identities and collective identities were particularly important in analysing this aspect of the research. The results of this analysis can be seen in Chapters 6 and 7.

3) Notions of *risk and excitement* were also analysed. My own feelings towards the fun of flying obviously acted as a reference point. However questions on how pilots perceive the risk of flying and why they find it exciting, or not, provided the main source of data for this theme. This theme demonstrates the links between gender and technology by examining aviation technology as a source of pleasure and examining any gendered usage. This theme forms the basis of Chapter 5.

A process of identifying, as far as possible, the various cultures of aviation had to be conducted throughout this research. There is an overall aviation culture, which pilots feel they are part of. However there are also organisational cultures, such as that evident within a particular airline or the RAF. Another aspect of the cultures is based on types of flying, for instance military vs. civil. This is not a clear-cut dichotomy with similarities between the cultures of airline flying and military transport aircraft, and also between the various forms of helicopter flying. In the military there are clear differences in the cultures between fast jet, rotary and multi-engine flying. In identifying these various cultures data on the social interactions of pilots was used, alongside their attitudes and perceptions of aviation, both general

and particular. Similarities and differences were sought both in the behaviour and attitudes of pilots, which could then be used to define a particular group.

Practical Techniques

On a practical level, data was coded both manually and with the assistance of computer software. The computer package Ethnograph was used initially but this proved inadequate. With this package there was the temptation to code every piece of data and it proved difficult to link codes effectively. Hence a combination of Microsoft Word, Excel and Access were used for the majority of data analysis. Spreadsheets were used for some quantitative analysis of the data, while Word was used to compile lists of coded data. Finally through a combination of an Access database and the Word documents, coded data could be linked and cross-examined.

The coding reflected the main themes of the study. Coded data was compared using the comparative elements of male/female, military/civil and student/operational pilot. Distinctions between civil and military pilots have been drawn throughout this study, for instance for analysing the various notions of the 'right stuff', to the training and socialisation of pilots, and how individuals fit into both these types of organisation. Similarly distinctions between male and female pilots have been used throughout the analysis. However comparisons between students and operational pilots have mainly been used when analysing socialisation and individual gender identities. Other groups of pilots were also compared once data had been coded (e.g. fast jet and multi engine pilots, instructor and students, older and younger pilots, etc).

As often as possible the data was initially analysed immediately after the interview. Thus the main themes and points of interest from an interview could be identified immediately. However with the RAF data, this was not always possible since most of the interviews were conducted in a short period of time, which also involved a lot of travel time. Hence not all the data from the interviews was consistent. In the final analysis, which was conducted once the interviews had been fully transcribed, a lot of data had to be excluded, since it did not fit with the aims of the thesis or the

research questions. A lot of data was collected that did not fit with the final research questions since these changed over time and became sharper as the research progressed.

It also has to be noted that the interviews with other RAF personnel have not been referred to much in this thesis. These interviews were transcribed and analysed to some degree. However again the data was not always useful for the particular research questions addressed in this thesis. Finally the shear quantity of data, time limitations and problems in comparing the data of the pilots with other RAF personnel, meant that in the final analysis of the data these interviews were largely excluded.

THE ROLE OF THE RESEARCHER - INSIDER OR OUTSIDER?

In one fieldwork situation interviewees had been informed, by a superior, that my research was on sexual harassment. Their reactions towards myself and their behaviour were influenced by this preconception. However once I had conducted a couple of interviews and some observation, they realised the focus of my research was quite different and their behaviour changed again. As a researcher I did not even have to be present to influence behaviour. This is just one example the effect of an 'outsider' can have on a situation.

Feminist epistemologies can be roughly split into three camps; feminist empiricism, standpoint theory and situated knowledge. It is by examining these three approaches that I have come to understand my own role as a researcher.

Feminist empiricism argues that if more women enter science then it will become less biased and more objective (Harding 1986: 24-26). The biases of sexism and androcentrism can be corrected by adhering to strictly objective forms of scientific inquiry. However this seems to involve women just adapting to present scientific practice, which would involve very little actual change (Harding 1991: 111-118). Thus I did not find this an acceptable approach for my own research.

Feminist standpoint theory argues that women's subjugated position can provide them with a more complete understanding of society then men, whose dominant position only gives them a partial understanding (Harding 1986: 26-27; Harding 1991: 119-136; Klein 1989). Thus women have the advantage of a "view from below" as opposed to a "view from above" (Mies 1993: 68). However women's experience is not homogeneous. Women's experiences can be divided by race, class, culture, age and so on. This leads to the feminist postmodern view, which tries to allow for many "fractured identities". (Harding 1986:28; Harding 1991: 138-163). How can a coherent picture be created if every aspect of an individual's identity is taken into account? At some point you need to draw a line and the question is where? This study focuses on specific aspects of individual identity, although this cannot be fully analysed without recognising a person as a whole. I have endeavoured to achieve this balance in this study of aviation.

Conventionally objectivity and detachment from your research 'subject' have been valued in the social sciences (Mies 1993). Ann Oakley explains that "both interviewer and interviewee must be 'socialised' into the correct interviewing behaviour" (1981: 35). Namely the conventionally assumed relationship, with the interviewee as passive, and the interviewer as friendly but detached, and being careful not to influence the research data.

The interview situation can seem to be an exploitative relationship. It is argued that if the researcher can identify with the 'subject', then the relationship is less likely to be exploitative, since both parties may gain something from the research process. For instance, Oakley (1981) in her research of pregnant women became their friend and attended several of the births. Thus she allowed herself to become personally involved. From her relationships with the women she gained insights into pregnancy and childcare, whereas the women gained reassurance and a willing listener to their anxieties (42-50). It can be argued that this approach will compromise objectivity and the research results will be too subjective to be of value. However where it is possible to identify with the interviewee I have found this actually enhanced the depth and

sincerity of responses. For instance going to the bar with pilots meant that issues were often discussed in a much more relaxed manner. Having done some flying also made me more credible; it made me one of them.

As a woman I can relate to some of the experiences and decisions made by some of the pilots, yet my life experiences are also quite different. I found in some situations I could relate more easily to the women than the men and at other times vice versa. Thus I could not be truly detached from my 'subjects', yet I was also distanced from them. In the word of Maria Mies (1993: 68) I have used "conscious partiality", namely a partial identification with my research 'subjects'.

Donna Haraway (1988) argues for "situated knowledges", that are not universal. In this research I lay no claims to universality, but I do aim at being able to relate to sexual divisions within society. As a researcher and a woman I can also lay no claims to being unbiased, but have aimed at being reflexive, both in terms of my reaction to the pilots and their reaction to myself.

Klein (1980) argues that feminists need to be flexible enough to adapt their methods to the needs of individual research situations (p96). There is no one correct way to conduct research into gender. Thus it is with my own 'situation' in mind that I have conducted and analysed this research. However I have drawn limits on reflecting on every aspect of my identity and those of my 'subjects', but I think it was important to be aware of my own role in the research process. At times I have found myself an insider into the world aviation, yet I have always been an outsider as far as organisations are concerned.

REFLECTIONS ON THE RESEARCH METHODS

During the course of this research I have identified several weaknesses with the research methodology used and the data collected. The first of these is having too broad a data sample. The interviews covered a wide range of types of flying, which allowed the data to explore many different aviation cultures, however to some extent

the depth of investigation was sacrificed for this breadth. There were a number of interviews that lacked data on some of the main themes. Time and financial constraints during data collection meant that sometimes I concentrated on achieving a certain quantity of interviews, from a wide variety of sources, rather than on having fewer more in-depth interviews.

The second weakness arose from the semi-structured style of interviewing I adopted. The interviews had a loose structure and I followed particular areas of interest as they arose during the conversation. This meant that interviews were very relaxed which was beneficial, but at the same time all the main themes were not always covered and, sometimes, basic data was missing, such as age and family background. Second interviews, combined with systematic analysis of the data as the research was conducted, would have helped solved this problem. Unfortunately it was not possible to conduct second interviews, whilst maintaining the breadth of study, due to limited finances.

This links with the third weakness, which was the emergence of new areas of interest and the changing interview schedule. During the course of the first 10-15 interviews the importance of risk and images became clear, hence it was only in later interviews that these areas were covered in some detail. So at least a quarter of the interviews lacked data on these two important themes; which combined with the loose style of interviewing meant there were large gaps in the data collected and problems with comparing results.

The final major weakness is with the focus on interviews and the lack of other types of data collection. There was some limited observation, which was very useful, but with better planning and data recording, these opportunities for observation could have been better utilised. The majority of data for this research was in the form of interviews, which meant that it has been difficult to draw conclusions or investigate certain areas of interest. For instance, more exposure to social interaction of training groups could have revealed more about how course bonding occurs or observing

more pilot training could have revealed more about the instructor-student relationship.

There are numerous ways in which the research could have been approached differently which would have resolved some of these problems. I feel there are three main ways in which this research could have been strengthened: more focused data collection, a better preliminary study and planning, and using a variety of data collection methods.

By concentrating on one or two small groups of pilots this research could have gained deeper insights into the production of gender within professional aviation. For instance, following one group through training over a period of time - conducting several interviews with the same individuals - would have revealed more about the changes pilots go through as they adapt to the various pilot roles and aviation cultures, and the problems which can arise. Comparing one such group within civil aviation and one in the RAF would have been particularly interesting. This would have resolved some of the weakness of breadth and gaps in the data collected.

Having a slightly larger preliminary study with a wider variety of pilots may have revealed some of the key themes earlier and meant that that the data collected would have had fewer gaps. For instance, interviewing 10 professional pilots, both male and female, from a variety of types of flying within the RAF and civil aviation, would have highlighted the main themes across these types of flying before the main fieldwork. The preliminary study of three airline pilots was too focused and narrow to reveal all the key areas of interest across the numerous cultures of aviation. Such a preliminary study would then have allowed for better planning of the interview schedules and data collection techniques. It could also have revealed weaknesses in the loose and semi-structured style of interviewing I adopted. An interview schedule and technique which began by being more structured, collecting basic data then moving on the more relaxed semi-structured style, would have meant there were less gaps in the basic data, whilst also allowing for the freedom to explore particular areas of interest with an individual. This would have been particularly useful where only

one interview was possible, as was the case with all but one of the pilots in this study.

Finally, this research could have been strengthened by using a wider variety of data collection techniques. A better preliminary study could have revealed the problems with certain techniques, for instance observation, which would have allowed for better planning of the use of such techniques. A combination of more focused interviews following the same individuals over a period of time, with better observation of these same people and focus groups - possibly introducing some new individuals into the data sample - would have maximised the quality and depth of data collected, whilst also keeping some of the breadth of study. Such an approach could have allowed for stronger conclusions in the key areas of interest.

CONCLUSION

The aim of this research is to understand the production and construction of gender within aviation. To achieve this I have identified the cultures of aviation, the roles of individual pilots within those cultures and compared this study to other research in the fields of gender and technology. Initially a preliminary study was conducted on female airline pilots, which determined the direction of the fuller study. The focus of this research was to determine what is the 'right stuff', where gender and aviation cultures meet, if and why pilots find flying a 'thrill', and how the hegemonic masculinity of military aviation compares with civil aviation. This was achieved through semi-structured interviews and observation of professional pilots in the RAF and various civil aviation organisations. The data was analysed through comparing male and female pilots, civil and military pilots, and operational and student pilots. Three themes were identified during the analysis: gender symbolism in aviation, the socialisation of pilots, and the risks and excitement of flying. These themes form the basis of the following chapters.

During the course of this study I learned practical lessons in conducting interviews and analysing data. I had to adapt to changing research needs, for instance changing

the interview schedule as the research focus shifted. This research has been highly exploratory and I have discovered many areas for future study including private pilots and gender symbolism. Finally I also discovered how ambiguous the role of the researcher can be, alongside how difficult it can be balancing being an 'outsider' with becoming an 'insider'.

Chapter 4

Identities, Images and the 'Right Stuff'

INTRODUCTION

If God had meant man to fly, He'd have given him wings (Hart 1972: 20).

The medieval Christian church took this adage very seriously and saw it as unnatural for "man" to fly. However it was still man and not woman that was first going to fly. The idea of human flight seems to have existed from the earliest times in legends and in science (Hart 1972). The images of flight have changed over time, yet today still have powerful symbolic associations. Aviation technologies are prominent in the public sphere and are often seen as reflecting forms of masculinity. However despite a history of seemingly masculine imagery - often still referred to in contemporary images of flying - a complex mixture of gendered symbols surrounds aviation.

Symbols are part of everyday life, just as technologies are part of everyday life. It is in the meanings attributed to technologies and the emotional aspects of life where symbols are most powerful (Lie 1998: 195-198). For instance the Spitfire is associated with winning the Battle of Britain, so this aircraft can evoke an emotional response. As discussed in previous chapters gender symbolism interacts with gender identities and structures. Images and language are methods of conveying symbolic meanings. However symbols are not just about images and language but also based on everyday practices. The main focus of this chapter will be image and language, with practice being an area for subsequent chapters.

The professional pilot has various roles to perform. The images associated with the 'right stuff' contribute to these pilot roles. I have adopted the notion of the 'right

stuff – a term used by Tom Wolfe (1980) in his book of that name – to convey the various aptitudes and characteristics that are thought necessary for a pilot. As we shall see the 'right stuff' can vary greatly according to context and is an entirely socially constructed notion; thus any definition is context dependent. My aim in this chapter is to explore how images, organisations and individuals interact to define the various roles of the professional pilot, although I am also interested in how images have contributed to the continued male dominance of aviation. Since the links between gender symbolism and the male dominance in aviation was not a primary focus of this research, a direct causal relationship cannot be made here.

First this chapter discusses how gender symbolism can be portrayed through imagery, which is followed by a brief outline of the cultures of aviation, since these cultures feed into the roles of the pilot and are influenced by imagery. By exploring several dominant images in aviation which have developed over the course of this century - including the 'ace', the adventurer and the aviatrix - subsequent sections investigate the symbolic nature of aviation. Drawing on societal, organisational and individual pilot perceptions, this chapter then examines how the normative roles of the professional pilot are constructed. This is achieved by examining: recruitment procedures and aptitude tests, pilot understandings of the 'right stuff' and pilot identities, and lastly the pilot images that professional pilots identify within aviation. Using all these sources it will become clear how notions of the 'right stuff' are shaped. Finally to understand the impact of such images on pilots, I explore why individuals are attracted to flying and if this imagery play any part in this attraction.

SYMBOLS AND IMAGES

In Chapters 2 and 3 I discussed the importance of gender symbolism when examining gender. Imagery is just one aspect of gender symbolism. Images can have powerful symbolic meanings, which interact with both collective and individual identities (Cohen 1977; Lie 1996, 1998). There is a fluidity to the interaction between images and identities. When a pilot performs to an particular image they are

at once defining their own identity, a collective pilot identity and re-enforcing – or defining – that particular image.

Abner Cohen maintains that symbols will change when individuals act outside of established norms (1977: 120-122). Thus women entering conventionally male domains may challenge such norms and hence the symbolism. Identities and symbolism are intertwined and cannot be easily separated; the same can be said of societies, organisations and symbols. Thus the symbolic meanings attributed to images are never static and will vary according to context. The impact of any particular image depends on who is defining its symbolic meaning, in what particular context and how that is interpreted by others.

The symbolism of technology is derived from the meanings attributed to that technology and the associations made with those meanings. This can lead to the separation of what is seen as masculine and feminine (Lie 1996, 1998). For instance, in recent years a British television programme, called *"Extreme Machines"*, portrayed the F-15 fighter aeroplane as America's "ultimate aircraft" - having had very few losses and a good performance record. F-15 pilots were also interviewed enthusiastically endorsing this view.[1] The F-15 is seen as fast, powerful, dangerous, yet very attractive and exciting. This is just one example of the impact of the media in creating an image and symbolic meanings. F-15 pilots are also characterised as the "best of the best"; for instance in the film *Top Gun* (1986), which has portrayed this image to millions of people worldwide.[2]

Fighter pilots are often seen as exciting, tough, daring, heroic and dashing. Thus the association between the aircraft and the person flying it is very strong; they both embody a particular form of hegemonic masculinity. Aviation technologies, particularly military ones, are usually associated with masculinities and by default

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[1] The episode referred to in the BBC series "Jeremy Clarkson's Extreme Machines" was first broadcast on British television on 22 January 1998.
[2] *Top Gun* was produced by Paramount Pictures and released in 1986.

men. The pressures for the pilot - especially the fighter pilot - to conform to particular images, and roles, are very strong, as we shall see.[3]

Gender can be viewed as about performance (West and Zimmerman 1991), with many people performing to expected norms. Images interact with gender performances; thus gender and symbols are mutually shaped. It can be argued that being a pilot involves performing to expectations, which range from societal ideals to organisational, historical and personal notions of the 'right stuff'. The images associated with flying are both powerful and romantic, but are far from the reality of working as a pilot.

IMAGES IN THE CULTURES OF AVIATION

Harding said that the 'cultural' aspect of gender can be described in terms of the "symbolism of activities and beliefs" (1986: 17). The cultural layers of aviation can be described in the same way. Images have helped to construct the various cultures of flight.

There are two ways of examining these cultural layers. The first meaning that can be attributed to culture is the wider societal culture as portrayed through various media. I shall refer to this as popular culture. Images of flying - such as those in art, literature, films, television, newspapers and recruitment literature - feed into a society's general perceptions of the pilot and flying. The second approach to culture is based on institutions, for instance military or civil flying. Organisational cultures fit into this approach, for instance, airlines, air forces and flying clubs; namely aviation work cultures. Cultures can also vary according to the type of aircraft: fast jet, multi-engine, helicopter, light aircraft, long haul, short haul, etc. We are also able to talk about an overall flying culture, which all pilots share.

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[3] The pressures to conform are particularly addressed in Chapters 6 and 7.

All these different cultures convey distinct versions of what it is to be a pilot and also view each other differently. Thus they all promote different notions of the 'right stuff', which to some extent feed off and into each other. We can begin to see how diverse aviation and pilots can be, and the complexity of aviation symbolism. Images are only a small part of these cultures. In subsequent chapters we shall see how work practices contribute to the various aviation cultures. However first this chapter now considers the contribution of the images of aviation in popular culture to shaping the 'right stuff'.

THE ROMANCE OF FLIGHT

There are many romantic images surrounding aviation that are built on notions of excitement and adventure. Just as car advertising uses different images to appeal to male and female drivers (Hubak 1996) and oil workers are seen as a "real men" (Lie 1996, 1998), images of the pilots reflect certain gender identities. This section charts some of these romantic and heroic images, and how women have been associated - or not - with such images.

The Image of the Aircraft

Various different images of flying have been dominate at different times. There were attempts to fly before the Wright brothers flew the first successful powered aircraft in 1903.[4] Peter Jakab (1990) discusses the romantic and heroic images are often associated with inventors such as the Wright brothers or Thomas Edison. He states that:

> these romanticized versions of events tend to enhance the intrinsic significance of the objects connected to them. The artifacts often assume cultural importance that is distinct from what they represent technologically or historically (Jakab 1990: ix).

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[4] For further details of early attempts at flight see Hart (1972).

Thus the aeroplanes flown by the Wright brothers have come to represent this early heroic and daring age of flight (Jakab 1990), but these are by no means the only aircraft with such symbolic significance.

It could be said that each type of aircraft has it own symbolic meanings. The Spitfire is used to represent the Battle of Britain, and the power and daring of a few aircraft and pilots. Concorde, on the other hand, was an attempt to start a new era of aviation but now is a source of status for passengers denoting wealth and success, while for pilots it is often a long awaited career goal.

During the interviews one airline recruitment manager commented that "some people wait for 27 years to get command of a jumbo jet or Concorde". That is as high as an operational captain can go within some airlines. The aerospace magazine *Arrow* quotes Barbara Harmer - the only female pilot to fly Concorde - as saying "I think Concorde is the ultimate for every pilot because it does what no other aircraft can do" (Burchell 1998: 12). Thus Concorde is also a symbol of success for pilots. British Airways pilot recruitment literature (BA 1997) has used this symbol of success. A photograph of Barbara Harmer standing next to Concorde is shown in their brochure. This is a picture of a 'successful' pilot - and a 'successful' woman. Thus we have a woman being used to attract female pilots but using an established image of 'success' in aviation.

Aeronautical technology has developed many symbolic meanings, with which the pilot is associated. Aircraft are seen as a source of power and control. As discussed in Chapter 2 the aircraft is seen as a 'hard' big technology, associated with various masculinities. In interviews pilots themselves cited control as part of the attraction to flying. This seems to refer to control over the aircraft and the technology, which can be viewed as a demonstration of power and mastery. Terms such as the "conquest of the air" (Turner 1910) and 'mastering flight' (Arrow 1998) which are used in aviation literature also have echoes of a desire to control technology and demonstrate power.

The image of the aircraft cannot be easily separated from that of the pilot. For instance one early debate in aviation was between the airman, a pilot who used his skill to control the aircraft, and the chauffeur, who required little skill because the technology was simpler (Gibbs-Smith 1970; Vincenti 1990). The advocates of the airman won this debate and influenced the direction of aviation technology. Hence pilots have tended to be very much in control of their aircraft. Things can be said to be different today with high levels of automation in flying. However images such as the adventurer or 'ace' pilot are heavily intertwined with the technology such pilots are imaged to use.

The Adventurer Pilot

It is the romanticised notion of flying that has characterised images of aviation and pilots during the twentieth century. The Wright brothers were only the beginning of this symbolic development. Who the Wright brothers were as individuals has been superseded by their symbolic representation of the heroic, adventurous and daring inventors and flyers. It is this symbolic significance to their names that has survived and persisted.

Charles Turner writing in 1910 saw flying as the preserve of the "young" and "daring" - as well as the rich. He predicted the role of the commercial pilot, or in his words the "chauffeur of the air", whose necessary skills he viewed as minimal. He envisaged that military flying would be for the "adventurous" (Turner 1910: 272-278). At this time a distinction was already emerging in attitudes between the exciting flying of the military and the more tedious civil flying. This dichotomy between military and civil flying persists today and is expressed in the attitudes of professional pilots.

Prior to the Second World War, "one sure sign of aviation's growing popularity could be seen in its position as an element in popular culture ... a vehicle for high-flying romance" (Bilstein 1984: 19). Writers such as Antoine de Saint-Exupéry, who depicted early mail flying, the children's *Boy Aviator* series (Bilstein 1984: 19) and

fictional character *Biggles*, portrayed the romantic and adventurous sides of flying to both adults and children. For instance Biggles continually risked his life, yet was handsome, adventurous, courageous and very popular (e.g. Johns 1932, 1936). The *Biggles* books are still sold for children today. Antoine de Saint-Exupéry in *Wind, Sand and Stars* wrote, "in the mould of this new profession a new breed of man had been cast" (1939: 29) and says that a "great professional family" has been borne (1939: 33). Thus the pilot was already beginning to be seen as 'special'. The works of Saint-Exupéry contribute to the mystic and romance surrounding pilots. Such works have shaped the definitions of the 'right stuff' which still exist today. Characteristics of these early pilots are still sought in professional pilots today. Danger, "an extraordinary sense of power", and "a remarkable sense of freedom" (Wohl 1994: 256-257) all attracted pilots to flying in the early days of aviation. This attraction to danger, power and freedom formed part of the 'right stuff' for the early pilots. Flying was very hazardous at that time and many pilots, male and female, lost their lives. The risk of flying was, and has remained, part of the attraction of flying.[5] "Some argued that the possibility of death was ultimately what gave meaning to flight" (Wohl 1994: 255).

For Saint-Exupéry the air was filled with danger which the pilot must confront. One character in Saint-Exupéry's *Night Flight* (originally *Vol de Nuit*) says of talking to a pilot, "I'm rescuing him [the pilot] from fear ... if I take his apprehensions seriously, he will think he's returning from a land of mystery, and mystery alone is what one is afraid of" (1931: 174). At that time a pilot must be fearless, or at least control their emotions. So the 'right stuff' for an early pilot included daring, adventurousness, control of emotions and it seems being a man, but also being part of a "family" (or brotherhood). As demonstrated in the following chapters this is not so far from the picture of the pilot today, and for instance the image of the pilot in the film *Top Gun*. However there have been women adventurer pilots, such as Amelia Earhart in the USA and Amy Johnson in Britain (Cadogan 1992; Corn 1983; Lomax 1986). These

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[5] In interviews with pilots, risk and danger was seen as attractive by a high proportion, especially fast jet pilots.

women were seen as exceptions to the rule rather than the norm, and in a sense still are.

Regardless of the real dangers and difficulties of flying, in the early days aviation was viewed with great optimism; it had a mystic appeal.[6] One poet writing in 1910 (name unknown) expresses this optimism for the future and the romantic view of flying in these extracts from a poem.

Brilliant, dashing, winged thing
Moving there across the sky,
What new message do you bring
Unto mankind as you fly? ...

... Hark: Your motor seems to sing
With the music of the spheres ...

...Waft young lovers through the air.
Fly them straight to Heaven's own door;
Ride on sunbeams bright and fair
Chase you cloudlets at your fore ...

... You shall teach our souls to fly!
(Bilstein 1984:23-24)

Flying was supposed to be fun, adventurous and romantic. However the job of the professional pilot has often been far from these early ideals. In the 1930s one older airline pilot commented that "all these improvements and safety measures have taken most of the adventure out of the business" (Bilstein 1984: 97). For airlines safety became a major issue - due to the now paying passengers - and developments in air traffic control, airfields and instrumentation (e.g. the autopilot) meant that as commercial flying grew so it became less risky and more predictable. Airliner flying required a different approach by pilots. They had to work as part of a larger team including not just other aircrew, but cabin crew and ground crew. Thus the role of the commercial pilot has moved away from just flying the aircraft to managing the whole flight.

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[6] There were also those who foresaw doom and viewed the coming of the aircraft with great pessimism. See Wohl (1994).

Filmmakers have exploited the romance and thrill of aviation. Roger Bilstein lists *Wings* (1927), *Dawn Patrol* (1930), *Night Flight* (1933) and *Test Pilot* (1938) as productions which "fostered the clichés of numerous aviation films that followed - the devil-may-care aviator and inveterate womanizer who becomes the cool and incredibly skilled hero once he is in the air" (1984: 311-312); an image of the pilot which continued into later decades, and has echoes of the flying 'ace'. The 'ace' also being a dominant flying image.

The 'Ace' - A Hero For All

> *Star Wars* should be reckoned as one of the first and most powerful media forces in the restoration of that glorious image of war: war as a testing ground and initiation rite for young men; an arena of heroism; a just struggle for the good; and war as just plain fun (Caputi 1988: 500).

The ideas of war that Caputi expresses have long been held, but in the last century the two World Wars, and other subsequent wars (e.g. Vietnam and Falklands Wars) have reduced some of that glamorous image. The recent film *Saving Private Ryan* (1998), following the actions of a group of US soldier after the D-Day landings, is one of many post second world war films which have acted somewhat to de-glorify war and show the bonding between soldiers. However the notion of the military as a testing ground for manhood is still present.

Prior to 1914 the dominant image of the pilot was the "sportsman", or adventurer, but during the First World War the image of the flying 'ace' became dominant. "An airborne knight armed with a machine gun who jousted in the sky" (Wohl 1994:203). The realities of being a pilot in wartime were shrouded in heroic and romantic images at this time. A famous French 'ace', Roland Garros, believed that a pilot needed courage, will power, physical resistance, presence of mind and "style" (Wohl 1994:203). Thus a further definition of the 'right stuff' emerges. However being an 'ace' was also about honour, glory and being part of a "brotherhood" (Wohl 1994: 203-251). 'Aces' were rewarded for their achievements, some achieving public

acclaim and becoming national heroes. One of the most famous is the Red Baron, Manfred von Richthofen. In his memoirs he recognised the horror and unglamorous nature of war (Wohl 1994: 223-251). However the public perceived pilots as "dashing, brave, foolhardy, and unlike the usual run of human being" (Wohl 1994: 244). Again they were viewed as 'special' and different from other people. Also "women were reported to be especially receptive to their charms" (Wohl 1994: 244). Thus a role for women as supporters and admirers of pilots developed. As one present day pilot commented there is a certain "pulling power" to the uniform, namely it sill attracts the attention of the opposite sex.

During the First World War, some of the other forces saw pilots as having an easier life behind the lines and did not uphold the general admiring attitudes. Soldiers often lived terrible conditions in the trenches, having to fight hand to hand. Pilots lived in relatively comfortable billets behind the lines and only fought from a distance. Reconnaissance pilots made some of the greatest contributions of aviation during the war, but they did not receive the public attention (Wohl 1994: 245-249). It could be that reconnaissance flying did not demonstrate the conquering and virile masculinity that 'aces' represented, thus being less desirable to publicise. It is the image of the 'ace' fighting and winning alone which has survived. However the 'ace' pilot would be nothing without his aircraft.

At a time when the glamour of war has supposedly faded, the film *Top Gun* (1986) still echoes notions of the flying 'ace'. The film is about the training of fighter pilots in America, and promotes very stereotypical images of the military pilot. The competition, amongst the characters in the film, to be the best pilot is stressed, no matter what the cost. The main character Maverick flies dangerously, rides fast bikes and is extremely confident; he is a risk-taker.[7] He attracts women but is also a loner. However he risks his own life to save that of fellow pilots; he is the hero. The pilots are competing but also part of a close network. The pilots are characterised as 'hard' masculine men reflecting a form of hegemonic masculinity. The pilots are not

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[7] As discussed in Chapter 5 the idea of the pilot as a risk-taker is at odds with the reality of the job, where flying safely and within the limits are priorities for most types of professional pilots.

isolated but form close bonds with each other. A theme which echoes throughout the images of the aviation.

Figure 1 - RAF Pilot stood beside the cockpit of a Harrier.
Photograph was used in RAF recruitment literature

Source: RAF (1997) *Officer: Pilot and Navigator*,
Central Office of Information, UK.

RAF pilot recruitment literature (1997) shows many images of the lone pilot - male and female - standing beside their aircraft (see Figures 1 and 2). This is reminiscent of the images of the single 'ace' pilot, or even the cowboy riding off alone into the sunset, or a climber conquering a mountain. Thus the 'ace' notion of masculinity continues to be used to attract pilots and is still creating a role model for pilots to follow.

There have also been a few women 'aces' but they have remained largely unheard of. During World War Two there were three all female squadrons in the Soviet Air Force and several of these women became recognised as 'aces' including Katya Budanova and Lily Litvak (Myles 1981). Yet it was only in the last twenty years that their story became known in the West. There have also been female 'aces' in

literature (Cadogan 1992), but they are few and far between. Worrals (e.g. Johns 1942) was one such character. She confronted spies and took part in air battles; she was an all round 'ace'. Yet in reality women were not allowed to fly on front line missions, however they did act as ferry pilots in the Air Transport Auxiliary (ATA) in Britain and Women Airforce Service Pilots (WASPs) in the USA. These female 'aces' images are relatively unknown and do not fit easily with the masculine image of the 'ace'.

**Figure 2 - RAF Pilot stood inside the cockpit of a Tornado GR1B.
Photograph was used in RAF recruitment literature.**
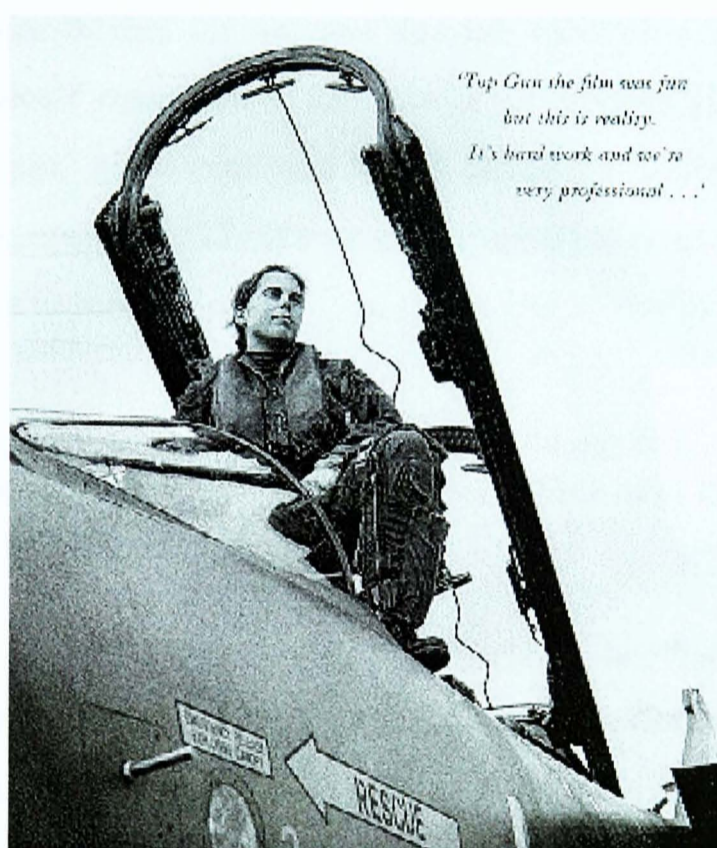
Source: RAF (1997) *Officer: Pilot and Navigator*, Central Office of Information, UK.

The 'ace' imagery is part of a hegemonic masculinity, in that it portrays man as the protector of woman and home. It is a form of masculinity that is particularly evident in military institutions. This masculinity also has echoes of the age of knights, chivalry and lone combat, which is far from the reality of modern warfare. The 'ace' is clearly still an appealing image for those within and outside of aviation, and has influenced the gender identities of pilots.

Aviatrix - Lacking In Air Sense

So where do women fit into aviation? The first women pilots were Blanche Scott (Cadogan 1992; Gant 1996) and Raymonde de Laroche (Cadogan 1992; Lomax 1986) in 1910. Laroche claimed that flying "does not rely so much on strength as on physical and mental co-ordination" (Lomax 1986: 24). So even at this time the argument that women were the "weaker sex" and did not have the physical strength to fly aircraft lacked credibility.

During the First World War women were not allowed to fly in the military. They were allowed to raise money for the war through exhibition flying, and in Canada several women trained male pilots for service in Britain (Lomax 1986: 28-29). Several famous female pilots emerged in the following decades including Amelia Earhart, who disappeared in 1937 on a round the world trip, and Louise Thadan, who flew across America in record time in 1936 (Corn 1983: 71-73; Lomax 1986).

> The attraction of women to aviation was a strong one, for no activity better symbolized the freedom and power which was lacking in their daily lives (Corn 1983: 73).

These women can easily been seen as adventurers. They were highly visible and their activities were widely publicised, since they were deviating from what was seen as 'normal' activities for women of the time and from the popular image of the flying 'ace' popularised by the First World War (Corn 1983: 75). Thus images of early women pilots were highly accessible to the general public; for instance the publicity that surrounded Amelia Earhart. This visibility has parallels with the experiences of some women pilots, especially the first female RAF pilots.[8]

Were these women rebelling against the restrictions of society? According to Joseph Corn, women pilots were used as a commercial ploy by airlines and manufacturers to

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[8] The visibility of women pilots will be further discussed in Chapter 7.

convince the public of the safety of flying.[9] Louise Thadan commented that "if a women can handle it 'the public thinks it must be duck soup for men'" (Corn 1983: 75). The stereotype of the 'lady-flier' emerged viewing female pilots as "scatterbrained", barely capable of flying, and lacking the essential "air sense" (Corn 1983: 76).[10] Basically the argument went that if a women could fly a plane then anyone could, and flying must be safe. Thus women's skills were being devalued in relation to male pilots.

In 1924 the International Commission for Air Navigation officially excluded women from flying aircraft "engaged in public transport", and made the first physical fitness requirement for civil pilots, namely that "*he* must be of the male sex" (Lomax 1986: 38, emphasis added). It was not until 1934 that the first woman airline pilot, Helen Richey, was employed in the United States. She resigned after 10 months when the all-male pilots union refused to accept her and her flying was restricted to when the weather was considered suitable for a women, namely a windless, sunny day (Lomax 1986: 57-58). Thus women were actively discriminated against initially on the basis of sex, and later on technical competence and physical strength (Corn 1983: 79-81). Such active discrimination has not just been restricted to flying. For instance Cockburn (1983) has studied the history of typesetting, where compositors argued that women did not have the physical strength to lift and carry heavy equipment, thus they were not employed and trained. We can see how women's skills have, on occasion, been devalued in relation to those of men.

The general attitude of men towards female pilots was that women were temperamentally unsuited for flying because they were prone to panic, lacked physical strength, and had no right to needlessly risk there lives (Wohl 1994: 279-80). Even some female pilots felt that women should not pilot airliners. Airline pilots were compared to sea captains or truck drivers (Corn 1983: 80), both

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[9] Corn (1983) had written a social history of aviation in the first half of the twentieth century and unlike many writers of aviation history is not an aeronautical enthusiast. Thus he provides the perspective of an outsider.

traditionally male occupations, as professional flying has become. Some women pilots felt their role was in teaching and encouraging others to fly (Corn 1983: 81). This is a job in which women may have conventionally felt more comfortable or appropriate, thus not deviating completely from expected gender norms.

In the military the image of the fighter pilot has endured with other types of pilot being obscured into history - women pilots being one such group. Women were allowed to perform limited flying functions during the Second World War. In Britain the Air Transport Auxiliary (ATA) ferried aeroplanes from the factory to the airfield and between airfields. Many women died in this role, Amy Johnson being one of the more famous. She had set many records prior to the war and died in 1941 on a routine flight from a factory to an RAF base (Ninety-Nines 1996). In America the Women Airforce Service Pilots (WASPs) performed a similar role, also ferrying aircraft across the Atlantic, testing new planes and towing targets for gunnery practice (Hodgson 1996). This unit was disbanded, like the ATA, at the end of the war and many women found it hard to find employment as pilots, with so many male pilots returning home. So women had a military flying role prior to modern day policy changes, however this has tended to be forgotten and has not really influenced the dominant images of aviation.[11]

The very early years of flying set the foundations of the images that continue to be associated with flight. As we have seen, although there were many prominent women pilots, the images still revolved around men. During the interwar period, and especially after the Second World War, there was a vast expansion of commercial flying. A role was found for women in the air that fitted with notions of suitable women's work, namely the air stewardess or flight attendant.

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[10] "Air sense" is defined by Corn as an indefinable something needed for successful flying, somewhat similar to Tom Wolfe's indefinable "right stuff". The view was that women could not possibly have the essential quality that was strictly a male preserve, but obviously some women did.

Figure 3 - Air stewardesses posed beside a DC-3.

Source: Bilstein RE (1984) *Flight in America 1900-1983. From the Wrights to the Astronauts*, Johns Hopkins University Press, London, p103.

In the early decades of aviation women were used to sell aeroplanes and promote commercial flying (Corn 1983: 88-90). Joseph Corn notes that there are similarities between this and later female roles, "just as the woman pilot demonstrated the safety of flying and the ease of piloting in an earlier period, the stewardess salved anxieties regarding air travel in a later era" (1983: 90). Both roles play on ideas of women as nurturing and caring. The job of stewardess was seen as one of the most glamorous jobs open to young women. Candidates had to be young, healthy, and physically attractive (Bilstein 1984: 236). The glamour of the job was promoted by airlines. The picture shows stewardess appearing like chorus girls next to an aircraft (see Figure 3).

Arlie Hochschild (1983: 92-95) demonstrates in a study of air stewardesses that the image of the stewardess or flight attendant was also sexualised to fulfil male fantasies. The study found that part of the role of the flight attendant was to present a "professional smile" and "positive attitude" which required much emotional labour

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[11] The RAF allowed women to join as pilots for the first time 1989.

on the part of attendant (Hochschild 1983: 3-12).   In this job emotional work is one of the duties of the job, alongside demonstrating characteristics of emphasised femininity to satisfy the customers expectations (Hochschild 1983: 181). The images of the flight attendant are a clear contrast to those of 'heroic' pilots.

The gendered, and often sexual, division in labour between flight attendants and pilots can be likened to the division of labour between nurses and doctors. Until recent years nurse and flight attendants tended to be women and the jobs are about caring for others - a stereotypically feminine characteristic. Whilst doctors and pilots in the past tended to be mainly men, and the jobs involve remaining detached from patients and passengers and being in a position of relative power. Being a pilot, in the past and present, does not fit with the dominant notions of femininity that women are expected to perform.

Space - Only For Men

Space flight has taken the dream of human flight one step further. For instance during the interviews six pilots stated that their ultimate flying experience would be to fly in space. So even for pilots space flight is their dream experience. Science fiction has adopted the dominant images of the pilot, namely the heroic adventurer to depict spacecraft pilots. The film *Star Wars* (1977) clearly shows this in the characters of Han Solo and Luke Skywalker. Han Solo is the carefree, daring, womaniser, while Luke Skywalker is the heroic and innocent boy. But why have these images remained so attractive?

Tom Wolfe in the *Right Stuff* (1980) tells the story of the selection process for the first American astronauts. The tests the pilots went through were physically very arduous and emotionally very stressful. He talks of the 'right stuff' as an indefinable quality that is linked to manhood and manliness; it involves courage, bravery, and self-assurance. The pilots he talks about, mainly test pilots both military and civil, believed they were the best. According to Wolfe the 'right stuff' is also about a lifestyle, a "cycle of Flying & Drinking, and Drinking & Driving" (1980: 54,

capitalisation in original). That is a life of taking risks and living on the edge. In fact according to Wolfe "there are no *accidents* and no fatal flaws in the machines; there are only pilots with the wrong stuff" (1980: 34, emphasis in original). Thus according to this view, pilots who made mistakes are not worthy of being pilots. The astronauts in Wolfe's book (1980) also worked, trained and socialised together, while also being in competition for the first flights into space. So while they were part of the 'brotherhood' of flying and a close team, they were also concerned with individual performance and success. These two elements of competition and co-operation are present in various degrees throughout the cultures of aviation.

In 1960 thirteen women pilots were put through the same selection process as the men for a privately funded study (Walley 1998). These women often out performed the men in the tests and passed every stage, yet were still not deemed to have the 'right stuff'; they were the wrong sex. The reason given by NASA for not entering the women in the space program was that they had a lack of jet flying experience, but this was not open to women at that time.[12] They really had no chance of succeeding from the outset.

In 1995 Eileen Collins was NASA's first female Shuttle pilot (Walley 1998). So women have flown into space and are now recognised as professional pilots, yet it seems only a few have the 'right stuff'.

Technology has changed the role of the pilot. As we have seen for commercial flying, safety improvements have meant that being an airline pilot is not just about flying the aircraft but also managing the flight. For the military fast jet pilot weapons systems and developments in avionics have made the job more complex, whilst the job of the military multi-engine pilot can be compared to the job of an airline pilot. They both have similar management responsibilities, even if their cargoes are different. Research is being conducted into pilotless aircraft, but one reporter concludes "the RAF will continue to need the successors of Biggles for some years to come" (Butcher 1996). Although practically what this statement is

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[12] Details taken from BBC Radio 4 broadcast "Right Stuff Wrong Sex" on 24 April 1997.

saying may be true, the very use of the image of Biggles means that it still has poignant meaning for today's public. The image of Biggles and the image of today's fast jet pilot are not that far removed. However in practice the First and Second World War fight pilot is very distant from today's fast jet pilot.

THE 'RIGHT STUFF' – WHO CAN BE A PILOT?

In order to understand institutional conceptions of the 'right stuff', this section first outlines the selection process of the RAF and a few UK airlines. The various restrictions placed on pilot candidates are then discussed; followed by the qualities the RAF and airlines studied look for in potential pilots.

Pilot selection[13]

It has already been shown how the RAF uses preconceived ideals of the pilot in their recruitment literature. In their recruitment literature the RAF states that the 'right stuff' - a terminology they also use - involves having "special aptitudes" including, "leadership potential, ... an analytical mind, communication skills, maturity, physical fitness, self-motivation and the ability to inspire and motivate others" (RAF 1997: 11). Everyone who applies to the RAF to become a pilot has to go through a detailed recruitment process that looks for all these aptitudes.

When selecting a pilot the Air Force is also looking for officer qualities, so a candidate is assessed on two levels. One senior RAF recruitment officer stated during an interview that the primary task for the Air Force during pilot recruitment is to find a good officer and then a trainable pilot. Thus the aptitudes for being an officer overlap with those of being a pilot. Another recruitment officer noted that the RAF is primarily looking for an officer and then a pilot. An RAF pilot is primarily a military officer who can lead troops into whatever situation they are required for. The fact that they can also fly is really secondary as far as the RAF is concerned.

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[13] All data on the RAF recruitment process was provided by the RAF Officer and Aircrew Selection Centre through interviews, observation, and recruitment documentation.

There are three routes to becoming an RAF pilot.

- Transfer - an individual may enter the Air Force in another role, either as a non-commissioned officer (NCO) or as an officer. They then may apply to change branches once they are serving in the RAF. Only a few pilots are recruited this way each year.

- Direct entry - an individual may enter directly from school, at the age of 18 - possibly after completing an RAF flying scholarship. Again a minority of pilots are recruited through this method, however the RAF are trying to recruit more pilots through this method of recruitment via sponsorship schemes.[14]

- University Air Squadrons (UAS) - an individual can also join a UAS while at university. Their aptitudes for being a pilot will be assessed, along with medical examinations and interviews, before being accepted onto a squadron. UAS members can also receive sponsorship, although even without this all UAS members can start the flight training process. A UAS member can also gain a commission, which they will start training for directly after graduation.

RAF pilot recruitment occurs at the RAF's Officer and Aircrew Selection Centre (OASC), and has two stages. Candidates are firstly screened via certain restrictions and then assessed on their aptitudes. However before reaching OASC candidates are screened for suitability by a recruitment centre or careers liaison officer, through application forms and interviews.

Pilot candidates have to go through the OASC selection process, which lasts about three days. Candidates must pass the first stage to progress to the second stage. The first stage involves aptitude testing, medical tests and an interview. The second stage then involves candidates completing individual and group tasks, while being

assessed. These tasks include discussion, theoretical and practical exercises. If candidates pass both these stages they may then: be offered a commission, placed on hold for future reference, told to re-apply after fulfilling certain criteria, offered an alternative branch in the RAF, or rejected outright.

The recruitment process for airlines is less structured than for the Air Force, although there are some similarities. There are two distinct routes to becoming an airline pilot: you can either be sponsored by an airline through the training, or you can pay for yourself. If the latter route is chosen a pilot will then join an airline for some further training and to gain experience.

To gain sponsorship a candidate must go through a structured selection process and pass certain aptitude tests.[15] However from this study of airline pilots it appears that the main method of recruitment is fairly ad hoc. There is a sense that it is who you know within an airline, and not what you know, that counts. This can come from various sources.

> I probably got recommended to them [the airline] from the school [flight training college] ... They put me forward ... So I got an interview (Kurt).

Flying colleges and contact with airline pilots are very important to pilots trying to find a job - especially their first job. One other airline pilot commented that

> If you're C.V.'s on the pile then you'll get phoned first and then it goes in the bin or at the bottom of the pile. What I'm trying to say is they don't really have a system of recruitment - not a terribly sophisticated one anyway (Alice).

It seems that as well as having the necessary aptitudes, an airline pilot candidate must also apply at the right time and know the right people.

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[14] The BBC News website in an article entitled "'Strained' armed forces deny crisis" outlined the new recruitment strategies of the RAF including more direct recruitment.

[15] These are detailed later in the chapter.

Physical Restrictions

The Civil Aviation Authority (CAA) dictates that all civil pilots must pass a medical examination. A pilot must have normal colour vision, normal hearing and reasonable eyesight.[16] Beyond this and being medically fit there are officially no physical restrictions to flying civil aircraft.

However the medical requirements for RAF pilots are very stringent. Due to the development of helmet mounted sights in new aircraft (e.g. Eurofighter); a pilot candidate's eyesight must be nearly perfect.[17] Conditions such as asthma and hayfever also exclude individuals. There are also size and weight restrictions, as indicated in Table 2. A candidate must also be within 15% of the ideal weight for their age and build. These requirements again exclude a large number of all candidates, but especially women. The RAF estimates that about 30-40% of women applicants pass the physical requirements.[18] Figure 4 further shows that when the weight restrictions are applied to the general population they exclude a much higher proportion of women than men.

Table 2: RAF Physical Requirements for Prospective Pilots

Requirement	Minimum	Maximum
Functional Reach [19]	740mm	900mm
Buttock to heel – straight	1000mm	1200mm
Buttock to knee [20]	560mm	660mm
Sitting Height	865mm	1010mm
Weight	56.8kg	94kg

Source: Data provided by RAF Officer and Aircrew Selection Centre.

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[16] Data supplied by CAA medical division, London.

[17] Regulations on eyesight have only recently been tightened; therefore there are current RAF pilots with eyesight below this minimum requirement.

[18] Data supplied by the RAF OASC.

[19] Functional reach is when the candidate is seated leaning against the back of the chair and has to reach forward with their hand as if to switch a button. The distance measured is from fore finger and thumb together to the shoulder.

[20] The maximum leg measurements are to ensure that the pilot does not get caught on panelling as the ejecting from a fighter aircraft, while the minimum lengths are related to reaching pedals.

Figure 4: RAF Weight Restrictions Plotted on Adult Weights for England 1996

Adult Weight (England 1996)
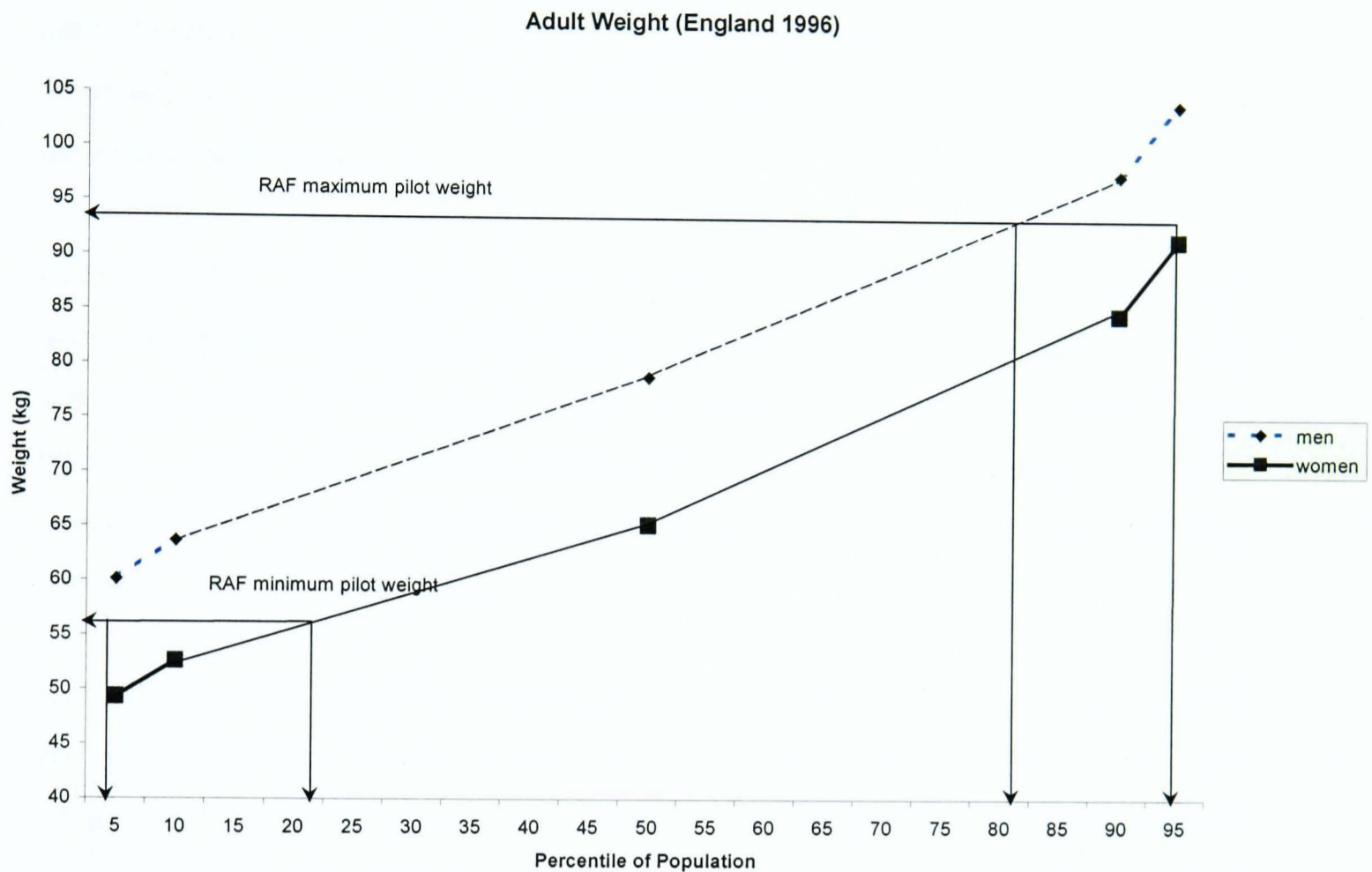
Source: Prescott-Clark et al (eds.) (1998) *Health Survey for England 1996: Volume One Findings*, Table 7.8.

The size and weight restrictions imposed are due to cockpit design; for instance the minimum weight is due to ejection seat design. To work effectively and safely – without injuring the pilot – ejection seats require a minimum load. Rachel Weber (1997) examined how cockpit design excludes many women. Weber examined both military and commercial aircraft manufacturers in the USA, which have conventionally used male physical specifications in cockpit design. The US military use design specifications based on the physical dimensions of male military personnel - excluding the lowest and highest 5 per cent. However because women's bodies are generally smaller, between 50 and 65 per cent of the female population are excluded (Weber 1997: 238-239). As in the UK, women who do not meet the standard requirements are not allowed to become pilots.

This issue was publicised in the USA because of the increased number of female military pilots. Thus directives have been issued so that manufacturers have to accommodate all but the lowest 5 percent of female proportions and the highest 5 per cent of males (Weber 1997: 241-245). Weber (1997) notes that political and public pressures have led to this change, but in the private sector commercial interests have overridden such pressures.

Civil aircraft cockpits are more flexible in design, with seating being adjustable and some flexibility in seatbelts; unlike military aircraft where the pilot has to be tightly strapped in. The fixed anchorage points of straps and the style of seatbelts means there is less manoeuvrability in military aircraft. Even with this flexibility some women are not able to attain the minimum physical requirements needed to fly civil aircraft (Weber 1997: 239-241).

UK airlines place some limited height or weight restrictions on pilots. British Airways recruitment literature (1997) states that pilots must be between 1.57m and 1.91m "with weight in proportion to height". A manager of one regional carrier commented that they employed pilots ranging from a woman of 5 foot 2 to a man of 6 foot 3. He said that bolster cushions could be used on the seats as long as the pilot could reach the pedals. There is much greater flexibility in civil aircraft. Weber (1997: 241) states that, "although technology certainly is not the only 'cause' of exclusion and segregation, biased aircraft act as symbolic markers, used to delineate the boundaries between men's and women's social space"; namely the cockpit is characterised as male space for male work and therefore designed around men. However, as she notes, other social factors, such as those discussed in Chapter 2 and those explored in subsequent chapters, have also acted to exclude many women from flying.

Political pressures for change in military cockpit design have not surfaced in Britain in the same way as in the USA. Commercial viability may be one factor, as with the US commercial aircraft. Dandeker and Segal (1996) note that the RAF, until 1989,

held the view that women would not be cost-effective to train as pilots, due to family pressures. However RAF research indicated that the attrition rate of women in training was lower than for men. This combined with a desire to be seen as a "forward looking organisation" lead to the change in policy allowing women to fly (Dandeker and Segal 1996: 35). Dandeker and Segal (1996) also cite as reasons why the roles for women have been expanding in the British armed forces: demographic changes with shortages of high quality male recruits, pressures for better career opportunities for women already in the armed forces, technological changes, and changes in attitudes of policy makers and officials. We can speculate that one reason for Britain lagging behind other countries in designing military aircraft with women in mind could be the different cultures of feminism that exist in the UK and the USA; namely more political pressure many have been present in the USA. Yet some changes are occurring in Britain. In Europe the Eurofighter cockpit "has been designed to ensure that women will find it comfortable" (Evans 2000). So in Britain, as well as the USA, changes in aircraft design are occurring which may physically exclude less women from professional aviation. Structural changes are occurring in the gender bias of aircraft.

In sum, the design of aircraft and other medical limitations act to exclude many women from being Air Force pilots - and some from civil flying - although they do also exclude some men.

Further Restrictions

There are other restrictions to being a professional pilot. There are minimum education requirements for both RAF and civil flying, although no particular technical qualifications are required. RAF candidates must be in training before the age of 24 or 26 if they are already serving in the RAF, whereas civil pilots just have to be between 18 and 65. However candidates looking for airline sponsorship must be relatively young, for instance British Airways states that candidates must be between 18 and 28 (BA 1997).

RAF candidates, during the selection centre interview, at the time of the fieldwork were asked three mandatory questions, one on homosexuality, one on involvement with drugs and one warfare attitude question. A one-time experimentation with drugs by a pilot candidate is allowed. Candidates must also be willing to fight for their country. Homosexuals, until the European Court of Human Rights ruling of 27 September 1999, were excluded from the UK military services. Due to this court ruling, from 12 January 2000 the ban on homosexuals in the British armed forces was lifted (RAF News 2000), and questions relating to homosexuality are no longer asked. Thus in principle until recently homosexuals, drug users and pacifists were all excluded from being RAF pilots.

These are the official and stated restrictions, but there are further less obvious constraints placed on potential pilots. One main obstacle to becoming a civil pilot can be the cost. Only a limited number of pilots are sponsored and the majority have to pay for themselves. As most of the airline pilots interviewed commented this takes great dedication. The interviews indicated that those pilots who pay for themselves can be divided into two groups: those whose family can afford to pay for the training and those who take out loans or may have worked for a number of years. All the airline pilots I interviewed, who did not receive sponsorship or military training, were from the latter group. Most expressed doubts about the dedication of pilots from relatively wealthy families. Thus a class distinction can almost be made. However professional flying is by no means the preserve of the wealthy.

Tom Wolfe mentions the southern drawl that American military and airline pilots adopted after the fame of Chuck Yeager (1980: 44-46).[21] This accent became associated with the voice of the American airline pilot. Interviews indicate that in the RAF today pilots are encouraged to tone down any strong regional accents. The reasons given are for clarity and understandability over the radio. This seems a reasonable argument, however there are also overtures of class distinctions. In the past in British war films pilots were often portrayed with slightly upper class English

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[21] The first man to break the sound barrier.

accents. This still appears to be filtering down into notions of the 'right stuff' today. To passengers of an airline the pilot is a disembodied voice. The airlines made no mention of not accepting accents and many of the pilots I interviewed had regional accents. An airline pilot with a regional accent can be more easily identified by passengers and may appear less distant, therefore could be an added bonus for airlines.

Aptitudes

Psychometric testing is a popular method employed by organisations to aid the selection of potential pilots. Military organisations have particularly developed such tests for their selection procedures.

Many commentators and organisations regard spatial ability and co-ordination as important factors for a successful and trainable pilot. Recent research conducted on 600 student pilots in the US Navy and on Israeli Air Force trainees suggests that individuals who perform well on visuospatial tests are more likely to complete flight training, while those who perform badly are more likely to drop out (Gordon and Leighty 1988).[22] The same research also indicates that verbosequential abilities are of less importance and the same clear distinctions could not be drawn.[23] For instance many individuals with good verbal and sequential abilities made successful pilots but many also dropped out.[24] Of course as with many such studies on pilot aptitudes the results are mostly based on men, creating an immediate bias. There are very few women pilots on whom to conduct substantial quantitative studies. Gordon and Leighty's (1988) research is just one example of the tests adopted by military

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[22] Visuospatial tests examine visual and spatial cognition including activities such as locating identical shapes from a selection, counting the number of cubes in a drawing and completing an incomplete drawing (see Gordon and Leighty 1988 for further examples).

[23] Verbosequential tests examine verbal and sequential abilities including such activities as recalling a sequence of sounds or numbers and listing certain words within a time limit (see Gordon and Leighty 1988 for further explanation and examples).

[24] As with all such psychometric testing any research results will vary according to the tests used and the subjects selected. In the Gordon and Leighty (1988) research differences according to sex in test results are mentioned for the general population but not for pilots. In their research different tests were used for male and female student pilots, however any sexual differences or similarities are not discussed.

organisations and psychological research into the 'right stuff', the results of which vary from study to study.

The RAF has their own team of psychologists and has developed various aptitude tests which candidates are obliged to complete. A pilot candidate completes a battery of five tests: two of which are psychomotor or co-ordination tests, a spatial reasoning test based on aircraft instruments, a speed and accuracy test, and a short-term memory/ digital recall test. There is no specific intelligence test, although good effective intelligence is one characteristic that is particular sought after for a pilot.[25] Any pilot candidate must meet a minimum score on these tests, and the higher the score the more likely they are to be considered for selection. As we can see these tests are mainly concerned with visual and spatial skills, in line with the US Navy research (Gordon and Leighty 1988).

The RAF state that on average 40% of male pilot candidates pass these tests, while only 9% of female pilot candidates manage to attain the minimum grade. Thus from this point onwards only a very small minority of pilot candidates are women. However it is worth nothing that more women pass the navigation tests which are mainly mathematical. The reasons for these male/female differences are unclear and this could be an area for further investigation in the future. It is possible that gender and sex are covertly and subconsciously part of the selection processes in the RAF. Any overt discrimination is denied by the RAF and their processes aim to be non-discriminatory. However it is not possible to answer these speculations from the data collected in this study.

With a large international airline, such as British Airways, the selection process is also fairly structured. A candidate looking for sponsorship - a cadet applicant - must do hand, eye and foot co-ordination tests, along with psychometric tests for numerical and verbal reasoning. Candidates with flying experience just do the later

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[25] Under effective intelligence the RAF include comprehension, intellect, judgement, mental agility and capacity, numeracy, practical perception, resourcefulness, reaction to pressure and theoretical perception.

tests plus a simulator test. At other smaller regional airlines the recruitment process involves panel interviews and simulator tests. Hence psychometric testing is not used by all flying organisations.

From interviews with recruitment managers and from recruitment literature the picture of an airline pilot that develops involves having the following aptitudes:

- a high sense of responsibility.
- good team and communication skills.
- calmness under pressure.
- good analytical skills and attention to detail.
- excellent powers of observation.
- good hand-eye co-ordination and spatial awareness.

These bare a resemblance to the RAF aptitudes sought for both a pilot and an officer. As I have stated airline pilots are also managers, so as well as flying ability, communication and organisational skills are important. Safety is also a priority for airlines, so remaining calm and making sure every detail is correct are seen as necessary for a good airline pilot.

In relation to aptitudes one phrase kept appearing during this study, 'stable extrovert'. The RAF, airlines, the civil training college and pilots themselves all used this phrase to describe the character and general aptitudes required of a professional pilot. This is a psychological term for categorising personality. Hans Eyserick identified four basic factors for defining personality: introversion, extraversion, emotional stability and emotional instability, or neuroticism (Atkinson et al 1990: 507-509). In this model the stable extrovert emerges as someone who is sociable, outgoing, talkative, responsive, easygoing, lively, carefree and can lead. From the data above we can see some of this are characteristics desired by the airlines and RAF but there are also many other aptitudes and personality traits outside of this narrow psychological

definition, which are desirable in a pilot. However aviation organisations do use this psychological model to help select pilots.[26]

From this information it is clear that only a few women, compared to men, can meet the institutional specifications for the 'right stuff'. A psychological study of male and female transport and tanker pilots in the United States Air Force (USAF) found that men and women pilots shared more traits than expected (Reed 1997). They had similar intelligence and were more similar to each other than to men and women in the general population. This indicates that pilots are a highly select group of people, and that maybe women who enter flying are chosen because they are out of the 'norm'; either this or, as we shall see in later chapters, women, along with men, adopt the traits that are expected of a pilot, or a combination of both. Either way large numbers of both sexes are restricted from becoming pilots because of the institutional definitions of the 'right stuff'.

It seems that some degree of 'natural' ability in terms of co-ordination and spatial awareness is desired by flying organisations.[27] Yet this is only a small part of what is deemed necessary for a pilot. The RAF also assess pilots on how good an officer they would make, which requires a further set of tests and aptitudes. Everything discussed so far in relation to the RAF takes part in stage one of the selection procedure. Assuming a candidate passes the tests and requirements they proceed to stage two, the exercise phase, which is used to assess officer qualities.

Officer Qualities

As stated previously, the exercise phase involves candidates completing various group and individual tasks while being assessed. This stage is designed mainly to look for officer qualities and whether a candidate will pass initial officer training (IOT), although certain qualities are more desirable in a pilot. There is a discussion

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[26] RAF psychologists stated this as the desirable personality type for a pilot.

exercise where candidates talk about a general subject. There are theoretical planning exercises; either in a group, or individually, candidates have to solve a hypothetical scenario. There are also physical exercises - one with an appointed leader (a command situation) and one leaderless – where candidates have to negotiate a variety of obstacles to get from one point to another.[28] These last exercises are particularly designed to examine practical awareness, which the OASC finds is often lacking.

Qualities looked for in most of these exercises are confidence, involvement, influence in the group, judgement, comprehension, co-operation, receptiveness, flexibility and reaction to pressure. In the command situation candidates are also assessed on their support role. Thus being part of the group and participating are very important. One assessor also rated assertiveness, mental capacity, mental agility and motivation as also important. Pilots have to be motivated to get through the long training process.

The assessments of these exercises and the interviews are then compiled into a personal qualities assessment summary which includes:

- manner
- powers of expression
- activities/interests
- academic level/potential
- physical level/potential
- awareness
- motivation
- teamwork
- leadership potential

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[27] It is debatable how much flying skill is 'natural' or innate and how much is learned through everyday activities. For instance in an interview one RAF recruitment officer suggested that computer games might help with the co-ordination and spatial awareness tests.

[28] These practical tests, although devised in the 1950s, are extracted from exercises the Luftwaffe and civil service used in the 1930s. (RAF OASC)

- effective intelligence [29]

Candidates' weaknesses and strengths are noted in each of these areas and then an individual score given. Leadership and effective intelligence are seen as two of the most important qualities. Of course life experiences, age, maturity, and of course gender, may affect the results a candidate achieves.

As well as personality traits candidates are also assessed for fitness and must reach a required standard. One RAF assessor when asked for the key things they look for in a pilot replied,

> I'm looking for basic aptitude for a start and medical fitness. I'm looking for a bit of mental capacity, good reaction to pressure, some degree of numeracy, mental agility, bit of get up and go, leadership and effective intelligence. Got to be reasonabilty fit. It can be a physically demanding job. It's the umph I suppose, but it takes all sorts. We fly all sorts of aeroplanes. Whilst I'm only recruiting for fast jet pilots. There's different requirements.

We begin to get a picture of an RAF pilot which is somebody that can think fast, cope with stress and pressure, make decisions and lead others. However, as a good officer and pilot they also have to work well as part of a team and be compatible. At the selection centre assessors are looking for "raw qualities" and individuals that will get through IOT and basic flight training (BFT), beyond that they find it impossible to identify the necessary traits.

Every pilot candidate is assessed on the assumption that they will become a fast jet pilot; however the majority become multi-engine or helicopter pilots. As we shall see in subsequent sections and chapters, these jobs can be quite different and involve different skills and aptitudes. In fact the work cultures in fast jet flying reflect much more than other types of flying the ideals of hegemonic masculinity. Therefore it is these ideals which pilots have to live up to during the selection process.

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[29] A further breakdown of each of these qualities is included in Appendix C.

We can see that there are dominant institutional notions of what it takes to be an RAF pilot and civil airline pilot. These notions influence the conceptions of the 'right stuff' held by individual pilots, although it is only by studying pilots that we can discover just how much.

THE 'RIGHT STUFF' - THE PILOTS' PERSPECTIVES

The selection and recruitment procedures are a crucial factor in the construction of institutional notions of the 'right stuff', although the individual pilots themselves also construct various definitions of the 'right stuff'. Accordingly this section investigates what qualities pilots see as necessary for a pilot and how individual pilots perceive their own pilot identities.

The Characteristics of a Pilot

In order to determine what the 'right stuff' consists of to professional pilots themselves, all the pilots interviewed were asked to list what qualities they thought necessary for a good pilot. The question did not specify any particular type of pilot, and most respondents did not specify whether they were talking about any particular type of pilot or just a generic pilot category. The following results are for this generic pilot. An extensive list of traits was complied from the interviews but - in order of magnitude - those most often stated were:

- teamwork
- effective management
- hand-eye co-ordination/"the skill"
- mental capacity
- attention to detail
- not panicking or calm under pressure
- acceptance
- confidence

- determination
- reasonable intelligence
- reflexivity

The traits mentioned and stressed by the pilots also depended on what type of flying they were referring to. Some respondents did differentiate between the different types of pilots and flying, with the main categories used being:

- civil and military pilots,
- RAF multi-engine pilots and fast jet pilots,
- twin seat and single seat fast jet pilots, and
- multi-crew flying, which can include both civilian airline pilots, RAF multi-engine pilots and RAF rotary pilots.

The categories are not all mutually exclusive, but are referred to at different points in relation to the characteristics mentioned during the interviews. To some extent these categories also differentiate the various cultures of aviation, as explored in Chapters 6 and 7.

Teamwork was the most common trait mentioned; 75% of civil pilots mentioned this characteristic compared to 50% of RAF pilots. This was also the trait most often mentioned by female pilots. However both the men and women interviewed stressed teamwork and social skills as crucial for any pilot.

Several factors were raised in the interviews that differentiated civil from military flying and RAF multi-engine / multi-crew flying from fast jet flying. As one civil instructor stated, "if you're looking for a good fighter pilot the qualities are going to be different from someone whose going to fly Mum, Dad and the kids on holiday" (Mark). From my research I discovered that teamwork is considered to be one of these factors. Chris, a civil instructor, stated that,

> ... there's a lot in the military that's about being an individual. If you're a
> fighter pilot, you're up there - there might be two of you, a two crew
> operation - but essentially it's a very specialised role and you're trained to
> fight a war. You're not doing that in the airlines you're learning how to
> operate as a team and that's important. But it's a team in a unique
> environment, with the two pilots, the staff down there and the passengers,
> and you've got to be able to get on (Chris).

The importance of teamwork in any multi-crew flying environment, as opposed to single seat flying, is fairly evident. For the safety of passengers, the crew and people on the ground it is important that pilots can communicate and work effectively together. One of the reasons for having two pilots is as a double checking mechanism. In most situations you would not want a captain acting on their own without consulting or informing their co-pilot and/or crew.[30] Whereas single seat pilots, when flying, at most times act on their own judgement, even if following orders. The division is not as simple as fast jet vs. multi-crew flying, since twin seat fast jet pilots also work as part of a team in the air and require teamworking skills. Of course it can be argued that all pilots need teamworking stills since they are part of a larger team, which includes the airline, the squadron, the ground staff, the cabin crew, etc.

Another factor pilots used to differentiate single seat flying from multi-crew and multi-engine flying was management skills.[31]

> The difference between the multi-engine world and the single seat world, is
> that a multi-engine pilot is able to take that information and deal it out to a
> group of people - however many may be on the flight deck - and get them
> to help out ... Again the single seat and multi crew world are different
> because the single seat guy might not have some of the skills which the
> multi-crew man has, and that is the ability to delegate and stuff, and use
> people (Keith).

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[30] It must be noted that there are some circumstances, especially in military flying, where you may want a captain working on their own; for instance in covert operations and wartime situations. However a captain would still need to inform the co-pilot and aircrew of what action they were taking.
[31] What I have labelled effective management includes traits which pilots mentioned such as ability to delegate, ability to prioritise, able to manage people, and ability to communicate, amongst numerous others.

As discussed in the previous section the job of the airline pilot, especially for the captain, is nowadays about managing the flight. The job of an airline pilot is increasingly becoming a managerial and instrument supervision role, especially with the development of glass cockpits.[32] In effect airlines train pilots to be good managers. Thus it is hardly surprising that effective management was mentioned by nearly two thirds of the civil pilots compared to only a third of the RAF pilots. Hence we can see how the job pilots do can influence their ideas of what characterises the 'right stuff'.

From the above list we can see that "natural" flying abilities or "the skill" to fly are also seen as important. This was a trait mentioned by 75% of RAF pilots but less than 25% of civil pilots interviewed. Again this could be a result of the emphasis placed on hand-eye co-ordination by organisations. The RAF spends a lot time and money testing candidates for flying ability, although as we have seen airlines also use such tests. The RAF may emphasise this trait more than others, thus influencing its relative importance to RAF pilots.

Many of the pilots talked about an awareness of everything that is happening and the capability to process a multitude of data very quickly. Some pilots described this in terms of intelligence, others as a 'natural' ability, but is also referred to as mental capacity. Mental capacity refers to how much information a person can process at one time before they become overloaded. The training process and flying experience provide pilots with a certain amount of this ability; just by training their minds to think and process information in a certain way. This is another trait which, during the interviews, pilots used to differentiate multi-crew flying from single seat fast jet flying.

> ... the multi-crew pilot can afford to have not such a great degree of capacity as the single seat pilot who has to do it all on his own. But still they have to have a good level of capacity to be able take all this

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[32] This term has developed to refer to they type of cockpits which have numerous computer screens and thus appear to be made mostly of glass.

> information in then hand it out to other people to do the jobs, to have them come back with the goods. So capacity is a big thing I think (Keith).

> You've got to have a lot more capacity to fly the Harrier because of that. Because you're doing everything yourself (Mary).

Some of the RAF pilots talked about limits of mental capacity being a reason why they were either doing a particular sort of flying (e.g. multi-engine and not fast jet) or may not be able to fly a certain aircraft (e.g. the Eurofighter). The term was hardly used by the civil pilots and the notion only vaguely referred to, whilst for the RAF pilots it was the second most mentioned trait. In the selection process effective intelligence, which includes mental capacity, was a trait the RAF saw as particularly significant for pilots. Again there is a link between institutional and individual notions of the 'right stuff'.

The next two characteristics on the above list, attention to detail and not panicking, appear to stem from the necessity of safety in aviation. In flying following the regulations and being safe is very important. Civil aviation has regulations set by the CAA, and the RAF has these and its own sets of rules and regulations. Pilots are trained to know the rules and limitations and to follow them.[33] However not panicking was the third most mentioned factor for civil pilots and hardly mentioned by RAF pilots. The reasons for this are unclear since it would seem to be required in both areas of flying. We can speculate that this may be due to organisational and training influences, for instance in civil training being calm may be stressed more than in RAF training. Calmness was also mentioned by the airlines as desirable but not in particular by the RAF recruitment officers.

Acceptance, determination and confidence were amongst the most mentioned traits by female pilots, however they were far less important to the male pilots. Acceptance was also important for all the RAF pilots. Acceptance into the military culture is very important for any Air Force pilot. If a person does not fit into the dominant

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[33] However part of being an RAF pilot is pushing the limits of restrictions both technical and official, or in aeronautical terms, pushing the envelope.

culture then it is most likely they will be rejected at some point during training. A socialisation process occurs during training, for both military and civil pilots.[34] However as we shall see in subsequent chapters civil pilots find their job encompasses less of their lives. Being part of a military organisation is also about accepting a way of life that is largely dictated by others; as several RAF pilots said, being in the forces makes flying a lifestyle choice. Female pilots also have to accept being a minority, sometimes receiving different treatment, and for instance, as Susan, an RAF helicopter pilot, stated, "you've got to be able to accept banter". Thus we can see why acceptance may be more important to female pilots than male pilots.

Determination and dedication were characteristics also emphasised by all pilots, but especially women. Pilot training can be very stressful. For civil pilots there can be financial pressures as well as the actual rigours of training. A high degree of dedication and commitment were stressed by civil pilots as necessary to endure the delays and problems that may occur in finding a flying job. In the RAF pilots are tested at every stage of flying, which many described as the worst part of the training process. Thus dedication and commitment are needed to endure to pressures of training.

> I think to get through the training you've got to be quite determined whichever way you go, because it's very hard work and there's constant irritations ... (Alice).

For women pilots there are the additional pressures of being highly visible and having to prove themselves. As we have seen, during the selection process the RAF also looks for motivation and determination, seeing these as significant traits.

Finally women saw confidence as a requirement for a pilot. Female pilots need the confidence to enter a male dominated profession in the first place, and as one female fast jet pilot stated, "you've got to be very confident in your own abilities" (Marie), in

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[34] This socialisation process is discussed in depth in Chapter 6.

order to succeed. We shall see in Chapters 6 and 7 how these traits enable women to fit into aviation, or not.

It is noticeable that many of the characteristics suggested by pilots are similar to those sought by aviation organisations. The training and socialisation of individuals into the cultures of aviation is the way the 'right stuff' is moulded in line with organisational expectations, although with varying results depending on individual experiences. It is clear that institutional notions influence individual pilots' notions of the 'right stuff'. Female and male pilots see different traits as important, which is probably due to their different experiences as a pilot; although we have to look to the working practices of pilots for further evidence.

Without referring to gender stereotypes it is difficult to say how both the pilot and institutional notions of the 'right stuff' relate to gender. Reducing analysis to gender stereotypes in this instance would not be productive in understanding the construction of gender within aviation, since from this research it is unclear whether pilots and organisations actually relate their constructions of the 'right stuff' to gender in any way.

Individual Pilot Identities

By taking two examples of pilots comparing themselves to their ideal pilot, we can see how pilots use both their own identity and institutional notions of the 'right stuff' to create a pilot identity.

Andrea, a student civil pilot, when describing the characteristics necessary for a pilot used herself as an example.

> I think you have to be confident ... Like I said to you, my instructor says I'm not confident, and he says, the problem is that if I'm not confident then I give off the vibes to the passengers that I'm not confident, which makes them nervous ... I think you have to be in some ways quite daring. I think I do fit into the characteristics from ... you know like I'm the kind of person who loves going on rollercoasters. Like you know I'm not

> afraid to try anything once...You definitely have to be somebody who can multi-task quite a bit. I'm quite good at multi- tasking...You have to have quite quick reactions. Like I've got quite quick reactions. Like if you threw something across at me now I'd catch it quite quick, because I always do react quite quickly. You do need a bit of a brain. I don't think you have to be super intelligent cos I'm certainly not super intelligent, but you have to have a bit of a brain (Andrea).

From what she has been told Andrea constructs the notion that a pilot must be confident. In the interview she revealed that her lack of confidence was giving her problems during her training. Interviews with colleagues on her course also revealed that they also saw a lack of confidence as her problem. Therefore, although Andrea can fit her own pilot identity with that of her ideal in many aspects, she lacks the 'right stuff' until she gains confidence. We can see directly how a voice of authority, the instructor, influences Andrea's notion of the 'right stuff'

Andrea also lists being daring and a risk taker as necessary for a pilot. The images of the adventurer and the 'ace', as discussed in the previous sections, include aspects of risk and daring. Thus there is a commonality between Andrea's pilot identity and symbolic pilot identities. It cannot be said whether these are linked or not, but it is an interesting thread.

Marie, a RAF fast jet pilot in training, was asked how she saw herself in relation to her ideal pilot.

> I think I'm a very strong character. Definitely aggression. Yeah that's not a problem. All the things that you think a female wouldn't have, I have probably got ... I haven't really flown properly for a year ... And I've come here thinking I'm crap. Because you've had such a long period and you're mind's just gone stale ... As soon as I start flying I think, "of course I can do this", and I get my confidence back ... I've definitely got the hands. The hands bit is not a problem. Mental capacity is my problem, and that is where I will have my ... You see everyone whose chopped it's mental capacity, and nothing else. But I think that – the determination. My problem was I was very determined until I met this bloke, and then basically lost – started thinking, "wow multis [multi-engines] might be good"... live at home. And this is my major snag (Marie).

Marie compares herself to her ideal pilot in terms of flying ability, mental capacity, confidence and determination; all the things many pilots voiced as important. Her personal life has affected her determination which she sees as affecting the type of aircraft she many fly in the future. To Marie the fast jet pilot is determined. She feels she is lacking in determination because of her personal life and her desire to live with or near her partner. Multi-engine flying can offer a more secure home life. This lack of determination inhibits her from fulfilling the fast jet pilot role, so she is considering alternative flying roles. Her perceived lack of mental capacity - for instance not doing as much pre-flight preparation as some other student pilots - could also inhibit her from fulfilling the fast jet pilot role. Thus Marie is trying to find a pilot role that fits with her own pilot identity, which she has developed. Other pilots and the RAF no doubt influence her ideas of a fast jet pilot role and a multi-engine pilot role.

Marie also sees herself as having characteristics, such as aggression, which may be are not the perceived norm for women. Marie views herself as different from what a woman should be and is creating her own gender identity influenced by notions of what a pilot's identity should be. Therefore her individual gender identity and the collective pilot identity she performs overlap.

These two people have constructed ideas of what they should be but there are also things they should not be.

> SG   What sort of people have problems [with training]?
> Ian   The loners. People who educationally/intellectually are really inferior ... I don't mean intellectually inferior - a poorer standard. People whose human skills are perhaps a bit inferior. These are the people who will always have difficulties. And you can spot them within two minutes. The first day they arrive ... You can spot these characters a mile away ...

Hence from the first minutes of training to become a pilot it seems an individual has to fit with established notions of the 'right stuff', even if they are slightly adapting those notions to their own needs. Hochschild's (1983: 95-97) study of flight

attendants found that potential flight attendants 'acted' to the expectations of the job during the interview, prior to being recruited. The same could be true of pilots. Individuals may perform to the role of the pilot even before training begins, although I have no evidence to comment on this one way or the other.

These examples indicate how individual pilots create their own pilot identity, which may be in conflict with other identities, such as gender. This individual identity is influenced by established institutional norms dictating the pilot role but it also seems to be influenced by wider notions of the 'right stuff.

PILOT IMAGES

Only a third of the pilots interviewed were directly asked about the images of the pilot.[35] However from these responses, and discussions in other interviews, I have identified four images that pilots perceived as existing within professional aviation. These images also indicate roles that pilots live up. These four images are discussed in this section.

The Corporate / Professional Pilot

One civil pilot described the professional role of an airline pilot by stating,

> you're aware that you are providing a service to people who are paying a lot of money. That you're responsible for these people's lives ... and you have to get them safely back on the ground (Andrea).

The professional role of the pilot is about responsibility. It is about adhering to regulations and flying safely. As one instructor said, "You've got to comply with the rules" (Pete), although it is also more than this. It is also about portraying a particular corporate pilot identity, whether for an airline or the RAF.

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[35] As noted in Chapter 3, this was due to the theme and importance of image only being discovered after quite a few interviews had been conducted.

There are several aspects to this corporate image; there is the uniform and the necessary appearance to go with that uniform. When Ben was asked about the images associated with pilots he responded,

> Because the uniform does create a lot of respect and I think they [the passengers] respect the pilots more than the cabin crew, which is a shame ... Obviously you have to be clean cut. Certainly walking through the terminal at the end of the day going back to the office, most people look at you. You're an advert for [the airline] ... You can't go round with a shirt hanging out or stubble or blood shot eyes ... it might make a difference between them [the passengers] flying with us and flying with a rival company (Ben).

> I mean I do like the uniform because I feel a bit more like a pilot ... I think the image is a corporate image actually because you want to sort off give an image of efficiency and everything. And if you look good, the customer's going to think the airline must be quite efficient (Alice).

For these airline pilots, the uniform commands respect and allows them to 'feel' like a pilot. To the individual wearing the uniform it is a way of demarcating the pilot identity they have to assume from other identities. Thus making performance of that identity necessary when wearing the uniform. Obviously different identities will overlap. There are various identities pilots have to perform; the professional pilot, the military pilot, the airline pilot, to name just a few. All these collective identities overlap. They also overlap with individual identities and become part of an individual's identity.

The uniform is also linked with responsibility and efficiency. If a pilot looks 'professional' in their uniform then that will reflect on their airline, or in the military on their unit or squadron.

> ... everyone loves someone in uniform ... the public ... want to see people in uniform marching being smart ... Responsibility just boils down to ironing your trousers, polishing your shoes etc ... Your first impression of them is they must responsible, clean shaven, their hair's all done up, their clothes are perfect and that, and it just conveys an image ...(Peter)

This RAF pilot equates the uniform and perceived responsibility. One civil instructor said that when a new student puts on their uniform immediately they change and assume a corporate and professional image. So the uniform is very important for this image of the professional pilot, but it is also about following rules and fitting with the organisation. This is not the only occupation where physical appearance is equated to 'professionalism'. In a study on flight attendants Hochschild (1983) found that the attendant's smiles was part of their image and uniform. The airlines told them their smile made them appear 'professional' since they would appear caring and concerned for the customers and relaxed about the airline's flight safety. As we shall in subsequent chapters, to succeed as a pilot it is crucial that an individual fulfils this professional image and role.

Sexual Attraction

> There is a perceived image that pilots are all arrogant and every time you go out you pull girls. It's not true. It's absolute lies... (Charles)

> When you're out at night and trying to pick up girls, you attempt to live up to it [i.e. the image] (Rick).

> Some of the guys were really into the image. They were quite tall, good looking, the chiselled jaw, and all that, the flying jackets and all this sort of stuff. And there's me in my scruffy old shoes and the jeans and the jersey ... It's quite funny 'cos some of the guys it's not – this can't be their only reason for doing it, but the girl pulling possibility is definitely there. (Alice)

As discussed previously part of the image of the 'ace' is sexual attraction. It seems that this still remains one of the images of a pilot. From these comments we can see that it may not be true and some people actively try to live up to it. As a woman there is a dilemma for Alice, since this image is about men demonstrating sexual masculinity to women. Heterosexual women conventionally highlight aspects of femininity to attract the opposite sex. Alice chooses her own style, but other female pilots interviewed found that they

could use their 'difference', namely being a pilot, to attract men. However this sexually attractive image of pilots centres on demonstrating masculinity.

The Military Pilot

The military pilot is an image voiced by both the RAF and civil pilots, although the RAF pilots talked more about how popular images have contributed to this image. One fast jet pilot commented that the RAF tries to emulate some aspects of "the clichéd Second World War pilot", the camaraderie and l'espirit de cours in particular. Another stated,

> ... you have to conform with all the stereotypical fifties, well what I would call the stereotypical fifties image ... I think most people watched 'Top Gun' and got affected by that. I probably was as a child. You feel that you have to fit a stereotype, but to a degree ... Somebody once told me that they thought 'Top Gun' reflected real life, but that was only true because real life reflected 'Top Gun' ...(Rick)

Here we can see direct examples of how film and the media have influenced the images that pilots emulate in their own job. It is clear from the above quote that popular images to extent affect the working practices of current pilots. Although another pilot stated that,

> The public image nowadays I think came from "Top Gun" and that kind of thing, and I think that's how they expect most people to act. The reality is far more likely to be drinking and boozing (Ron).

So we have a notion of the military pilot who enjoys drinking, camaraderie and attempts to emulate popular images. This living up to stereotypes was also commented on by civil pilots. One stated that the only pilots who live up to the stereotypical images were fighter pilots, while another commented,

> It's a two-wing master race. Particularly the ex-military, because that's where it's very readily apparent. They do seem to consider themselves a bit of a big man. The rest of us are only mortals (Ian).

This suggests that the military pilot is also characterised by arrogance. An arrogance which may stem from the following view.

> Not all of us all will have the aptitude of a harrier pilot. I mean they are the best that we can train at the end of the day (Neil).

Neil was not the only pilot to voice this view. The single seat fast jet pilot is seen as better than other pilots. This also extends to a view that RAF pilots are better than other pilots; hence any arrogance may stem from this belief.

The image of the military pilot is dominated by notions of what characterises a single seat fast jet pilot. This is an image that even RAF multi-engine and helicopter pilots try to emulate. During the interviews an image also emerged of the airline pilot who just sat pushing buttons. However no one stated that they tried to emulate that image, unlike that of the military pilot.

The Glamour of Flying

> When I started flying, my image when I went into it, was the dashing chaps in uniform. The white scarves billowing out and spending 20 days out of 28 under a palm tree in some far off land with a bottle of bacardi and a couple of days flying a month (Mark).

The words glamour and glamorous came up time and time again during the interviews. The quote from Mark above outlines this glamorous image. It is very attractive and harks back to the romantic notions of flying. This is very much linked with the images of the adventurer and 'ace' pilots.

It is clear that the professional and corporate image that pilots hold of their job is influenced by aviation organisations. Yet like all the images pilots hold it is also clearly linked to images of aviation in popular culture and wider society in general. All these images are also connected to the attractiveness of aviation.

THE ATTRACTION OF AVIATION

One way of understanding the continued male dominance of aviation is to ask whether the masculine symbolism associated with flying is part its attraction to certain individuals. The same symbolism may also repel other individuals. Over half the pilots stated that flying and becoming a pilot was a childhood dream. Unlike a USAF study (Reed 1997) which found this to apply more to male pilots than female pilots in the USAF, I found that men and women pilots had equally dreamed of becoming pilots since childhood. This section will examine the role of images and notions of the 'right stuff' in influencing this dream. However the interviews indicated that images were only part of the attraction and other factors are also important.

The Influence of Imagery

Only a quarter of the pilots interviewed stated that images had attracted them to aviation. The romantic popular images of the adventurer and 'ace' pilots seem to be the most influential set of images, however other images were also cited, namely the professional image of the pilot in uniform and the limited images of women pilots.

This group of pilots cited the romantic images most often. The sorts of images mentioned included the film *Top Gun*, stories about Second World War pilots and the "fighter pilot image". One pilot commented that "It was just pure boys own stuff". Here we see a direct influence of the popular images discussed earlier in this chapter. These images also influenced equal numbers of male and female pilots in my study. One might assume the popular masculine images would appeal more to boys, although for the women who become pilots they also have an attraction.

One airline pilot, who as a child lived near an airport, stated, "I saw them in their uniforms and everything, so I thought I'd like to be a pilot". This is the only example where the uniform and the professional image - as mentioned above and

which was identified by pilots themselves - seems to have influenced an individual's choice to become a pilot.

> And you get things, when Jo Salter was the first woman pilot. I mean that was a big thing on the TV and in the papers, and that makes you sit up and go, "wow, women are actually doing some of these things" (Rebecca).

This comment by an RAF pilot demonstrates that the publicity about the first women entering the RAF had a positive effect in making her think of it as a career option. Hence 'pioneering' women entering aviation do act as role models to other women. Thus we can see that a variety of images aviation, including the popular masculine imagery, can attract individuals into the occupation.

The Influence of Others

The influence of others was by far the most important factor in effecting the decision to become a pilot. Just under half the pilots interviewed gave examples of other people, events, places and organisations that had influenced their desire to fly. The biggest influencing group were relatives. However only 15% of the pilots stated that there was any history of flying in their family. The influence of relatives mainly occurs in two forms. First, there is encouragement, for instance one female pilot commented that her mother said, "you may as well go for it" in relation to her daughter becoming a pilot. Second, relatives also brought the pilots into contact with aviation, for instance a few related how their father took them to air shows or how a parent worked in the aviation industry.

Another group that influenced some pilots were friends. Two of the pilots stated a friend had introduced them to aviation, and other had a boyfriend who was a pilot and got her interested in flying. This is a much smaller influencing group than relatives but still important. A more influential group is what I have named events and places, for instance air shows, living next to an airport or going on holiday. This clearly overlaps with other influencing groups, for instance the father taking their child to an air show. All of the groups overlap in various ways.

The final category I have identified as an influencing source are organisations. The Air Training Corps (ATC) and the University Air Squadron (UAS) are two such organisations. It is unclear how many of the pilots interviewed belonged to the ATC but two claimed it as an influencing factor. On the other side, 35% of the pilots interviewed had at some point belonged to a UAS. The UAS also influenced many of the pilots' desire to belong to the RAF, although not all became RAF pilots.

Pleasure and enjoyment

The second most important factor attracting pilots to aviation was, what I have labelled, pleasure. This includes elements such as fun, excitement, challenges, freedom and control. These elements form a perceived idea, constructed by the pilots before doing the job, of what professional flying involved - in part based on any flying experience. Some of these facets conjure the image of the adventurer pilot. Thus there seems to be a connection between this perceived ideal of the job and the romantic images of aviation, and it seems these images influenced expectations. These expectations appear to be based on a form of hegemonic masculinity. For the pilots their expectations are fulfilled to varying to degrees. Several pilots said of the job that "it's not like work" or "it's like a hobby". This is summed up by Susan, an RAF helicopter pilot who said, "We do it for the fun and the fact that it's not really a job, it's a hobby that we get paid for". Most the pilots interviewed do get some form of pleasure from their job, as we shall see in next chapter.

There are several aspects to the pleasure of flying. One aspect is the fun and excitement of being in the air; another is mastering the technology and being in control. Two RAF pilots stated they wanted to fly single seat fast jet because they would have complete control of the aircraft. A few pilots also saw the risk and danger of the job as attractive. For others flying fulfils more esoteric desires, such as being distant from other people and seeing the earth from above. There is also what one pilot called "being at one with the machine", in a way the pilot almost becoming

part of the machine or the machine an extension of the pilot: a cyborg. The pleasure of flying was part of the attraction for both men and women although slightly more men discussed it during the interviews.[36]

Certain types of flying were seen as more exciting than others by the pilots; fast jet flying being exciting while airline flying, particularly long haul, was "boring". All the UAS pilots interviewed said they wanted to become fast jet pilots because they perceived it to be exciting. One helicopter pilot stated that she did not wish to be a search and rescue pilot because it was "an old man's job", and would not provide the challenges and excitement that she desired. On the other hand, several RAF pilots stated that they were not attracted to airline flying because it was "exceedingly boring", and involved sitting watching dials and screens for hours on end. A short haul airline pilot and a civil instructor gave the same reasons for not wanting to fly on long haul routes. Ben, a short haul airline pilot stated "the take off and landing's the best bit. It's the most exciting bit."

The pleasure of challenges was also mentioned as a factor making some forms of flying more attractive than others. One pilot stated, "it's the aircraft role rather than the aircraft itself which I'm interested in," because it provided a challenge. Three others also stated that you have to aim for the hardest thing, meaning the most challenging flying. What was seen as challenging varied according to the pilot's situation; to airline pilots flying the Scottish Highland and Island routes was seen as a challenge, whereas to RAF pilots low level flying or tactical flying were seen as challenges.

'Out of the Ordinary'

A less important factor attracting individuals to flying is that being a pilot is 'out of the ordinary'. The main arguments presented were that it was not a 9am to 5pm desk job or a "normal" job. To them it was a job which would provide some excitement.

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[36] All these aspects of the pleasure of flying and its meaning to male and female pilots are discussed further in Chapter 5.

Only the female pilots named this as a factor attracting them to aviation. Being a pilot may seem more unusual and less "normal" to women than to men, since there are still so few women in the occupation. For instance if a boy says that when he grows up he wants to be a pilot then that is more expected than if a girl said the same thing. So in a way it is hardly surprising that the female pilots saw flying as attractive if they wanted an 'out of the ordinary' job.

Job Prospects and Lifestyle

A professional pilot has a certain perceived status and is rewarded financially. Some pilots, particularly managers and instructors, thought the status and pay of professional flying was now attracting more individuals to aviation.[37] However none of the pilots interviewed stated this as the main reason why they entered flying, but a few did mention it as one of many reasons.

The opportunities of the job, such as travel, sports, a variety of aircraft types and aircraft functions, along with the lifestyle were also factors mentioned by the pilots. Opportunities of the job and the lifestyle were the most important factors in attracting pilots into the RAF.

Lifestyle was also a factor that repelled some pilots from certain types of flying. One RAF pilot did not want to fly single seat fast jets because as she said,

> I don't think I would be want to be running around with my head on fire, thinking, "oh my god. What do I do next? Oh my god" for the rest of my life.

She also did not like the locations for single seat squadrons, because of her domestic circumstances. On the other hand the regulated and restricted lifestyle of the military deterred some airline pilots from entering the RAF.

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[37] The average salary for a British airline pilot in 1997 was £45,000, however this does vary according to the size of airline and type of flying done (Data supplied by CAA). The starting salary for RAF pilots, after completing IOT, in 1998 was between £15,000 and £20,000 depending on whether they had a degree or not (Data supplied by RAF OASC).

All these factors influencing and attracting individuals into aviation were based on the perceived expectations of the pilots. These expectations in some cases have clearly been influenced by romantic images of aviation, but the reality of the job can be far from these romantic ideals, as we shall discover in subsequent chapters. As one RAF candidate assessor commented, recruits were soon "disabused" of any romantic notions about flying. He also said of being a pilot that "it's a dirty, sweaty, grotty job at times. Not terribly glamorous" and "a hard graft".

CONCLUSION

There are many images of flying and being a pilot. This chapter has discussed the romantic images of the adventurer, the 'ace' and the aviatrix as constructed by popular culture. In terms of gender symbolism these images construct a notion of the 'right stuff' which demonstrates hegemonic masculinity, to the exclusion of any femininities and other masculinities.

Institutional notions of the 'right stuff' clearly dictate - to a large extent - who becomes a pilot, by setting strict physical and mental targets that pilot candidates have to meet. These targets act to exclude more women than men. These institutional conceptions of the 'right stuff' also influence how pilots within those organisations define their own identity and construct their own conceptions of the 'right stuff'. The attributes professional pilots perceive as necessary for a pilot are similar to the attributes defined by aviation organisations. Individual pilot perceptions also vary depending on what organisation they fly with and what type of flying they have done. Pilots also influence institutional notions of the 'right stuff' just by doing their job. It is difficult to say whether institutional and individual lists of pilot attributes reflect any masculinities or femininities without reducing them to gender stereotypes, which in this instance would not be productive. Yet there are some sexual differences in pilots conceptions of the 'right stuff'.

By looking at how pilots construct their own pilot identities, we can see how collective pilot identities, particularly those constructed by aviation organisations, and individual identities interact. Pilots try to emulate these collective identities creating their own personal version. However it is also clear that popular images of the pilot and images of the professional pilot also influence the construction of individual, and possibly collective, pilot identities.

Pilots themselves identified images including the corporate / professional pilot, the sexually attractive pilot, the military pilot and the glamorous pilot. All these images in varying ways can be related to the popular images and institutional notions of the 'right stuff'. Yet none of these four images touched on the risk and danger of flying which is an important attraction to the job. We can see that popular images, institutional conceptions of the 'right stuff' and the images and definitions of the 'right stuff' constructed by pilots themselves are all inter-related. However from this research it is still unclear to what extent pilot and institutional notions of the 'right stuff' influence the wider and more popular aviation imagery. We can assume a degree of influence but this is an area for further research in the future.

There is no one definition of the 'right stuff' and this chapter has not aimed to provide a comprehensive definition. However all these constructions of the 'right stuff' affect the various roles a pilot has to fulfil, whether that is the professional pilot role, the military pilot role or the fast jet pilot role; there are also many other roles which are further discussed in Chapter 6.

The images associated with pilots may act to exclude many women from aviation, but the women who became pilots found the images as appealing as the men who became pilots. It seems likely the masculine associations with some of these images do attract more men than women. However to understand the full impact of this imagery we need to explore if these women pilots are unusual in finding the images appealing, and if so, why do they appeal to them and not other women. The same could also be applied to men; are the men who become pilots unusual in finding these images attractive? One would expect not. There is also a need to ask pilots

more about how they construct their own identity in relation to the various notions of the 'right stuff'. In this study I have only scratched the surface of this topic. It could also be useful to investigate, historically, the influence of aviation images on men and women, both those in aviation and outside. Women have played an important part in the symbolism of aviation and are not completely excluded. Any such future research would contribute to a wider understanding of the development of aviation and female participation in the industry.

Further research is definitely required on aviation symbolism both in relation the construction of gender in aviation and understanding the male dominance of the occupation. This and other research is needed to further our understanding of the relationship between gender symbolism, gender identities and the continued male dominance in some areas work and other aspects of everyday life. Future research on potential pilot recruits could also highlight at what stage individuals start to perform pilot identities and live up to expected pilot roles.

Chapter 5

The Risks and Pleasures of Flying

INTRODUCTION

Technologies can be part of an individual's presentation of themselves (Lie 1996: 205). For instance for some engineers demonstrating the pleasure gained from working with technologies is an integral part of their own identities (Faulkner 2000, Mellström 1997). Sally Hacker (1989, 1990) found that engineers derive sensual pleasures from working with technology. Samuel Florman (1976) devoted a whole book to discussing the sensual, emotional, spiritual and aesthetic pleasures engineers derive from technology. Pilots also derive such pleasures from flying aircraft. This chapter focuses on the pilot as a user of aviation of technology and investigates the pleasure that is derived from that usage. However the pleasures of flying are closely intertwined with the risks associated with flying. The elements of danger and risk in aviation make it attractive to some pilots and add to its excitement. Thus in order to understand the pleasure of flying you also need to understand the perceived risks of flying. This chapter addresses the question of why pilots find flying thrilling by exploring how pilots perceive the pleasures and risks of aviation. The aim of this chapter is to examine pilots' relations with aviation technology and how those relations contribute to the construction of gender in aviation.

After outlining how perceptions of risk can vary, this chapter explores how experts view the risks of flying and then how pilots themselves perceive those risks. These two sections show how different groups can perceive risk and how those perceptions can be influenced by external factors, such as training or personal experience of accidents. The perceived risks of flying add to its apparent excitement, hence this

chapter also explores what makes flying pleasurable and exciting to pilots. Pilots derive pleasure from many different aspects of flying, however control, freedom and challenges seem to be some of the main sources of enjoyment. Aviation technology itself gives some pilots pleasure, yet pilots have varying degrees of technical interest in aviation technologies. Thus the next sections explore the technical interests of pilots, and how pilot attitudes towards flying and the 'thrills' of flying can change over time. Finally this chapter discusses what the pleasures and risks of flying means for gender within aviation.

PERCEPTIONS OF RISK

For pilots part of the pleasure of flying is the perceived risk of flying. However perceptions of risk are highly variable. No activity or decision is free from risk (Luhmann 1993: 28). Therefore risk assessment is designed to help identify, characterise and quantify risk (Slovic 1987: 280). Yet what exactly is risk? Niklas Luhmann argues for a distinction between risk and danger (1993: 1-31). In this case risk being something where an active decision can be made by individuals or groups, for instance to avoid or participate in a particular activity. Danger, on the other hand, is something external that is outside our personal control, for instance a hurricane. However in everyday usage these two words are often inter-changeable and defining the boundaries can be difficult. Thus there can be no absolute definition of risk, although I will endeavour to maintain a distinction between risk and danger.

The concept of risk means different things to different people. Perceptions of risk are often divided into expert and non-expert opinions.[1] Experts may use statistical models to evaluate risk, such as annual fatalities. However non-experts rely on intuitive judgements, which may be based on direct experience or publicly assessable information, such as the media. Non-experts also tend to take into account other factors besides annual fatalities, such as catastrophic potential, environmental

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[1] Definitions of 'an expert' can vary considerably and can be debated. I use the term here to refer to someone who evaluates risk in what maybe regarded as a 'rational' manner, for instance through

hazards or threats to future generations (Slovic 1987: 280-283); for instance a recent accident or media coverage of possible risks to future health will influence perceptions of risk. Risk perception and selection are closely related to social structures and relations. Hence risk has different meanings for various different groups and individuals, beyond the simple dichotomy of expert and non-expert.

Risk perception research has mainly focused on psychological studies, but there have also been sociological and anthropological studies suggesting that cultural and social factors can affect perceptions of risk.[2] Depending on your social group and perspective your appreciation of various risks will differ. Douglas and Wildavsky argue that "people select their awareness of certain dangers to conform with a specific way of life" (1982: 9). They argue that different risks are taken or avoided by individuals depending on the way of life they wish to adhere to, and the risks considered are selected by the social organisations and culture surrounding that way of life. Different groups of people will be willing, or unwilling, to take different kinds of risks, the selection being influenced by social structures. In order to change the selection and perceptions of risk, social structures have to change. For Douglas and Wildavsky (1982) there is a certain amount of "politics" involved in perceptions and selections of risk; all risk decisions being influenced by cultures and social structures. Pilots, as we shall see, chose to select different perceptions of the risk of flying, however these perceptions are influenced by aviation institutions.

Research on risk suggests that factors, such as familiarity, control, catastrophic potential, equality and levels of knowledge, influence how acceptable a risk becomes (Slovic 1987: 283). Here we can distinguish between voluntary and involuntary risks; although the distinction is not always clear (Douglas and Wildavsky 1982: 16-28). A voluntary risk is something that we are aware of, may be familiar with and may have some control over; for instance most people are aware there are risks associated with travelling in a car, train or aeroplane, but still chose to travel in that

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statistical modelling. When I use the term 'non-expert' I am referring to what might be called lay people - people who do no use scientific methods to assess risk.

way. On the other hand, an involuntary risk is something an individual may have no knowledge of, or control over; for instance you may live next to a factory and be unaware that it lets harmful chemicals into the atmosphere that may damage your health. A voluntary risk is often perceived as more acceptable to individuals because they feel they have some control over their own choices (Covello 1984: 230-231). So risks from voluntary activities, for instance learning to fly or rock climbing, tend to be more acceptable than from involuntary activities, such as nuclear weapons (Covello 1984: 230-231, Slovic 1987: 282).

Vincent Covello argues that intellectual limitations and a desire to reduce their own anxiety often cause non-experts to deny that any risk and uncertainty exists, or leads to an oversimplification of the problem (1984: 227). For instance non-experts may believe that a low probability risk is never going to happen to themselves, so dismiss that risk and take certain actions they would not do otherwise. However even with a low probability risk, the risk is still there and may occur whether that individual perceives it or not.

Individuals use a number of rules (i.e. heuristics) to shape their perceptions of risk (Covello 1984: 227; Slovic 1987: 281; Slovic et al 1980: 183-189). The most common rules identified are:

1. Information availability

> There is a "tendency for people to judge an event more frequent if instances of it are easy to imagine or recall" (Covello 1984: 227). For instance flying is generally perceived as an activity with a fairly high risk. The level of risk also depends on the type of flying undertaken. Flying the new Eurofighter or a glider is seen as more risky than flying in a Boeing 747, because the Eurofighter is a new aircraft whilst the Boeing 747 is a tried and tested aircraft. There is an adage that flying is safer than crossing the road, which may be true.

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[2] For such approaches to risk see Niklas Luhmann (1993) and Mary Douglas and Aaron Wildavsky (1982).

However aeroplane crashes can be large and catastrophic events, therefore they are easier for people to recall. This can lead to the perception by non-experts that flying is more dangerous than experts' statistical assessments would have us believe. Here we also have an example of how non-experts typically give a greater weight to hazards that take many lives at one time, whereas technical experts will give equal weight to events with many and few lost lives (Covello 1984: 232). For experts all deaths are weighted equally while for non-experts an accident, such as a train crash, with numerous deaths will be more memorable and therefore more catastrophic, than, for instance a road accident, where only one person dies. Hence overestimated risks tend to be dramatic and sensational whereas underestimated risks tend to be more unspectacular events (Slovic et al 1980: 183-4).

It is clear that these oversimplifications can lead to misperceptions about levels of risk. Studies show that the risks of low frequency events tend to be overestimated while high frequency events are underestimated (Covello 1984: 228). The media can also have a role in stimulating these perceptions. Aeroplane crashes make more sensational news than the number of heart attacks or cancer cases. For instance the 1988 Pan Am incident at Lockerbie in Scotland or the 1996 Pan Am crash near New York are still remembered while someone drowning is generally long forgotten. Crashes of smaller commuter aircraft and private planes generally receive less media attention than those of large airliners (Oster et al 1992: 3). There has also been an increase in the numbers of near mid-air collisions (Oster et al 1992: 4), but these go largely unreported by the media. Hence these 'smaller' events are likely to have less influence on public risk perceptions of flying than large catastrophic events.

2. Representativeness

The second most important rule is "the tendency for people to assume that roughly similar activities and events (such as nuclear power technologies and nuclear war) have the same characteristics and risks" (Covello 1984: 227). For

instance flying in a 20 year old Boeing 747 with one airline may be perceived as having the same risk as flying in a similar 20 year old Boeing 747 with another airline. The risk may be perceived as similar, however the airlines have different safety procedures and maintenance records, so statistically one airline's Boeing 747 may be safer the other airline's Boeing 747.

3. Overconfidence

Overconfidence in risk estimates is another problem for both experts and non-experts. "In general, people underestimate the risk of activities that they perceive to be familiar and under their personal control, such as automobile driving" (Covello 1984: 229). For most people flying is not under their control and may only be an annual event. Hence such people may perceive flying as more risky than a pilot who flies nearly every day and is in control of the aircraft or the business traveller who regularly flies.

Experts can be prone to overconfidence. Experts can overestimate current technological and scientific knowledge and not identify the dangers. Human responses and errors can also be underestimated. Experts can also sometimes miss the most basic risks because they seem to be entirely controlled (Slovic et al 1980: 186-188). This can include overconfidence in safety measures, either technological safety systems or safety procedures that individuals have to follow. Of course systems can fail and procedures can be missed or forgotten. Human responses to technological systems are also sometimes overlooked. People do not always use technological systems in the ways for which they were designed. Thus experts cannot account for every possible outcome when they assess risks.

There are also other factors outside of these rules, which influence perceptions of risk. Research has also found that the more benefits an activity appears to give, the less risky it is perceived to be (Slovic 1987: 282). For instance many people would accept that using pesticides in farming is acceptable and low risk, since it means

better supplies of food, however there may be some long-term health and environmental effects.

How much a technology or organisation is trusted also influences perceptions of risk. The more trusted an activity or technology the less any risk is perceived (Douglas and Wildavsky 1982: 32-35). Douglas and Wildavsky discuss "institutional mistrust" 1982: 32-38), saying that as technology becomes more complex we actually trust it less, and also mistrust the organisations that control it. This is not just because of physical dangers but also based on moral judgements. Hence perceptions of risk are not based on 'scientific' and rational evaluations, and are highly political. All knowledge of any risk is partial and limited; so risk assessments are based on value judgements (Douglas and Wildavsky 1982: 67-82). Perceptions of risk change over time and can be influenced by powerful groups (Douglas and Wildavksy 1982: 174-195). If a government withholds information about a certain danger and risk, then perceptions of that risk may be kept low.

Slovic, Fischoff and Lichtenstein (1980) conducted a study to examine risk perceptions amongst different groups. General (private) aviation, namely flying in small and light aircraft, and commercial aviation were on a list of 30 activities and technologies, ranging from nuclear power and antibiotics to hunting and swimming; which four different groups of people were asked to rate in terms of risk (Slovic et al 1980: 191-212). The groups included experts, college students, Active Club members and the League of Women voters. Several models were used to analyse the perceived risks. Using one model, general aviation ranked at between 7 and 15 on the list of 30, beside police work, alcoholic beverages and surgery.[3] Commercial aviation ranked at between 16 and 18 alongside bicycles and electric power. Thus in this model commercial aviation is perceived as safer than general aviation. However on another model general aviation ranked along side railroad collisions, commercial aviation and sport parachutes. Thus measuring risk perception can be very difficult and can also vary depending on the methodology and measurements used.

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[3] General aviation in the general sense referred to here includes private light aircraft, flying clubs, flight training schools, small air taxis and private jets.

Risk perceptions vary between different groups, can be influenced by familiarity and powerful organisations, and can be measured with varying results. Attributes such as sex, race, ethnicity, age, religion, occupation, and so on, all influence individual perceptions of risk. One would expect that pilot perceptions of the risk of flying are going to be different from other groups perceptions of the risk of flying, however their perceptions also varying depending on sex and type of flying - as is demonstrated in this chapter. Perceptions of risk are very dynamic and can be influenced by many different factors

THE RISKS OF FLYING

This section examines expert estimations of the risks of flying and then addresses whether pilots, as non-experts, also perceive any risks. Hence this section demonstrates how different groups can perceive the risks of flying and how those perceptions can be influenced by factors, such as training, personal experience of accidents, and different types of flying.

Expert Opinions

Experts studying the risk of flying examine aviation mortality and accident rates. Over the last thirty years accident rates in aviation have fallen by nearly 50 percent worldwide (Oster et al 1992: 159). This has largely been due to improved safety and technical systems in aircraft and increased regulation. However accident rates vary worldwide with Africa, Asia and South and Central America having considerably higher accident rates than North America, Europe and Australasia (CAA 1998: 8). In the USA scheduled airline flights only account for about 12 percent of aviation fatalities (Oster et al 1992: 4). While in 1995, for UK registered aircraft, public transport fixed wing aircraft accounted for 29% of fatalities compared to 71% from general aviation fixed wing aircraft (CAA 1996: 18).[4] Table 3 shows the numbers of

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[4] In this instance general aviation is defined as all aeroplanes and helicopters below 5,700kg maximum take-off weight authorised (MTWA) involved in all types of operation excluding aircraft

people who die each year from aviation accidents. This is very small when compared to the thousands who die from lung cancer. Yet some people are more willing to run the risk of smoking than flying in an aeroplane. Flying with an airline is also clearly much safer than some other types of flying.

Table 3: UK Aviation Fatalities 1986 - 1996

Year	Public Operations Aeroplane Fatalities	Transport Helicopter Fatalities	General Aviation Aeroplane Fatalities	Helicopter Fatalities	Total
1987	1	0	52	0	53
1988	1	0	18	0	19
1989	47	0	13	8	68
1990	0	6	27	7	40
1991	0	0	19	2	21
1992	0	11	17	8	36
1993	2	0	19	3	24
1994	1	0	20	8	29
1995	12	0	17	1	30
1996	1	0	27	12	40
Total	65	17	229	49	359

Source: CAA (1997) *CAP673: Aviation Safety Review*, CAA, London, Tables 4.2, 5.2, 6.2 and 6.4.

The CAA has compared the risk of an individual being killed by flying to other forms of transport within the UK (1997: 39). For every billion passenger kilometres travelled 0.1 people are killed through air travel. This can be compared to 4 people killed in cars, 10 through water based travel, 47 on bicycles, 66 on foot and 101 per billion passenger kilometres through motorcycles. Thus it seems that flying is much safer than walk or driving.

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above 2,300kg MTWA involved with public transport operations, which form the public transport category.

There are of course some years when there are increased numbers of accidents. Oster, Strong and Zorn (1992) argue that this may give travellers and aviation workers the perception that this is the start of a long run trend. However from past data we can see that this is not usually the case (Oster et al 1992: 5). For instance the absolute figures for worldwide public transport aeroplane fatalities have been steadily increasing over the last few decades reaching an all time high of 2099 in 1996 (CAA 1997: 1-3). From these figures one might assume flying is getting more dangerous. Yet if you relate this to the growth in aviation traffic the fatal accident rates have actually fallen considerably (CAA 1997: 4). Thus, using these measurements, flying has become safer.

Another indicator, used by experts, of the increased safety of aircraft is the survivability of fatal accidents. In the UK over the last 30 years survivability has increased considerably. Between 1967 and 1976 81.6% of people on board were fatally injured during an aviation accident, this figure has been reduced to 46.6% between 1987 and 1996 (CAA 1997: 26). The improved safety features of aircraft and the training of aircrew are probably the biggest contributing factors to this increase in survival rates.

Aviation experts also assess the risk of flying through near misses or "air proximity hazards", which are situations where in the opinion of the pilot or air controller the distance between aircraft has compromised the safety of those aircraft (1997: 20-22). From 1989 to 1995 there were on average 167 of these air proximity incidents reported by military and civil pilots per year, with 42% being assessed as risk-bearing, namely almost leading to an accident (CAA 1997: 20). Thus many accidents are averted every year and again technology is playing a role with the increased use of air proximity warning indicators, although many aircraft do not carry the necessary transmitter or receiver.

Oster et al (1992) put forward the notion of "risk tiers" in aviation. In their research they used data on annual fatalities and serious injuries from aviation accidents to

assess the levels of risk in flying. They compared data from North America, Western Europe and some developing areas. In general they have found that as you go from general aviation to charter flights and air taxis to scheduled commuter flights then to scheduled jet airlines, safety improves and pilot error plays a smaller role in accidents (Oster et al 1992: 7). To some extent this mirrors the career progression of professional pilots, since pilots usually start flying the smaller turbo prop aircraft and work up to the larger jet aircraft. Thus Oster et al talk of a "safety mismatch" because the least experienced pilots tend to flying the least capable aircraft (1992:7).[5] These "risk tiers" were very evident in North America and Western Europe, however airlines in developing counties tend to be much less safe. Older aircraft tend to be sold to airlines in developing countries after many years of service elsewhere in the world, and such airlines may have less strict maintenance schedules and tighter budgets (Oster et al 1992: 157-166).

There has been a dramatic expansion in the aviation industry in the last few decades. Oster et al (1992) suggest that pilots are moving from the commuter industry to scheduled jet airlines much faster than in the past. Therefore pilots with less experience are flying jet airliners and there is less filtering of the less proficient pilots, which means that safety could be reduced (Oster et al 1992: 158). At the moment in Britain there is a shortage of experienced pilots, therefore pilots are able to move up the system quicker than previously and with less experience. It also means that pilots are being hired with less experience than in the recent past. However the interviews with airline managers do not suggest any relaxation of safety, with pilots still having to reach stringent standards in training. It is not in an airline's economic interest to relax its safety restrictions, however this may occur on some exceptional occasions.

It is worth considering the risk involved in each particular stage of a flight. Oster et al have measured these risks again using fatal accident statistics (1992: 7-14). The least risky parts of a flight are before takeoff and after landing, for instance during

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[5] Aircraft least capable in terms of the number of accidents and resulting fatalities.

taxiing, loading and unloading. The most risky parts of a flight are during takeoff and the initial climb, with landing and the final approach being slightly less risky, whilst the rest of the climb, the cruise and the descent are relatively much safer. Statistics from worldwide accidents from 1980 to 1996 show that 50% of aviation accidents occurred during the approach and landing phases of flight with another 23% occurring during take-off and climb (CAA 1998: 7). Whereas CAA data indicates that for public transport aircraft most accidents occur while being parked or during taxying, and in general aviation most accidents occur during landing (CAA 1997: 26-27). These various data sources show that all the stages of flying can be dangerous with landing and taking-off being the most risky parts of a flight. The parts of the flight, which in the interviews airline pilots state as the most exciting are also the most risky. In the majority of aircraft the pilot is actually 'hands on' flying the aircraft during takeoff and landing. From the interviews this appears to be the reason why it is exciting for pilots but it could also be the reason why it has increased risk.

When the reasons for aviation accidents are examined 'human factors' frequently occur as the main cause (CAA 1998: 11-16). For instance, from the investigations of aviation accidents worldwide between 1980 and 1996, in 76% of accidents the "crew" was the causal factor and for 67% of accidents the crew was the primary causal factor (CAA 1998: 11 and 27). The top six primary causes of accidents were a lack of positional awareness in the air, omission or inappropriate action, flight handling, "press-on-itis", poor professional judgement/airmanship and deliberate non-adherence to procedures. In the list of main causes, the next causes below these six include design shortcomings, turbulence, maintenance errors and system failures (CAA 1998: 11); most of which are technical faults. The other main "crew" causal factors of accidents are slow and/or low on approach and a failure in Crew Resource Management (CRM), namely a failure in communication (CAA 1998: 14).[6] It is clear that people are the largest risk factor in flying.

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[6] See Steven Cushing (1994) for further discussion on the problems and reasons why communication can lead to aviation accidents. He particularly notes how poor crew communication, pilot distractions and language misunderstandings can lead to accidents.

As we can see experts assess the risk of flying based on the numbers of fatal accidents or reported near misses. Pilots are non-experts, although they may be aware of expert risk assessments because they are involved in the aviation industry. By examining the attitudes of pilots to risk we can see how their non-expert perceptions of risk affect their relations and attitudes to the aircraft they fly. However pilot risk perceptions also influence the role of the pilot and reflect notions of the 'right stuff'.

Do Pilots Consider Risk?

Perceptions of risk vary considerably amongst pilots. Twenty-two of the pilots interviewed discussed the risks associated with flying, either through being asked questions on the subject directly or raising the subject in response to other questions. Of these pilots half stated that they did not think about risk, however they were all aware of some level of risk. None of these pilots stated that there was no risk attached to flying. At the far end of the spectrum some pilots used statements, such as, "It's a high risk job" (Chris), indicating that they perceive a high level of risk associated with their job. There were no clear differences between how male and female pilots perceive the risks of flying, however there was a difference between civil and military pilots.

"I have my philosophical moments, but I certainly don't think about that [i.e. the risk of flying] most of the time" (Harriet). This quote sums up a view held by many of the 22 pilots. The risks associated with flying, such as the danger of changing weather conditions, the possibility of a mechanical failure or human intervention (e.g. terrorism or being shot down), are factors pilots are aware of, but they are factors which pilots put to the back of their minds.

> So that danger element, that fear of it all going wrong, it is diminished and your confidence is increased with practising emergency handling. So you've thought about what you're gonna do when it does go wrong. The danger element, yes it's always there in the back of your mind, however

you always train to cope with it (Neil).

The training pilots receive actually influences their perceptions of risk. Neil feels his pilot training allows him to deal with any in-flight problems.

> You don't go looking for risks and don't sit there thinking, "oh this is risky". This is what the job's about. The training's all about when things go wrong (Pete).

The training prepares pilots for emergencies and problems. It also seems that the training is aimed at making pilots see the risks as minimal and feel that most problems are manageable. Here we can see how Douglas and Wildavsky's (1982) arguments about the '"political" nature of risk perceptions and selection relates to pilots. Aviation organisations provide training to pilots which influences their perceptions and selection of risks in flying. Hence those organisations actually select which risks a pilot can, and cannot, take and in order to be pilots, individuals will - most of the time - only take the risks dictated by those aviation organisations. In a way adhering to particular risk selections and perceptions is part of the 'right stuff' for being a pilot. Adhering, or not, to these risk selection rules is also part of the culture of aviation. Some pilots are praised for breaking the rules, for instance test pilots, search and rescue pilots, or when an emergency arises and it saves lives.

The training also gives pilots a greater confidence in their own ability to deal with emergencies and problems. This issue of confidence was a theme that repeatedly emerged when the pilots discussed risk. The pilots talked about having a confidence in their ability to deal with any problem. From what the pilots said this confidence helps them to view flying as less risky than some other activities.[7] For instance the following two pilots see driving as involving greater risk than flying.

> I always think I've more chance getting killed driving to [the airport] every Sunday night than I do the whole week's flying... (Andrea).

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[7] Of course overconfidence in pilots can cause accidents. See Cushing (1994) chapter 7 for a further discussion on overconfidence and non compliance by pilots.

> I would say it's slightly less dangerous than driving a car to be honest (Ruth).

Pilots also see confidence as a necessary characteristic for a pilot and part of the 'right stuff' (see Chapter 4). Here we can see how notions of the 'right stuff' are linked to perceptions of risk. Confidence in their own abilities influences pilot perceptions of the risk of flying, but this confidence is also seen as necessary for the job. Thus one could say that another aspect of the 'right stuff' is about having a particular perception of the risk of flying, namely that flying is really not that risky. Pilot training also reinforces this particular perception and therefore this aspect of the 'right stuff'.

The pilots interviewed indicated that they would find it hard to function in their job if they thought too much about the risks associated with flying. For instance one pilot commented that they would have a nervous breakdown if they thought about every mistake they made. So pilots seem to come to accept a certain level of risk and danger, but they also try to avoid putting themselves in too much danger.

> You don't go looking for risk situations. You're looking for, what I call, your escape route - what's not always the safest option, but what's the most professional and sensible option ... You're there a bit like a fireman, I suppose, in an emergency. You hope you're never called on (Pete).

> It isn't that dangerous really - as long as you're not an idiot (Keith).

Part of being a professional pilot is taking responsibility and not taking risks. However pilots also have to trust their aircraft and other groups within aviation, for instance the flight engineers and air traffic control. Seven pilots, from all types of flying, discussed this trust. Firstly pilots have to trust their own knowledge and skills, which is where the confidence comes in. Pilots also have to trust factors beyond their own control. Pilots also have to trust other pilots when they are passengers themselves. Andrea, a civil pilot, commented,

I can fly myself and go through the most horrendous turbulence and I'm not afraid because I know whether I'm in control or not. But I suppose when you're sitting as a passenger down the back, you're thinking, "Is the pilot in control of the flight?" ... Sometimes I think, "Oh god that was a terrible landing" or "He should be rotating by now cos he's definitely going to run into that fence and be in the dirt"...

This pilot liked to be in control of the aeroplane herself and did not entirely trust other pilots with her own safety. Five pilots also had a sceptical and cautious trust of engineers and designers. In a couple of cases this was linked to personal experience of, for instance engine failures, or knowing of accidents.

Personal experiences of accidents increases a pilot's awareness of risk. Pilots with experience of an accident or who know others that have died in aviation accidents, seem to perceive flying as more risky than the pilots who do not have this experience. They discussed the possibility of fatal accidents more than pilots without such experience. This greater awareness of the fatality of flying was more evident amongst RAF pilots than civil pilots. The fact that there are only about 500 RAF pilots means that an RAF pilot is more likely to know personally of another RAF pilot who has an aviation accident, whereas a civil pilot is one of thousands. Thus for RAF pilots accidents can be closer to home and more personal. Also the type of flying the RAF is involved with, particularly fast jet flying (e.g. low level flying at high speeds), can be seen as more risky than airline flying, and therefore there is potentially increased risk of accidents.

Pilots also perceive other types of flying as more or less risky than their own. For instance one multi-engine RAF pilot stated, "You get a lot people here [in the multi-engine squadron] saying people that flying single engine aeroplanes are mad, because if we lose one we're okay we've got another one. If they lose one then it's like, 'oh no!'". Here we can clearly see that single engine flying is viewed as more risky than multi-engine.[8] It is a risk this pilot did not want to take.

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[8] In this case single engine can also be translated in fast jet, because many fast jet aircraft are also single engine.

The level of risk associated with a particular aircraft or type of flying will also influence how pilots fly. One fast jet pilot stated,

> Certainly if I go solo in this [the Hawk], I would be a lot more careful, because it's so much more of an expensive jet and goes so much faster in it. If it bites, it will really bite you and could kill you (Mary).

This pilot was more cautious about flying a more sophisticated jet than the previous aircraft she had flown. Thus her approach to flying this aircraft is more cautious. This demonstrates how different perceptions of risk associated with a particular type of flying or aircraft can influence how pilots actually fly those aircraft.

Pilots do consider risk. To pilots flying is an every day and familiar activity. They are trained to know the risks and dangers and to cope with problems. They generally perceive flying as a moderately risky activity, however experience of accidents and the type of flying they do can influence perceptions of risk. Yet the fun of flying can out weigh any risks.

> ...You know there is a risk to it [flying] which you don't have sat at your desk, but logically speaking it is so much more fun that I rather take that risk...(Harriet).

FLYING - 'BETTER THAN SEX'?

For pilots the pleasure and thrills of flying are experienced equally by men and women, and most pilots find flying enjoyable even after doing it as a job for many years. This section explores how pilots gain pleasure from flying. Firstly the sensual and sexual pleasures of flying are discussed. Secondly factors such as control, freedom and the challenges of flying are examined. Thirdly pilots technical interests in aviation technology are explored. Finally this section investigates how the pleasures of flying can change over time.

Pilot And Machine - Sexual Pleasures?

Pilots derive pleasure from flying, however the symbolic links between the technology and pleasure can be viewed as sensual and even erotic. Jane Caputi states that metaphors are about making associations (1988: 491). She talks about metaphors linking the artificial, organic and gender. Aircraft themselves can be seen as phallic symbols. The shape and speeds of military aircraft - and some commercial aircraft, like Concorde - have represented the 'cutting edge' of aviation technology and can be associated with male sexuality. Caputi (1988) explores through an advertisement how the control stick - or 'joystick' - in aircraft can be related to sexual fantasy and control. The advertisement states:

> Pilot and aircraft are one. He thinks; the plane responds . . . Systems and human engineering ... have coupled the pilot with the world's most advanced avionics through an anatomically designed control stick. All vital controls are strategically positioned on the stick and throttle ... The competitive edge is his (Caputi 1988: 504).

Caputi states that the control stick is "fashioned in the image and likeness of man" in order to "elicit, a biological identification, a species bonding, loyalty and support". (1988: 504) Thus pilot and machine are linked in a sexual way. The "joystick", as its name suggests, can also be seen as a source of pleasure - pleasure not just derived from flying the aircraft but sexual pleasure. This advert is clearly aimed at male sexuality; therefore there is a certain masculinity attributed to the aircraft.

Pilots themselves also use sexual imagery when referring to aircraft. For instance one RAF pilot said in a provocative way that he would like to get a Eurofighter "between his legs". Some civil student pilots commented that one instructor compared flying an aeroplane to making love to a women, for instance giving the right caresses at the appropriate times.

Antoine de Saint-Exupéry in *Night Flight* (1931) (in French *Vol de Nuit*) also writes about the aeroplane in a sensual and erotic way. In one scene a pilot is checking and starting his aircraft and Saint-Exupéry writes,

> He ran a finger along a steel rib and felt the life coursing through it; the metal was not vibrant but alive. The engine's five hundred horse-power had charged the matter with a gentle current, changing its icy deadness into velvet flesh. Once again the pilot in flight experienced neither giddiness nor intoxicating thrill, but only the mysterious travail of living flesh (1931: 132-133).

Here the machine comes alive for the pilot and responds to his needs. From all these examples we can see aircraft referred to in heterosexual terms as a female sexual partner but also as an extension of the pilots own sexuality and body. Flying can be viewed as an act of passion between the pilot and aircraft.

Viewing aircraft as phallic symbols, it can be argued that pilots demonstrate their own masculinity when flying but also reinforce their power. Brian Easlea (1983) argues that man psychologically associate power with the penis. In order to overcome feelings of inadequacy men have used science to demonstrate their 'creativity' and reaffirm their masculinity. Easlea states that this desire stems from an envy of women's abilities to reproduce - i.e. 'womb envy' -, which has led to a need for men to demonstrate their creativity and power. Easlea (1983) cites the development of the atomic bomb and the Manhattan Project as one such vent of male 'creativity'; thus the atomic bomb was a "pregnant phallus". Dropping bombs from an aircraft can be viewed as giving birth to a destructive force, and in a way demonstrating male 'creativity' - and also a destructive ability. Easlea's (1983) arguments do tend to be rather sweeping and generalising. He also does not account for gender diversity and individuality. However aviation can be viewed as a site where attempts have been made to demonstrate male power and hegemonic masculinity. Thus flying an aircraft is a demonstration of masculinity and power by pilots, but also a demonstration of their own virility and sexuality, particularly heterosexuality.

A human-machine connection also seems to exist between the aircraft and the pilot.

> The sensory equipment of the machine becomes an extension of the
> pilot's sensory equipment ...You become part of the machine... (Caputi
> 1988:501).

Here Caputi is quoting comments made by a pilot during wartime. The symbolic links between pilot and machine do not only exist in an erotic sense but also in a practical sense; the pilot and machine work as one to complete a task. Using Donna Haraway's (1991) terms one can talk about the pilot and aircraft as a cyborg, with the boundaries between the body and machine becoming blurred. One civil pilot describing deriving pleasure when flying from "feeling a movement or being at one with a machine" (Mark). For this person this close relationship to the machine is part of the attraction of flying. For some pilots the machine is 'alive' and has a personality. A female helicopter pilot stated that "the Chinook is the best helicopter that ever lived", while two female civil pilots mentioned giving aircraft individual names and getting to know each aircraft's quirks.[9] As one pilot commented, "you look on it [the aeroplane] with a bit of affection".

Florman (1976) also noted that engineers can become emotionally attached to machines.

> In his emotional involvement with the machine, the engineer cannot help
> but feel at times that he has come face to face with a strange but potent
> form of life (Florman 1976: 139).

The engineer, like the pilot, can also come to see machines as alive and receives pleasure from working with these machines. Florman talks about the pride and wonder engineers can have of machines, which can make then seem almost living creatures (1976: 127-140). So having an emotional attachment to machines is not something unique to pilots.

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[9] Giving aircraft names is nothing new, for instance it was widely done during the Second World War; two very famous aircraft being the Memphis Belle and the Enola Gay.

Some pilots have an emotional attachment to an aircraft and for others an aircraft is extension of themselves, whereas for yet another group of pilots "it's just a piece of metal" (Ruth). Thus how pilots view aircraft can vary widely, but from this study it is difficult to say if there is any difference between how male and female pilots view aircraft. Pilots can be seen to derive sexual pleasures from flying as well as reaffirming their own sexuality and masculinity through flying. However the pleasure of flying is not only symbolic but also a very real attraction for pilots.

What Makes Flying Exciting?

The pleasure of flying is what attracts some individuals into aviation (see Chapter 4) and is one of the most important aspects of the job for many pilots. Yet some pilots find it very hard to explain why they enjoy flying. As one RAF navigator said,

> It's hard to quantify it [i.e. the pleasure of flying]. If you speak to virtually any aircrew they can't quantify why it is. I mean if I was to say to you just for an example, what's good about sex? It just is. You can't quantify what it is specifically. You can't lay it down to specifics what it is. It's just enjoyable (Carl).

During the interviews all the pilots were asked what they enjoyed about flying. The same main themes emerged from both the RAF and civil pilots.

For both sets of pilots the freedom, adrenaline buzz and control made flying enjoyable and fun.

> It's like a drug really to be honest ... you go flying and you come back on the ground, and it's like your adrenaline is going and you just want to go again. And it's just – I suppose it's the speed ... I think it's just the buzz (Andrea).

> It's the whole experience. It's like I like driving and when I passed my driving test I loved it. The same with flying really. After I'd done my first trip I'd loved the feeling of being up there. The freedom obviously within certain limits (Kurt).

> I like the adrenaline rush. I'm a bit of a speed freak (Mary).

> I think it's the freedom part of it. It's very exhilarating (Marie).

> It's probably the speed, the whiz and the excitement; the adrenaline and the strange feeling when you've go at negative G and positive G; and that freedom of shooting all over the place (Harriet).

All these quotes refer to the *freedom* and *thrill of flying* and are just a sample of the phrases used. It is noticeable that most of these quotes are from women. Although equal numbers of men and women did mention the freedom and "the buzz" of flying, women tended to mention them before any other factors.

The last three quotes are from RAF pilots, both fast jet and multi-engine. The apparent adrenaline thrills of flying were high on the list when it came to enjoyment for RAF pilots. One civil and ex-RAF pilot commented, when comparing the two types of flying, "I think, certainly in the military, there was more of a love or shall I say exhilaration in military flying and that sort of thing. I enjoyed it" (Chris). Military flying has a perceived image of being full of thrills and fast flying. There is an image that military flying is more fun than civil flying (as discussed in Chapter 4). This is also part of the attraction of the RAF for some pilots, and it seems that RAF flying can be as thrilling and exciting as the images suggest.

The term *freedom* means different things to different pilots. For instance - in the above quotes - for Kurt it is retraining freedom, while for Harriet part of the freedom is about the physical experiences of flying at speed. However most of the references to freedom imply a detachment from the 'normal' world or as one pilot put it "escapism". There is the physical detachment of being in the air, but there is also the freedom of doing something unusual and of being in control of yourself and the aircraft.

Control gives enjoyment and pleasure to pilots, and this was also a factor mentioned more by RAF than civil pilots. When it was mentioned by civil pilots, control was part of the challenge of flying.

I like the control and I like going off by myself and disappearing miles away (Jane).

It's just good fun ... When you're solo, by yourself, you're in control of everything...I just think it's being in command of your own destiny if you like, and being so exciting that even though you're in control of what you do, you know that it could be quite easy for you to get yourself into trouble. You know, I mean it is pretty dangerous (Ruth).

I enjoy being in control of a machine, which is in most cases quite powerful and capable (Keith).

From this selection of quotes we can see several aspects of control. Jane enjoys being in control of where she's going, which clearly has links with the freedom of flying. Ruth enjoys total control of her "own destiny", however she also enjoys the risks of flying. Keith, on the hand, enjoys being in control of the machine. There were basically two aspects of control for pilots: control over the machine and control of their own body. From the interviews there was a slight male / female split between these two aspects of control. Near equal numbers of male and female pilots stated they gained pleasure from control in flying, although more women mentioned control of themselves, while more men mentioned control of the machine.

Research indicates that this pleasure of controlling and mastering technology can be linked to masculinity. Håpnes and Sørensen (1995) examined the computing style and culture of Norwegian hackers. The hackers studied were part of an all male group with it's own masculine culture. Håpnes and Sørensen found that hackers were "motivated by the excitement and fun. The joy of working is in the process itself" (1995: 183). Hackers found the actual process of developing a computer programme fun. This is similar to the pleasure pilots get from the process of flying. The hackers liked to have their own creative freedom (1995: 181-184) - just as pilots enjoy freedom. "They say it feels glorious to be the one who masters the machine, the one who is able to control it and the processes that are being run" (1995: 184). Hackers gain pleasure from mastering the computer and the programme. Some pilots gain pleasure from mastering the aircraft.

Sally Hacker (1989) has examined the pleasure that engineers gain from their work. She suggests that part of the pleasure is from mastering and controlling a task or object (1989: 35-57). Hacker sees this as part of the pleasure of 'tinkering' which boys learn at a young age, thus the desire to 'master' technology can be associated with masculinities. The fact that more male pilots gain pleasure from control of the aircraft can be seen as part of their masculine identities. They are exercising the pleasure of control and mastery that they may have learned as children and which is part of their own gender identity.

This mastery of the aircraft can be said to be part of the masculine culture of professional aviation. Terms such as the "conquest of the air" (Turner 1910) and "mastering flight" have been used by many aviation commentators throughout the history of flying. So the notion of mastering the aircraft is not new to aviation. However the data in this study only suggests slightly more men than women finding pleasure from controlling the technology, so it is not a completely male phenomena amongst these pilots. Yet it can still be part of the gender identities of pilots.

The fact that more women pilots talked about control of themselves could be due to the subordinated position women have conventionally held in society. Historically men have held the positions of power and been 'head' of the family. Things have changed but men still dominate the powerful positions in society. A pilot has a position of authority in the aircraft and the aircraft itself is a symbol of power. Thus these women pilots may be using flying to demonstrate this power and status but also to feel in complete control of their own lives. This is why it gives them such pleasure. It may be a feeling and position that they cannot attain on the ground.

For civil pilots the *challenges of flying* provide more pleasure than control, however the challenges of flying did provide pleasure to both RAF and civil pilots. Challenges for pilots come in different forms: there is the challenge of controlling the aircraft and using their skills.

The take off and landing's the best bit. It's the most exciting bit...because it requires the skill. When you're in the cruise you're basically sitting watching the aeroplane fly – the autopilot goes in. Whereas with the take off you're actually physically doing it. You're flying the aeroplane. And the landing obviously requires the skill (Ben).

Ben enjoys using his *skills* to land and takeoff. However these are also some of the most risky parts of a flight as discussed previously in this chapter. It could be this element of extra risk as well as using their skills, which makes these parts of flying enjoyable for pilots like Ben.

For some pilots there is also the challenge of flying light or smaller aircraft. This was called "real flying" or "getting back to basics" by pilots. Smaller or light aircraft are enjoyable for some pilots because they use more of their 'hands on' flying skills. Smaller aircraft can also be more versatile, for instance an ex-RAF pilot discussed flying in the VIP squadron saying, "Oh it was great. Absolutely great. 'Cos it's a smaller aircraft and you're often just landing on dirt runways in Africa" (Pete). Smaller aircraft can sometimes offer the opportunities to do more than standard in-line flying.[10] These all add to the fun and enjoyment of flying.

Hacker (1989: 35-57) argues that a certain pleasure is derived from tinkering with tools, which boys learn at an early age. The thrill and pleasure expressed by pilots can be related to the pleasure of 'tinkering' which boys learn. Hacker mentions "backyard mechanics" and the pleasures of actually building something with your hands (1989: 44). The pleasure gained by pilots from actually 'hands-on' flying and using their basic skills is an extension of this idea of 'tinkering'. Pilots cannot 'tinker' with the actual avionics and machinery of the aircraft but they can 'tinker' with the way they fly it when they are flying the aircraft themselves; they are in control not the computer. In a way they are involved with "backyard mechanics" and actually "getting their hands dirty" by flying the aircraft with their two own hands.

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[10] The term in-line flying refers to flying on specified routes from A to B and back, which is what most airline and transport flying involves.

Of course with changes in aviation technology, less and less hands on flying is involved, and as several pilots commented, to some extent the basic flying skills are being lost. Yet other pilots saw increased automation as meaning different skills are required of pilots. In the future there will be less opportunities for professional pilots to actually get pleasure from hands on flying and 'tinkering' with the aircraft. However other sources of pleasure may emerge, and there are already other sources of pleasure for RAF pilots.

Some RAF pilots gain pleasure from challenges by using quite different skills to those of civil pilots. For one pilot, weapons training on fast jets was very demanding and challenging, and therefore fun. For another, the mental challenges of operating at speed were enjoyable. For other pilots, low level flying was very challenging and enjoyable. When the challenges of flying were mentioned as enjoyable by RAF pilots it was always in relation to fast jet flying, suggesting that maybe for these pilots fast jet flying presents more challenges and therefore more fun. Yet not all RAF pilots find all types of fast jet flying fun and attractive.

> I don't want to fly air defence. I don't want to fly the cap at 30,000 feet looking for an enemy and if it does come, then the navigator runs the show. That really doesn't appeal. As I say, I want to fly fast and low. Drop bombs. I don't really want to drop bombs, but I want to fly fast and low. And so the GR1 it would be if I didn't go harriers (Mary).[11]

This pilot wants the pleasures of flying "fast and low" and also of remaining in sole control of the aircraft. Other pilots might say flying air defence is both fun and a challenge.

There are a few other aspects of flying which give pleasure to some pilots. A few civil pilots also found the variety of work and lifestyle enjoyable. One pilot also commented "it's terribly privileged". There is a certain status to being a pilot and also of having the freedom to fly in the air. Two RAF pilots mentioned the responsibility of flying and the actual achievement of reaching the position they had

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[11] The GR1 is a type of Tornado fighter aircraft, which is a two-seated aircraft.

within the organisation. Not all pilots gain pleasure from the same aspects of flying but freedom, "the buzz", control and challenges seem to provide the main sources of enjoyment, and these pleasures can overlap.

The Thrill Of Aviation Technology

During the interviews most of the pilots were asked if they had any technical interest in their aircraft and whether that was an aspect which they enjoyed. Two basic opinions emerged; a minority of pilots actually had a technical interest in the aircraft, which they pursued for fun; however the majority of pilots had a 'shallow' technical interest in aviation. These pilots realise that a certain amount of technical knowledge of aircraft systems is necessary, however it is not something that they pursue outside of work. A description given by one civil pilot demonstrates the distinction between these two groups of pilots.

> I am just interested in using it [the aeroplane], and flying and knowing enough that if something goes horribly wrong what might be causing it or whatever. But no I'm not the kind of person that has my nose in the engine everyday thinking, "Oh I wonder how that works". Like I'm not really ... one of the guys on our course is such a complete plane spotter. Like every plane that comes in, he knows exactly what kind of plane it is and where it comes from and where it's going to. And every night he goes down to the threshold down by the road that goes down by the side of the runway. And he goes out with his binoculars and like listens on the radio all the time. I've gone down a few times with him ... I go down to see the Antonov cos that's quite fascinating. But no I'm certainly not a plane spotter by any stretch of the imagination. And I'm not really interested in the technicalities of how everything works (Andrea).

So there is the pilot who could be classified as an aeroplane spotter and enjoys finding out how all the systems work. Then there is the pilot who has some knowledge of aircraft systems because that is required in the training and for safety; but this pilot does not pursue that knowledge for fun and mainly enjoys just using the aircraft for flying. Previously in this chapter, it was mentioned that some pilots view themselves as being very close to their aircraft and enjoy "being at one with the

machine". However this close relationship with the aircraft does not rely on them being interested in the engineering and technical systems of the aircraft.

Table 4: Technical Backgrounds and Interests of Pilots Interviewed [12]

Pilots	RAF	Civil	Total	Male	Female	Total
With technical background [13]	11	8	19	11	8	19
That think a technical background helps with pilot training	10	10	20	10	10	20
That have a technical interest in aircraft	9	4	13	9	4	13

Comparing RAF and civil pilots, it is interesting to find that more RAF pilots have a technical interest in flying than civil pilots and slightly more have some form of technical background (see Table 4). The majority of these technical backgrounds are in various types of engineering from electronic to aeronautical. The reasons for this difference are unclear but it could be due to selection procedures, for instance the RAF selection procedure may select more candidates with technical backgrounds or with a technical interest in aviation. It could also be that people with technical backgrounds are more attracted to the RAF than civil flying.

More male pilots also have a technical interest in aircraft and aviation than female pilots, and there are also slightly more male pilots with a technical background than women. It is hardly surprising that there are less female pilots from a technical background, since generally in schools and colleges girls tend to shy away from science and engineering based subjects once they are given a choice (Kelly 1987; Saraga and Griffiths 1981; WISE 1994). A technical background is not a perquisite

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[12] I have defined technical background as either having studied any science or engineering based subject or previous to becoming work in an area of engineering or science.

[13] There are unknown responses for a number of pilots in each of these categories due to them not being asked the relevant questions: 2 pilots for technical background, 20 for thinking technical background helps and 15 for having a technical interest.

for becoming a pilot. Twenty-eight of the 49 pilots in this study did not have any technical background, and the actual proportions of male and female pilots from a technical background in this study are not so different, 42% and 38% respectively. However the proportions of men and women with a technical interest are very different, 43% and 27% respectively. This suggests that more male pilots are actually getting enjoyment and pleasure from the systems and engineering aspects of flying, than female pilots. Again we can relate this to the 'tinkering' pleasures of engineers gain from their work (Hacker 1989). This technical interest can be seen as part of these male pilots gender identities.

Losing The Excitement

For some pilots the excitement of flying decreases over time. This had happened to nine of the pilots interviewed. This change is summed up by the pilot John, who commented,

> At the end the day whether you become experienced to do that [flying], as with any job, with experience, particularly if you are working hard to become good at it, it becomes very routine, regardless of what that job is. It may to an outsider appear to be very exciting.

The images of aviation may portray flying as full of thrills and excitement to those outside of aviation, but for pilots, flying does become routine and the initial pleasure can wear off. As one pilot put it there is the obsessive phase for pilots in the early years, especially during training, where flying almost takes over the person's life. However as pilots gain more experience and flying becomes more routine some of the excitement is lost. From the pilots interviewed it was very clear than many of the pilots still in training found flying much more fun and exciting than the more experienced pilots, particularly those with over ten years flying experience. The comments of Ben and Susan, two pilots who both have less than 3 years flying experience, demonstrate the enthusiasm of the less experienced pilot.

> I do like coming into work. I'd quite happily fly 5 days a week (Ben).

At the moment I want to get as much flying as I can (Susan).

For the less experienced pilot and those in training the actual physical act of flying gives them pleasure. It is particularly these pilots who when asked what they found satisfying about being a pilot mentioned the actual physical act of flying, just being able to do the job, the achievement of becoming a pilot, and the excitement, freedom and aesthetic appeal of flying, for instance seeing a rainbow from above the clouds. More experienced pilots seem to look for new challenges in order to gain pleasure from flying rather than getting pleasure from the physical act of flying. Some RAF pilots try to maintain the pleasure by changing roles with each tour of duty and hence gaining new challenges, however this is less of an option for civil pilots. Yet it is important to note that nearly all the pilots said flying still gave them pleasure, and some said that if it stopped giving them pleasure they would not do it anymore.

All the pilots were asked during the interviews what they found dissatisfying about being a pilot. The effects of being a pilot on their outside lives, the mundane and routine aspects of flying, the time that can be wasted in waiting on the ground and organisational bureaucracy were factors the majority of pilots stated as giving them dissatisfaction. Civil pilots also stated that living in hotels, delays and breakdowns and the cost of training were part of the down side of being a pilot. RAF pilots included secondary and ground duties, doing badly, and the lack of choice and freedom as dissatisfiers. All these are factors that lead to pilots getting less pleasure from their job.

The priorities and goals also change for some pilots over time. If we look at a few examples we can see how the priorities of pilots can change. For Marie, an RAF pilot - who we met in Chapter 4 - where she was to be based in the future had recently become important because she wanted to live with her boyfriend. Thus her passion for flying had declined, and as she said she was now thinking about "quality of life as opposed to being a young person towing round the country with your head on fire". Rick, another RAF pilot no longer saw himself working in the RAF until he retired. His career goals had changed.

> I think I've changed. I used to see myself staying in till 55 and being an Air Force chap forever and ever until retirement, but now, no, I think I will probably leave at some point. I'll do my full commission, which will be until I'm 38. And then I'll probably leave after that.

Ruth, yet another RAF pilot, changed her goals from wanting to be a fast jet pilot to wanting to be a multi engine pilot, because she did not like the culture associated with fast jet flying.

> My attitude towards flying changed as well because I initially thought, for a long time, that I would like to be a fast jet pilot, and then I got half way through JEFTs [Joint Elementary Flight Training] and I thought I don't want to do that. It's too much competition on that side of it.

There are different reasons why pilots change their goals and priorities ranging from their personal lives to the organisation to a particular flying culture. These factors and the dissatisfiers are all part of why flying can become less exciting and satisfying to pilots over time. This is a trend, which seems to affect the overriding majority of pilots; they loose some of their passion for flying.

GENDER AND THE PLEASURES OF FLYING

Pilots gain pleasure from using their hands on flying skills but these skills are gradually being used less with increased automation. Cynthia Cockburn (1983) has examined the way in which traditional skills of typesetters were linked with masculinity and as the job was computerised male workers felt to a degree emasculated. The hands on flying skills can be associated with the early days of flying and the masculine images of the adventurer and ace pilots.[14] So hands on flying also demonstrates a form of masculinity, which could also be part of the pleasure for some pilots. However this means of demonstrating masculinity is gradually been reduced for pilots so in a way the gender identity of the pilot is also being affected. There is almost a sense of denial amongst pilots, because when asked about the changing role of the pilot and the

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[14] For further discussion of these images refer to Chapter 4.

influences of technology, the majority said that they still saw those basic skills as being necessary in the future and there still being a need for a pilot to fly the aircraft. Pilots do not want to let go of the idea of those basic skills and the images associated with them, because that would effect the gender identity of the professional pilot. Therefore they may have to adjust their own gender identities with changes in aviation technology.

This increased automation in professional aviation and apparent de-skilling, or re-skilling - depending on how you look at it - also raises the question of whether this means it will be more acceptable for more women to enter the occupation, since the old masculine associated flying skills are gradually declining. This has happened in other areas of work, where new technologies have brought in new skills or for some de-skilled the job, for instance typesetters (Cockburn 1983; see also Cockburn 1985 and Hacker 1990).

CONCLUSION

In this chapter we have seen that expert assessments of the risk of flying can vary but generally it is viewed as less risky than many other forms of transport. Pilots are aware of the risks and dangers of flying but perceive those risks as acceptable. Pilot training and aviation organisations influence the risk perceptions and selections of pilots. Accepting these perceptions is part of the 'right stuff' and the role of the pilot. However the risk of flying is also part of its attractiveness and gives pilots pleasure. So pilots may avoid some risks but they also seek others for fun.

There are sexual and erotic pleasures associated with flying, which reinforce the sexuality and virility of pilots, demonstrating their masculinity. Some pilots also gain pleasure from a symbiotic relationship with their aircraft and have an emotional attachment to the machine; this is the 'soft' side of flying. Pilots also get pleasure from the freedom and thrills of flying, control of body and machine, and the challenges to their skills which flying can present. There are more male pilots who gain pleasure from the technical aspects of aircraft. Some of these pleasures of pilots

are similar to the 'tinkering' engineers enjoy (Hacker 1989, 1990), and are ways in which male pilots demonstrate their masculinity and gender identities.

This study has not been able to comprehensively demonstrate whether men and women pilots have differing relations with aircraft, but it is clear that in some areas, like control, they gain different pleasures. Civil and RAF pilots also gain different pleasures from flying, particularly when it comes to fast jet flying. The risks and pleasures of flying form part of the role of the pilot, but are approached by individual pilots in differing ways.

Chapter 6

Shaping the 'Right Stuff'

INTRODUCTION

This chapter aims to further understand pilot roles and how individuals adapt to fit those roles. At one time sociology saw social roles as fixed rules of behaviour and attitudes, which individuals had to fulfil (Dahrendorf 1968); gender and professional roles being two examples. Individuals were socialised into these roles in ways which left them little free choice. Thus the majority of individuals were channelled into these social roles, with the occasional 'deviant'. The notion of a role has been rejected by many sociologists, particularly in relation to gender in recent years (e.g. Connell 1985, 1987; Lopata and Thorne 1987; West and Fenstermaker 1995; West and Zimmerman 1991). However I still find the notion of a role as a valuable analytical tool because from this research it is clear that situational roles do exist.

In my research I am not adopting the narrow view of socialisation and social roles stated above. The notion of the role has proved useful for analysing the changes pilots go through during their training and working lives. As discussed in Chapter 4, the images of aviation are constructed by individual pilots, flying organisations and wider society. These all combine to construct notions of the 'right stuff' for the individual pilot to aspire to. In Chapter 5 we saw how aviation organisations influence pilot perceptions of risk, which are part of the 'right stuff'. This chapter demonstrates how pilot roles are largely based around particular notions of professionalism and various aspects of the 'right stuff'. Training processes act to socialise individuals into these roles, but as I shall illustrate - in this and the following chapter - this role learning is situational, subject to change and adopted to

different degrees by different people. Definitions of a professional pilot also vary, but certain institutional definitions are widely adopted.

The first half of this chapter focuses on some of the formal rules that pilots have to adhere to in order to fit into pilot roles. These rules are learnt through the pilot training process. Hence this chapter analyses the formal methods used to shape the pilot, starting with the training processes and syllabuses of the RAF and civil flying colleges. It then addresses the question of what constitutes a professional pilot, as seen by professional pilots and aviation organisations, and examines the role of the instructor in the socialisation process. The second half of the chapter explores some informal rules which pilots create through everyday working practices. In these sections the social groups pilots identify themselves with are explored, and then the rules that these social groups have developed and orient themselves to are investigated. The interaction of these formal and informal rules contributes to the socialisation of individuals into professional pilot roles. Yet the extent to which roles are adopted vary considerably, as we shall see in this and the next chapter. In this chapter I focus particularly on the experiences of student pilots to reveal these formal and informal rules. First however this chapter explores older literature on socialisation, which has particular relevance for this study.

SOCIALISATION AND THE INDIVIDUAL

Socialisation of individuals and groups is a fluid process, which individuals and/or groups can affect and during which individual agency can be exercised. The first part of this section discusses the concept of the situational role and how variable but stable these roles can be. The second part discusses how identities can be influenced by social rules.

The Situational Role

Within the social sciences the idea of the professional role has long been discussed (e.g. Becker and Carper 1956; Becker et al 1961; Becker 1964; Barnes 1971), based

on the notion of the social role (Dahrendorf 1968). We saw in Chapter 2 how the notion of gender roles was used in early discussions on gender and identity. Similarly early notions of professional roles assumed there were fixed roles. Particular values and behaviours were assumed to be internalised and adopted by individuals causing the identity of a person to change. Social sanctions were seen as forcing individuals to adopt these new roles (Dahrendorf 1968: 8-25), such that any previous identity was considered permanently altered (Becker et al 1961: 419-425).

> Socialisation invariably means depersonalization, the yielding up of man's absolute individuality and liberty to the constraint and generality of social roles (Dahrendorf 1968: 39).

Ralf Dahrendorf (1968) uses this definition of socialisation in his discussion of role theory. However Dahrendorf does argue against the limitations of the fixed notions of social roles. He states that "roles always leave their incumbents a range of individual choice" (1968: 84). The individual always has some agency.

These early ideas of a fixed professional role have subsequently been challenged. Howard Becker and James Carper (1956) talked of "occupational personalities", but recognised that these could be flexible and have no defined outcome. Howard Becker et al (1961) further developed these ideas in the *Boys in White*. This book examines the training of male medical students in the United States during the 1950s. The notion of "situational" role learning developed out of these works (see also Becker 1964). This argues that individuals take on certain aspects of a professional identity appropriate to the current situation, while also adapting it to their own individual self identity (see also Barnes 1971).

Even though the *Boys in White* (Becker et al 1961) is nearly forty years old it still has relevance when examining the socialisation of individuals into established social groups, whether that be at work or elsewhere. Becker et al refer to the professional training of medical students as a "rite of passage", commenting that "a rite of passage is that series of instructions, ceremonies, and ordeals by which those already in a special status initiate neophytes into their charmed circle, by which men turn boys

into fellow men, fit to be their own companions and successors" (1961: 4). This can of course equally apply to any professional training programme, as well as to other social situations and to women.[1] Training to become a nurse, accountant or even a pilot can be seen as a "rite of passage" to a professional status. The training which professional pilots undergo is a "rite of passage", leading on the one hand to a professional status and on the other to acceptance within the 'brotherhood' of aviation.

Becker et al identified "culture traits" that change when they are passed from one social group to another (1961: 270). The "culture traits" are the ideas and behaviours which one group will try to pass onto another for example through training. In their research on the medical profession, Becker et al found that clinical experience and medical responsibility were deemed important for the professional doctor. Yet when these concepts were passed onto medical students their meanings altered (Becker et al 1961: 239-373). They found that for the practising physician responsibility was something that was exercised, while experience was something that was gained and used through practising medicine (Becker et al 1961: 270). The medical faculty and hospitals stressed these ideas when teaching medical students. Students assimilated this 'clinical experience perspective', but for them all their experiences, whether gained through working in hospital, watching demonstrations or attending lectures, were judged on their usefulness to their clinical experience and potential future careers, as well as on the level of responsibility achieved. Thus the students' focus was very narrow, wanting mainly practical knowledge. How students approached an experience and organised their priorities depended on what it would add to their clinical experience and future career prospects (Becker et al 1961: 242-253). Hence the transmission and assimilation of behaviours and ideas between groups is not a smooth process, and changes can occur to those ideas and behaviours during their transmission.

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[1] Becker et al (1961) refer only to men because their study only dealt with men. At that time medicine in the United States was mainly male dominated. However the "rite of passage" notion can equally apply to women, although historically this idea has male connotations.

The behaviour of medical students was also affected by their desire to gain responsibility, namely aiming to do tasks which increased their levels of responsibility (Becker et al 1961: 258). Medical responsibility was very limited for the medical students and was dictated by other physicians. Thus the students used any responsibly they gained to boost their self-esteem (Becker et al 1961: 260-265). As we shall see in this chapter, this transfer of professional ideas and behaviours is evident in aviation, although student pilots adopt those ideas and behaviour to varying degrees.

In a similar vein, Barnes (1971) examined whether science graduates adopted and maintained identification with the 'scientific community'. He examined notions of autonomy of work and communality - namely that research results should be published for others to scrutinise. He found that graduates' attitudes could change dramatically between being a student and finding employment. The ideals of autonomy and communality were often sacrificed to the job. Thus he concludes that "role learning" consists of making adjustments to the social situation and the stability of roles is only due to the stability of a situation (Barnes 1971: 164).

These notions of situational role learning are still useful, since the extent to which the ideas and behaviours associated with a role are adopted will vary depending on the context of the role learning, and the desires and interpretations of the individuals and/or social groups taking up that role. However it maybe more useful to talk about performing identities rather than the more fixed notion of a role. In Chapter 2 I discussed how gender can be viewed as a performance depending on the situational context. Similarly professional identities are performed in the appropriate context, and are fluid and liable to change. As I stated previously there is some stability to these identities, depending on social structures, symbols and individuals themselves. All these factors interact to change or maintain these identities. Hence when I talk about a professional role I am referring to a role which is performed according to context, and so is potentially very fluid. A situational role is a structural and cultural framework within which identities are performed.

Shaping Identities

> An organisation can ... be viewed as a place for generating assumptions about identity. In crossing the threshold of the establishment, the individual takes on the obligation to be alive to the situation, to be properly oriented and aligned to it ... Through this orientation and engagement of attention and effort, he [the individual] visibly establishes his attitude to the establishment and to its implied conceptions of himself. To engage in a particular activity in the prescribed spirit is to accept being a particular kind of person who dwells in a particular kind of world (Goffman 1961: 169-170).

Here Goffman (1961, 1971) views individuals as actors who portray particular identities in line with situational expectations. Goffman also argues that although individuals adjust to expected behaviours, they also adopt "unauthorised means" or "unofficial" methods in order to fulfil a role and gain the full benefits of participating in that role (1961: 162-186). Hence there are both official and "unofficial" aspects to performing identities.

There are also formal and informal aspects to the shaping of professional identities. Becker and Caper (1956) discussed the role of formal and informal contributions to socialisation in their examination of the professional development of physiologists, engineers and philosophers. In all these areas the degree of identification with professional roles varied, according to the situation and the methods of transmission. For instance philosophers had less formal direct teaching of ideas than engineers, thus informal methods of transferring professional ideas were more important for philosophers (Becker and Caper 1956: 291-295).

Becker et al developed the notion of student co-operation among groups of medical students, where they set their own informal rules concerning behaviour (1961: 297-312). For instance, the medical students agreed levels of work where no formal limits were set, they agreed to share workloads, and they helped each other study by sharing both knowledge and patients. People who broke these informal rules were viewed very negatively and informally 'punished', for instance through tricks, jokes or the group giving them more work. Also some individuals were viewed as

deviants, for example those who did not participate socially (Becker et al 1961: 308-9). These informal rules sometimes clashed with the formal rules, for instance when students covered up for another's mistakes (Becker et al 1961: 311). Such rules of behaviour are also evident amongst student pilots as part of the socialisation process and fitting in with expected norms. In this chapter some of these pilot rules are outlined, whilst the problems associated with fitting in are discussed in Chapter 7.

Becker et al (1961) also discuss how medical students became "institutionalised". Their focus became narrow and external factors came to have less relevance to them during training. On completion of the training their perspective widened once more (Becker et al 1961: 419-433). They adapted some of their own perceptions to agree more with those of the profession, however their initial idealism and enthusiasm still remained (Becker et al 1961: 420-430). Again there are parallels with aviation. Student pilots seem to go through what one pilot interviewee called the 'obsessive phase', where their life is dominated by flying. As discussed Chapter 5 this can change dramatically for experienced pilots. Yet in the long run a majority of pilots continue to enjoy flying.

Thus we can see that social structures and pressures can alter an individual's performed identity in line with expected behaviours. However the extent of the change will vary and so will its permanence. Individuals themselves can also influence expected behaviours and ideas through the development of informal rules.[2] In subsequent sections we shall see how these informal rules develop during pilot training, but first we will look at the formal aspects of pilot training.

PILOT TRAINING

This section outlines that various routes into professional flying. It discusses the specific training conducted by the RAF and then looks at the variety of routes into

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[2] Chapter 7 further explores the concept of individuals influencing informal rules and also the 'right stuff'.

commercial airline flying. However first it briefly outlines the access pilots have to training programmes.

Access to Training

In some ways professional training can be equated to craft apprenticeships. At a young age a boy or girl was indentured to the services of a master craftsman for a specified number of years. After completing this training they would be qualified to work in that trade elsewhere or become a master themselves.

A student pilot today has to go through a specified period or course of training in order to attain their professional licence. In the RAF a pilot is commissioned for either 12 or 16 years during which time they receive their training. They then have to give back several years of active service as a kind of repayment for the training. Similarly, if a civil pilot is sponsored by an airline, they receive their training, and if they pass satisfactorily, they usually have to work for that airline for a specified period of time or pay some money towards their training. One civil pilot interviewed was sponsored by a large airline through their training. They had to stay with that airline for at least five years after completing their training or repay some of the training costs.

Organisations will only pay for a pilot's training if they feel they can recuperate the costs of training through 'useful' service from that person. This raises particular issues for these pilots who enter training at an older age and who will have a shorter working life. It also raises issues for those female pilots who might want time off for pregnancy or childcare.

RAF Pilot Training

There are many different routes to becoming a pilot. In the RAF individuals can either join directly with little or no flying experience and go through elementary flight training (JEFT) which takes 24 weeks; or they can join a university air

squadron (UAS) which counts as elementary flight training. The majority of RAF pilots interviewed went through the second route, and most had some flying experience before joining the RAF. Potential pilots also go through initial officer training (IOT) which also takes 24 weeks. IOT aims to develops leadership skills and military discipline. After elementary flight training pilots are streamed into the three main types of flying; fast jet, multi-engine or rotary wing.

Figure 5: RAF Training Streams

Fast Jets	Multi Engine	Rotary Wing

Basic Flight Training (BFT) 37 weeks	Multi-Engine Lead In (MELIN) 10 weeks	Defence Helicopter Flying School (DHFS) Single Engine 17 weeks

| ↓ | ↓ | ↓ |

Advanced Technical Training (ATT) 33 weeks	Multi-Engine Pilot Training (MEPT) 29 weeks	DHFS Twin Engine 27 weeks

| ↓ | ↓ | ↓ |

Wings Gained

| ↓ |

Fast Jet OCU	Multi-Engine OCU	Rotary Wing OCU
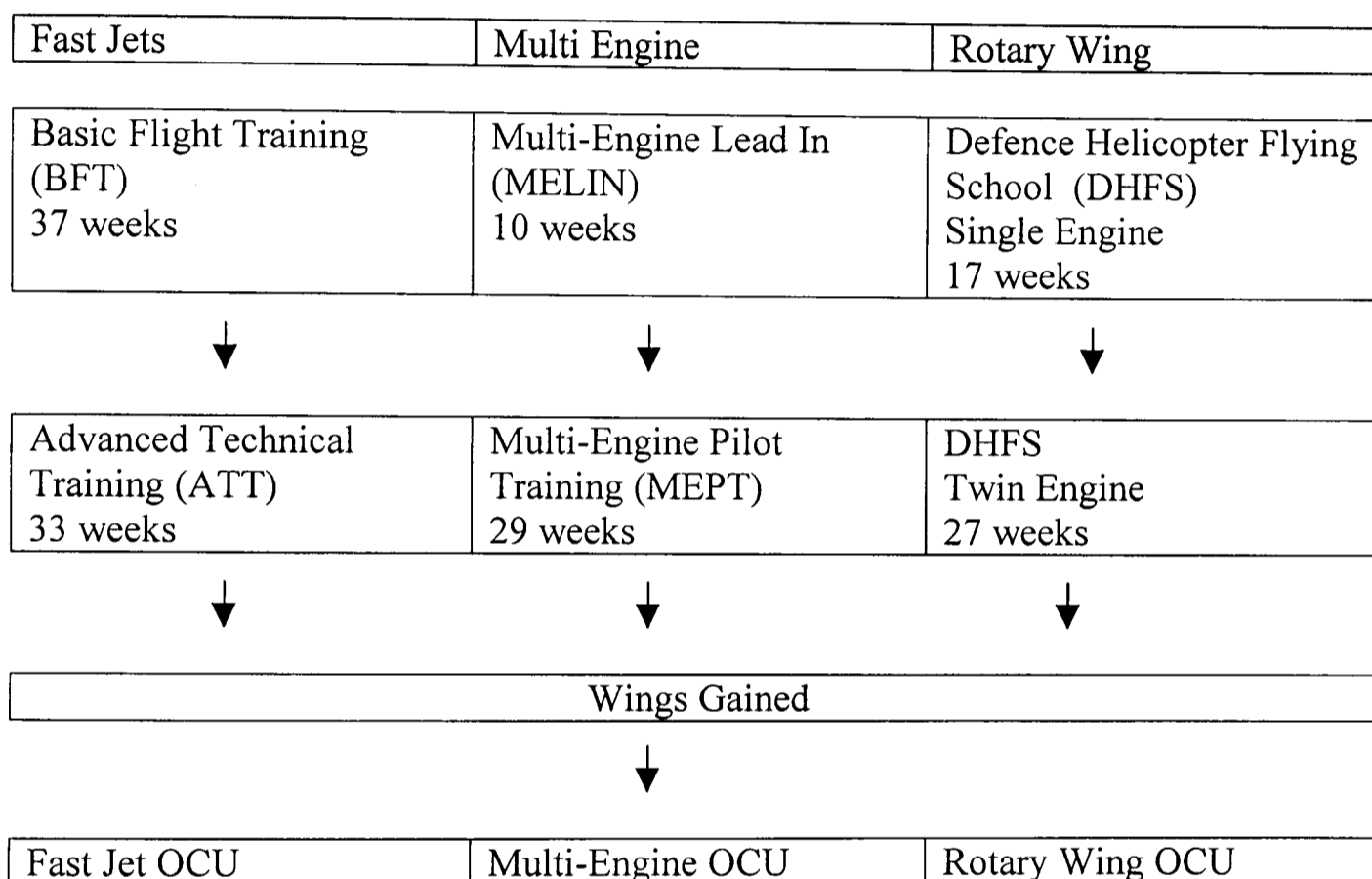
Source: RAF (1997) *Officer: Pilot and Navigator*, Central Office of Information, UK

Figure 5 shows the training in the various streams. Once a pilot has gained their wings they are finally a qualified and licensed pilot in their field. The various OCUs are Operational Conversion Units, where pilots learn specific skills and specifications for the type of aircraft they are going to fly, whether that is a Hercules, Tornado, Chinook or any of the other aircraft used by the RAF. All pilots go to an OCU when they change aircraft types. There is also additional training for instructors and other specialist roles.

For the over-riding majority of pilots interviewed the ultimate aim is to fly fast jets. The 'best' pilots, in terms of grading and scores, become fast jet pilots, with those at the very top being able to enter single seat aircraft. Pilots who do not make the grade, at any stage of training, either go into one of the other types of aircraft, become navigators, do an alternative job in the RAF or leave the Air Force altogether. However there are a few pilots whose initial aim is to fly multi-engine or rotary aircraft, and there are some navigators whose initial aim was not to become a pilot.

From Figure 5 it is clear how lengthy the training process for RAF pilots can be, especially when there are often holding periods between the training courses. During holding periods pilots will do other jobs in the RAF, often administrative or organisational jobs. For instance, two pilots told me they had been involved with organising air shows while they were holding. These holding periods can last from a few weeks to a year or more. For the nine RAF student pilots interviewed whose length of time holding is known the average length of time in holding was 18 months. One had spent as much as three and half years holding while another had only spent 4 months. The length of time spent holding depends on the available of spaces on training courses and on the route taken through the training process. However this time was not wasted. Student pilots learn skills that are useful in to their pilot roles. For instance, one pilot mentioned being allowed to make more work related decisions in holding jobs than on courses where pilots have very little input into the training process. Other pilots described holding jobs as a welcome break from the pressure of training. However the dominant opinion held by those pilots who discussed holding jobs during the interviews was that the length of time spent in holding posts was too long. Of course the longer an RAF pilot spends holding the less time they will spend as an operational front line pilot and therefore the less 'productive' they will have been to the Air Force.

Holding posts are part of the process of socialising pilots into the RAF work cultures. The posts expose the students to different work environments within the RAF and to different work cultures outside of RAF flying. Holding posts are an integral part of

the training RAF student pilots receive. The training process for RAF pilots is very rigorous, but also time consuming and lengthy.

Airline Pilot Training

In the civil world there is a wider variety of training available. A minority of pilots are sponsored by an airline and sent to a training college for up to two years. Other pilots borrow, save or work themselves through training, some taking many years to gain all the necessary qualifications, through flying clubs and training colleges. Flying clubs and smaller schools only tend to offer a limited range of the necessary qualifications for an Airline Transport Pilots' Licence (ATPL). Most student airline pilots will have to attend one of the larger flight training colleges, in this country or abroad, at some stage. It is possible to do the training as one continuous course at these colleges or in modules, which takes significantly longer. The various stages in the modular route involve first gaining a private pilots' licence (PPL), then after learning to fly a twin engined aircraft gaining a Basic Commercial Pilots' Licence (BCPL), and finally getting the ATPL.

The majority of airline pilots interviewed for this study learned to fly either with a military organisation or an airline or paid for themselves to study full-time; only a handful followed the modular route. There were also a few civil pilots interviewed who became members of a UAS to gain flying experience, but either decided not to join the military or failed the tests. Hence with all these different routes into civil flying it is more difficult to talk about a particular training culture other than the shared stress on professionalism. The CAA does set training standards and exams that all civil pilots have to pass, so there is some common ground in the training of airline pilots. Airline pilots also receive training on the job when they are learning about a particular aircraft type. They then fly with a training captain for a specified period of time. However there is much more variety in the training received by civil pilots than by RAF pilots.

THE INSTRUCTOR AND PROFESSIONALISM

The flying instructor is a vital means through which organisations transmit the ideas and behaviours of the various pilot roles. One key idea that is passed from instructor to student is professionalism and behaving in accordance with a professional pilot role. RAF and civil pilots are expected to act in a professional and responsible manner. These are two of the main formal rules that form part of the professional pilot role. Moreover the instructor links both the formal and informal rules which make up pilot roles. The instructor-student relationship is a difficult one, as it can cross the line between the formal and informal sides of training. This section addresses the notion of professionalism and how instructors try to transmit this idea to student pilots. It then proceeds to examine some of the effects training can have on pilots. Finally it explores the instructor-student relationship.

Training to fit the Professional Pilot Role

The research data has elaborated how pilot training is geared to produce a professional pilot; that is a pilot who can do the job in a professional manner and fulfil a professional image. Chapter 5 demonstrated that the training aims to minimise pilot perceptions and chances of taking risks. This is also part of being a professional pilot. A professional pilot does not actively go looking for risks. This professional pilot role is about taking responsibility, following the regulations and flying safely. Images are also part of the professional pilot role, and as discussed in Chapter 4 the professional pilot image is one which pilots identify with. Pilots perform a professional identity, for instance, by wearing the uniform correctly. As one student pilot commented,

> They [the instructors] try to impress on you all the time that you have to be professional ... And how we have to be dressed ... You have to be dressed immaculately all the time. Just as the airlines do. You have to be professional (Andrea).

The uniform is very important for the professional pilot identity and image, but being a professional pilot is also about following rules and fitting with the organisation.

The RAF UAS training syllabus states that alongside the academic and skills based goals of training, there are four more "subjective" goals. The instructor should encourage the student to:

- identify with the philosophy of professionalism
- develop the will to succeed
- accept that flight safety is paramount during peacetime operations
- identify with service interests and traditions

Here we can see the importance of professionalism and safety in RAF training but also the importance of the pilot identifying with the organisation. The rest of the syllabus is mainly concerned with practical flying skills and knowledge. Hence it seems instructors control how these "subjective" goals are achieved since they are not part of the structured syllabus.

The relationship between the flying instructor and student pilot is an important factor in both the formal and informal shaping of pilots. A flying instructor sets practical tasks to teach students, but it is the less concrete aspects of their teaching which influence student identities the most.

Nine pilots were interviewed, both civil and military, who were either currently instructors or had been at some point in their flying career. They were asked what they tried to instil into student pilots. These instructors mentioned five types of attitudes and behaviours: confidence, discipline, enthusiasm, awareness of danger and making flying fun. Both instructors and students mentioned one attitude: confidence. One civil instructor's reply to the question was,

Self-confidence and the ability to think for themselves. They've got to. I can't do it for them. I can show them how I do it. But at the end of the day they've got to get up there and have the confidence (Chris).

So to succeed to as a pilot, a student has to at least appear confident, even if they do not feel totally confident themselves. Initially they have to appear confident to their instructors and later on to their passengers or commanding officers. The airline pilot has to appear confident, calm and in control when talking to their passengers. A few pilots commented that the training had given them more confidence.

I've had a lot of experiences which have provided me with more confidence and more skills than you would probably acquire doing most jobs. Particularly on the initial officer training ... (Harriet)

My confidence has increased. There is times when my confidence has been very low but it's been brought back up again (Neil).

Different aspects of training give different pilots more confidence; for Harriet it was IOT but for Neil it was BFT. This confidence can be a problem for many student pilots. In the study I found this was a particular problem for women pilots in both the RAF and airlines. Andrea, a student airline pilot - who we met in Chapter 4 - stated that,

The problem is at [the flight training school] they're saying I'm not confident but also they're saying we don't know how to make you confident. Like the only one who can make you confident is yourself. In some ways I'm quite self-conscious, so like when I sit in the plane with the instructor, obviously he's watching everything that you do. And I'm painfully aware of the fact that he's watching everything I do, which makes me more self conscious and less confident. And I don't really know how to get round that (Andrea).

For this student pilot appearing confident was a major problem which resulted in her having to undertake extra training and redo some of the basic training. So her lack of confidence actually held her back. Here we can see in order to proceed with the training a pilot has to at least appear confident and perform to an expected norm of behaviour for the professional pilot role. This performance of a confident self causes problems for some pilots, but it seems mainly women. This small sample suggests

this is more of a problem for female pilots than for male pilots. Lack of confidence was not a factor raised by male pilots at all. This links with wider issues in the teaching of science and technology.

Research suggests that teachers can act, consciously or unconsciously, to undermine female confidence in science subjects (Kelly 1987). Margaret Crossman (1987) has found that in science classes, where the teacher is more likely to be male, more lessons were directed at boys and relatively little communication occurred between girls and the teacher. Even female teachers spent more time communicating with boys. It is also interesting to note that boys received three times as much criticism than girls from teachers. Boys also answered and asked more questions (Crossman 1987). If boys are receiving more attention, then this may make girls feel of lesser importance in the classroom. Girls may feel their contribution is less worthy and thus their confidence suffers.

Most flying instructors are male, and it could be that similar factors are at work in aviation. The male pilots may have more confidence because they received more attention in science subjects at school or even in the flying colleges and are more confident in their own technical abilities. The women pilot being more visible anyway, may feel less confident to show their technical abilities in case they are deficient. Andrea also commented,

> I found to start with I felt quite embarrassed about asking questions in the class, especially if it's technical subjects. I found that really quite hard work. And to a certain extent some of the instructors were a bit, "well you're a girlie and don't really know much about being a pilot" (Andrea).

This is evidence of at least one female pilot lacking the confidence to ask technical questions. It also indicates that some instructors do hold stereotypical ideas about what a woman should know and do. So there certainly seems to be a link between instructors and pilots lacking confidence. A large scale and more systematic study would be needed to establish how widespread this problem is.

Flying instructors do more that just transferring ideas connected with the professional pilot role. Instructors are aiding pilots through their "rite of passage" into the pilot roles and aviation cultures, just as experienced medical practitioners aid medical students through their training (Becker et al 1961). Instructors reinforce aspects of the 'right stuff' which are based around masculinities. Confidence is part of the dominant notion of masculinity surrounding aviation. The research data indicated that professional pilots and aviation organisations saw confidence as part of the 'right stuff' (see Chapter 4). By instilling confidence into student pilots, instructors are encouraging students to perform to pilot and gender identities based on a version of hegemonic masculinity. Women pilots are being encouraged to perform a gender identity at work, which may conflict with other gender identities in their lives.

Flying instructors also try to instil discipline into their students as part of pilot professionalism. Another civil instructor stated,

> What you try and instil is a discipline, organising their life about flying. Flying isn't just as soon as they get into the aircraft saying, "Right I'm into flying mode". It starts a long time before that, often 10-12 hours before, with preparation. They got paperwork … (Pete).

So it is discipline not just in the cockpit, but also concerning how pilots organise their lives in and outside of work around flying. Student pilots have to adjust to the fact the their whole lives are likely to revolve around their job, and this is something they are taught early on in the training. In practice student pilots find themselves totally immersed into aviation from the start, especially in the RAF and at civil training colleges. In these locations students are in the training environment day and night, as most of them live on site (e.g. in the mess or college residences). They socialise mainly with other student pilots and instructors, who they also see all day. This is the 'obsessive' phase in a pilot's career, where flying is at the centre of their lives. This immersion prepares them for later in their career when they have to co-ordinate their lives around flying. Again this is another aspect of the professional pilot role, namely the unsocial working hours and almost total commitment to the job.

Another civil instructor mentioned that having an awareness of danger and of your surroundings was also important to instil in student pilots.

> You're trying to implicate into them that machine ability to be able, within the brain, to make these kind of computations and develop this kind of sixth sense, which will give them a warning of something which the machine is saying to them is right, but which innately they feel, or at least sense, that there's something wrong. So they can actually pre-empt a catastrophic situation developing. It's what we I suppose in the trade would call the airmanship or the pilotmanship (Ian).

Airmanship is almost like one of the mythical quantities of the indefinable 'right stuff' discussed by Tom Wolfe (1980). It is about flying safely and with all your senses alert. This is a quality that many pilots perceive as part of the 'right stuff' (see chapter 4). We can see how organisations try to instil in student pilots, through instructors, this notion of the 'right stuff' or at least one aspect of it.

Enthusiasm and having fun were also mentioned by instructors, both RAF and civil, as being important to communicate to students. It is this notion that flying is more than just hard work; it is fun, it is a 'thrill'. Again enjoying flying is part of the 'right stuff'; it is an idea and attitude passed on from pilot to pilot and from organisation to pilot - and possibly also vice versa.

During the interviews with RAF pilots two other attitudes and behaviours, which are encouraged during training, emerged: aggression and leadership. Three pilots mentioned being trained in leadership. As one pilot explained,

> It [the training] does change from being slightly spoon fed in the very early stages and it's all very much probably an instructor lead sortie, rather than a student lead sortie. And now it's very much the instructor looking for you to lead the sortie (Neil).

Leadership is another aspect of the 'right stuff', which is particularly important for RAF pilots who are also officers. Flying instructors gradually encourage students to

think for themselves and take control. This is also linked with increased confidence, since the more confident a student feels in their own abilities, the better they are likely to be at leading. The other two pilots mentioned leadership skills being developed during IOT. So these qualities are encouraged both in the air and on the ground.

Two RAF pilots mentioned that they are a bit more aggressive since starting training. To a degree this is to be expected in a military organisation, where aggression may be required in a combat situation. Too much aggression could also be counterproductive. Interestingly these two pilots were male and female so this aggression does not seem to be related to sex, but maybe part of the masculine pilot identity.

Finally one UAS student pilot compared private flying instructors to those in the RAF, and commented that she found "the [PPL] instructors have passed on their habits" (Amy). This sums up exactly the role instructors play in the formation of the 'right stuff'. Clearly instructors have an important role to play in the training process for professional pilots. They are key in the continuance of the 'right stuff'. Yet it can be a complex relationship for both students and instructors.

The Student - Instructor Relationship

Another important factor in the shaping of pilots is the relationship between instructors and students. Many pilots commented that there were both good and bad instructors. The standards which instructors set in the professional world of flying are often higher than in private flying, due to tighter safety considerations. Three of the pilots interviewed were also private instructors on light aircraft. They commented that it was a different type of teaching. For the PPL the emphasis is on basic safety, because it is mostly about having fun. Whereas professional flying instructors concentrate on teaching students to look after the safely of others (e.g. passengers), to be accurate and to adopt the appropriate behaviour in and outside of work.

Most of the pilots felt the instructor-student relationship was a professional relationship that could carry over into social lives outside of work, but a clear distinction was usually maintained in the RAF. The distinction between colleague and teacher seems to be more blurred in civil and leisure settings. Numerous RAF pilots mentioned a line between the instructor and student which could not be crossed but which was sometimes difficult to judge.

> There is a certain line where you leave instructors to their social side of it ... There is a line. However it's very friendly ... Still at the end of the day you can still go in the bar and have a few beers [with them] (Neil).

> There's always a line you don't cross ... You always have to judge that line for yourself ... I mean what you've got to understand is when you're out in the night you can take the mick out of them as much as you would your mates, as long as they are not a temperamental sort of instructor ... Whereas if you're in the aircraft you have to forget that you're mates (Rick).

> You've just got to be careful ... You can have really good conversations with them. They can relax themselves when they're not in the 'I must behave well' mode. But again they are still the people that are testing you, so still the line is there, and you can sometimes tip toe either side of it. That's fine when you're all out for a drink, but you've still got to worry about what you can't say and what you can say (Ruth).

Student pilots and instructors do mix socially but the students still have to watch their behaviour. In a way they are still being assessed. As discussed further in subsequent sections and in Chapter 7, fitting in socially is important for being accepted into the aviation work cultures. In the RAF student pilots and instructors can often be the same rank (i.e. Flight Lieutenant), so there is a not an issue of formal power divisions. This makes the line difficult to judge for students, combined with the pressure and power that instructors can exert over students in the RAF. In the end the instructor decides the futures of the student pilots. For RAF student pilots every flight is graded, and scores have to be relatively high and constant in order to succeed. Thus RAF instructors can to some extent dictate the future of a pilot depending on the scores they give. No such difficulties in managing a line were mentioned by civil student pilots and it seems they socialise freely with their

instructors. However the frequency of this socialising between student and instructors is greater in the RAF.

Another aspect of the student-instructor relationship concerns respect, which was mentioned by both RAF and civil pilots. Student pilots mentioned respecting both the rank of a instructor, but mostly the knowledge and experiences an instructor has gained. This respect affects the behaviour of students towards instructors. One student mentioned accepting criticism better from an instructor, than say from an other junior pilot, because of their years of experience. Another student discussed having respect for instructors because of their professionalism. If a flying instructor is seen to be adhering to the professional pilot role and/or embodying some aspect of the 'right stuff', then they will get more respect from their students. This then sets an example for the student pilots to follow. It is in the interests of instructors and students to portray professional pilot identities. Their respective performances reinforce each other's portrayals of these identities.

The only aspect where women pilots mentioned any gender difference in the student-instructor relationship was when it came to behaviour in and outside of work. A female RAF student pilot stated, when asked how she found being a woman with the instructors,

> You get away with a lot more than you would if you were a man. Just in the bar actually. Just banter. You'll go up to a bloke and say, "That is a disgusting jumper". And he'll go, "Ha. Ha. Ha", and he'll laugh heartily. I think if I was a bloke going up to another bloke saying, "That's a disgusting jumper", he'd probably say, "Piss right off". But because you're female you get away with things, and I know that and I abuse it. At work they don't treat me any differently (Marie).

Outside of work this female student pilot can engage in a different sort of behaviour with instructors than a male student pilot. She takes advantage of her position as a 'token' (Kanter 1977) but whether this is to her advantage I am unsure. Another female RAF student pilot said, "They won't treat you any differently, which is the way it should be" (Mary), but then complained she had suffered excessive criticism by some

instructors. This could be because she was a woman or because of her flying, but since no other male or female pilots complain of suffering undue criticism, it seems more likely to be an individual case.

Flying instructors are important for transmitting notions of the 'right stuff' and behaviours appropriate to the professional pilot role. The student / instructor relationship reinforces both the formal and informal rules of behaviour but can be difficult for students to manage. However relationships amongst student pilots are also crucial in shaping professional pilot identities.

INFORMAL TRAINING RULES AND THE CULTURES OF AVIATION

There are many different work cultures within aviation. There are some clear differences between military and civil flying. However some types of military flying can be very similar to commercial flying; for instance Air Force units which transport mainly passengers operate on a very similar basis to airline flying, and is viewed as such by those working within that environment. There are distinctions between the three strands of flying in the RAF. The work cultures within those strands are often dependent on the type of work being carried out. In civil flying there are distinctions between short haul and long haul pilots. There also different cultures operating in the different jobs, for instance navigators, pilots and non-commissioned aircrew in the Air Force and between cabin crew and flight crew in the civil world. At different points these different flying spheres overlap. The different groups both work and socialise to varying degrees. However each has its own culture which individuals have to be socialised into. Socialisation occurs during both work and life outside to varying degrees depending on the setting.

This section first explores some of the differences between civil and military flying in terms of working relationships and the implications for the transmission of the 'right stuff'. Next this section moves on to investigate the informal rules that exist in the training settings which contribute to the socialisation of pilots into the professional pilot role.

Working Relationships

> It's interesting flying with different captains who have been trained by different people, because their training gets filtered down. So although everything's totally standard – I mean I know what the captain's going to do and when – there are degrees within those standards. And each captain likes different things done in different ways (Ben).

Here we can see how behaviours and attitudes are transferred through working relationships. Student pilots and first officers look up to captains, respect their greater experience and knowledge. A hierarchy exists within the cockpit between the first officer and the captain. One airline pilot, Julie, had recently been promoted to a captain at the time of the interview, and was surprised by the differences in the roles. Captains have greater responsibility than first officers. They are not just flying the aircraft but are also responsible for operational management. The captain has to co-ordinate the activities of the various groups involved in organising the flight, for instance the cabin crew, air traffic control, luggage handlers, airport ground staff, and catering. The first officer has more of technical role in terms of flying the aircraft and being a second person in case of emergencies. Julie commented on the differences saying that,

> People talk to you for a start. You're not just in the background supporting what everybody else does ... I mean you're invisible when you're in the right hand seat ... because your decision as a first officer is really irrelevant.

Julie also commented on the "automatic respect" that she receives as a captain and her responsibility in providing a role model for others. These responsibilities influence work relations between pilots in the cockpit, yet sex can also add a further dimension.

Many civilian pilots fly with a different crew nearly every day, having to form a good working relationship within a short period of time. Cockpit conversation during, before and after a flight is important in forming a working team quickly. Most of the airline pilots interviewed work on short haul flights based at regional airports and thus only

worked with a limited number of teams. For them the pressure to develop good working relations in a short period is somewhat reduced. Even so, differences in ages, backgrounds and sexes between pilots can affect those working relationships.

> There were two groups of captains, generally there were very young ones and very old ones. And there would be a complete sort of difference in the way you'd talk to them. I mean you'd get on with them fine, it's just there would be a slightly different atmosphere (Helen).

> Some of the older captains are finding difficult to get used to CRM [Crew Resource Management], because it used to be the captain was the pilot, and the first officer would just sit on his hands. It's not like that at all now. The first officer is second in command really. We both fly but the captain is ultimately responsible ... But again it's now a minority of older captains that are like that ... It's dangerous if you have a captain, who is creating a screen between him and myself. If he's flying it and I don't speak up, if he's doing something wrong again that's dangerous ... There's got to be co-operation (Ben).

Some women pilots mentioned there being a more relaxed atmosphere when working with other women, whilst other airline pilots stated that some ex-RAF captains could be difficult to work with because they expected to take all the decisions. This discussion so far has centred on civil flying, but the relationship between captain and first officer is similar within multi-crew flying in the RAF. However the pilots tend to know each other better because they are members of the same squadron and socialise more outside of work. The flying community is much smaller in the RAF and the command structure is more rigid when flying. A captain in the RAF does ultimately make all the decisions, however a good captain will consult other members of their crew.

So a captain, like an instructor, can be a role model and will transfer notions of the 'right stuff' and behaviours associated with pilot roles. Ben - in his quote above - also illustrates that this transmission of behaviours and ideas is not uniform; each captain varies, just as each instructor will vary. So the potential for change in notions of the 'right stuff' and pilot roles exists, particularly in informal training settings.

In the RAF differences in rank and command responsibilities can affect working relationships.

> I suppose the military is a bit hierarchical ... It's a much more formalised ... You were all in a sense equal. Operating the aircraft with maybe 14 crew members, everybody's life depended on the other 14 members of that crew. And the fact that you might only have three chevrons, like a sergeant's, and you had three big pips and you were a wing commander, didn't make any difference ... You were equal. Everyone depended upon each other. So there was great kind of blur between the formal rank/hierarchy in the military, at least in the Air Force anyway (Ian).

When on the job rank becomes of less importance than the part a person is playing. A crew works as a close knit team. However there sees to be difference relationships between NCOs and pilots than other officers of the same rank and pilots.

> There's a very close bond between pilots and crewmen, probably not so much between navigators and crewmen, because they're subordinate to the captain of the aircraft as well, but see themselves as officers – as higher in the pecking order than crewmen (Dan).

Dan, an RAF airman and NCO in a helicopter squadron, supports the view of this close working relationship but also highlights the fact that divisions can exist between officers of the same rank who do different jobs. One helicopter navigator commented in relation to the divisions between pilots and navigators, that

> It's funny, there is more so here [on helicopters] than there is on fast jets. On fast jets there's virtually no division between the pilots and navigators because they both understand the other person's job (Carl).

The relationships between different ranks and officers with different jobs seem to vary according to the workplace. Fast jet pilots and fast jet navigators commented that they worked very closely and socialised together outside of work; in so doing promoting good working relations. Individuals on other squadrons of various sorts also said there was no problem with navigators and pilots socialising and mixing outside of work. However NCOs in multi-engine squadrons stated there were clear

divisions between themselves and the officer flight crew. They socialise in different messes outside the squadron - namely the officers' mess and the sergeants' mess - yet within the squadron they were happy to mix. This is where differences in RAF work cultures are clear. Different work cultures dictate different treatment by pilots towards the various other ranks and staff. It is by participating in social activities that student, and newly qualified, pilots assimilate such subtitle distinctions.

In the airlines similar distinctions can be seen between flight crew and cabin crew. Cabin crew receive much less pay than the flight crew. They are viewed as part of team by pilots but are seen by pilots as having less responsibility.

> The team does include the cabin crew as well. You've got to liase with them ... What we can't have is the cabin crew initiating anything (Ben).

From this comment it seems that only the flight crew can make decisions, however it is possible on occasion senior flight attendants also make operational decisions. Yet some pilots do appreciate the work of the cabin crew and admit that as pilots they would not like to do the cabin crew's job.

> As far as I'm concerned their [the cabin crew's] job is equally important as mine, because if they aren't there then we can't get any where, because they're there for the safety of the passengers. I'd hate to do their job because it's very hard work. It's far easier sitting up the front flying the thing than it is actually been down the back and being nice to some of these people ... and they work very, very hard (Alice).

The divisions between cabin crew and flight crew not only exist at work but also outside of work.

> [When out socialising] the pilots still go into one group and the cabin crew into another (Ben).
> I've been told by our captains in [the airline], the cabin crew tend not to socialise with the flight deck (Alice).

Again this is behaviour which pilots have to be socialised to accept. However as most cabin crew are women, a female pilot can sometimes bridge the gap between these two occupational groups. One female airline pilot commented,

> You're sometimes a bit of a half way house ... particularly if it's an older [male] captain ... But then sometimes you're just not quite one of the girls. (Helen)

So even female pilots can find they are not really part of the cabin crews social circle.

Work cultures within aviation vary and these work cultures can dictate different patterns in working relationships. Pilots tend to stay together as a social group, in and outside of work. Yet even within one organisation working relationships between various social groups can be highly variable. Working relationships and other work behaviours are governed by formal and informal rules.

The Informal Socialisation of Pilots

From the very start of training certain behaviours and attitudes are encouraged and promoted in student pilots in an informal way. Taking the case of UAS student pilots who are doing their elementary flight training, we can see how this process begins. Five UAS student pilots were interviewed during this research. From these interviews several aspects of this informal training where revealed. For instance, Rebecca, who was in her third year in the UAS, stated that,

> the social life it's changed. It's much more, well I think reliant on me and the other two [senior UAS members], whereas it used to be I could be carried along with the flow of what other people came up with.

These senior students eventually seem to become responsible for organising social activities. This is a way of instilling responsibility into these students. As discussed previously responsibility is one of the main aspects of the professional pilot role.

Competition is also encouraged amongst student pilots. James, a UAS student, states that the flight training is very competitive, and that after flights students compare their flight scores and everyone wants the highest score of the day. In other areas of RAF pilot training competition was also encourage through sports. As one female RAF student pilot stated, "we're all very, very competitive" (Mary).

Course bonding was another aspect of this informal training, which was raised many times during the interviews. Working as part of a team is very important for all RAF pilots even single seat pilots, as they all rely on other members of their squadron and the group staff to facilitate their job. Social bonding between pilots is also about making friendships, through which pilots can help and support each other in times of difficulty. For the UAS students drinking, doing sports and going to summer camp are part of this bonding process.

> They [RAF pilots] can be extreme when we go out, drinking especially. But it acts in my opinion as a bonding thing. In the squadron there are not many enemies, they're just all mates ... It's just a close knit unit (James).

> The highlight's summer camp ... I think that's a real good time for squadron bonding and morale. You go away as a group and you go away for four weeks to somewhere you're not used to, you've never been (Rebecca).

To bond with your course and other pilots means that you are part of the social group but you are also part of the culture, both the RAF culture and the culture surrounding aviation in general. By bonding with other pilots, a pilot is fulfilling part of their pilot role. Bonding is a particularly important part of the military pilot role.

> There is this bond ... so because you fly you're automatically in the social group, and you're in a social group because you fly (Peter).

Peter's comment demonstrates this socialisation into a wider culture beyond the simple workplace culture.

Participating in group sports is also part of this bonding process, however it also has other functions. As Peter states,

> there's a big sport ethos in the UAS ... You can see it ... you can see the sort of officer quality. The sort of outward bound responsibility type thing coming out. And you get a lot of people doing climbing, hill walking, things which take you out the back – things which the RAF are looking for.

From this comment we can see that the type of sports encouraged promote responsibly and possibly leadership and resourcefulness. Again these are the sort of qualities the RAF look for in their pilots (see Chapter 4), and are part of the 'right stuff'. So even at this early stage in training student pilots are being familiarised with the professional and military pilot roles.

These aspects of the UAS training and work culture are also present within the other cultures of aviation. If we take RAF training as a whole we can see similar informal socialisation processes at work. Examining bonding and teamwork, it is clear that learning to work within a team is an important part of the training for both RAF and civil pilots, particularly for civil and RAF multi-crew flying. Yet it is not something which is trained into either group from the very start.

> You do everything - right from your private pilot's licence straight through to commercial - you do everything by yourself, and then you have to learn to do it as part of a team. And that is quite hard really (Alice).

So teamwork is encouraged in other ways on the ground.

In the RAF whilst in basic training, pilots are expected to live in the officers mess. As they progress through training, the majority remain in the mess but some who are married live outside, usually in married quarters on the base. Socialising with course members is where the formal rules overlap with the informal rules. RAF student pilots are expected to socialise with other course members in the mess and senior officers notice those who do not. Course members are also expected to participate

in activities outside of the mess organised by other members of their course. Nearly all RAF pilots saw socialising with other members of their squadron and/or course as very important to themselves.

> Yes the social side is very important. You've got to course bond. It you don't you're sort of type cast. You'd be quite out of it really (Marie).
>
> A course always sticks together. So you do tend to socialise within yourselves and you organise things within yourselves (Neil).

These comments reinforce how important social bonding is for student pilots but also how important being seen to be participating in group activities.

In terms of socialising the student pilots talked about drinking in the mess bar after work, going out off the base as a group at weekends, playing golf or squash, and even just watching videos or having a party in someone's room. One pilot said, "Most courses sit together at dinner". Another commented that everyone talked about flying in the bar. All these aspects of the social life outside of work are part of getting pilots to feel part of a team. It also about introducing them into the "brotherhood" of aviation, because once they are part of one aviation culture they are part of the whole culture of aviation. It is also through these activities that ideas and behaviours associated with the professional pilot role are spread.

With all the different course and bases that pilots in the RAF attended it is important that a course or squadron can get to know each other very quickly. As one student explained,

> All sorts of things [activities occur] just to all help us get together and get to know each other. There's also a problem that we're on a six month cycle here ... and so you have to keep re-cementing those bonds all along. Because your breaking them and making new ones which is the way of the airforce anyway (Rick).

There are several behaviours which student pilots are expected to assimilate. The first is not showing emotions in public. To show emotions would be to demonstrate

vulnerability and a weakness, which is not part of the 'right stuff'. Notions of the 'right stuff' dictate that pilots should be strong, invulnerable and detached from emotions, in line with certain dominant masculinities. Demonstrating emotions could label a pilot as weak and 'feminine' and lacking in the 'right stuff', rather than strong, masculine and embodying the 'right stuff'. So portraying a masculine identity is important for pilots and encouraged from the outset of pilot training.

> Everyone tries to, have to be seen not to have too much pressure. "How was the trip?" "Oh not bad you know I worked quite hard", and stuff like that. Whereas when in your the aircraft your brain is being swept around the cockpit and you think, oh my god what am I going to do next, I'm going to cry. But you know you come back down and say, it wasn't too bad... (Rick).

In this situation the pilot may have had a bad flight and is very upset but has to act as if everything went well in front of other students, until they get in private. Two RAF women pilots mentioned controlling their tears until they got to their rooms. This was also mentioned by a few civil women student pilots as necessary behaviour in front of the men. Men, as well as women, have to learn to control their emotions. Behind the scenes, however, they may privately help each other deal with these emotions. A number of student pilots both civil and RAF talked about going to other students rooms to talk about their work problems and get advice. As one fast jet student stated, "I would definitely go to other students for advice, without hesitation" (Mary). Private demonstrations of emotion are acceptable but in public pilots have to portray a masculine pilot identity that is detached from emotions.

Part of the expected behaviour for student pilots, both in the RAF and civil colleges, is that student will support and help one another. Again this is building teamwork and co-operation amongst work colleagues. Student pilots will help each learn checklists or plan flights. They may even go small tasks for each other. One RAF student talked about taking on the role of orderly officer for another student for one day because they had to plan flights at short notice. Other examples include helping organise flights or taking over mundane operations duties for other students.

Participating in banter is also an expected behaviour from the very start for all student pilots. Banter, particularly sexual jokes are an important part of the work cultures within aviation. Again banter exists in both RAF and civil organisations, and in all types of professional flying. During the course of the study, I observed that in the crew room banter and sexual jokes were exchanged almost constantly. It is a way of relieving both the monotony and pressure of flying. Pilots, especially RAF pilots spend many hours on the ground. Jokes are used to make break up the day between flights. Student pilots spend many hours a day in the crew room as they may not have the ground duties operational pilots have to fill their days. Student pilots are encouraged not to show how stressed and under pressure they are, as part of controlling their emotions. Hence humour is a way of expressing and releasing these emotions.

Jokes are used by men to "negotiate" the tension they may feel their relationships with each other, and with women (Lyman 1987: 150-151). Therefore jokes are used by men to express emotions that are taboo and are a way of sharing intimacy. Jokes can be used to create a "special male bond" (Lyman 1987: 158) and "solidarity" (Lyman 1987: 159-160) between men. Sexual jokes are also used to demonstrate heterosexuality and masculinities between men (Lyman 1987: 157-159). In the RAF demonstrating heterosexuality was, until recently (i.e. January 2000), vital since homosexuals were banned in the British armed forces. Being heterosexual has historically been part of the 'right stuff', and it will probably remain so for sometime. In an environment such as the RAF where close relationships and social bonding between men is encouraged, sexual jokes can be important for maintaining a distance in those relationships. Participating in telling sexual jokes allows men to show they are heterosexual. However these jokes also reinforce the solidarity between pilots and the bonds that are created during training.

The comments of Dawn, a multi-engine RAF student pilot, outline the general attitude towards banter in both the RAF and civil aviation.

> It [banter] just shows that you know some people fairly well. Even if you've just started on a new course, you find that - I've found that in every course I go to - it doesn't matter whether you've met them - yeah okay the first day is introducing people and you don't know them very well. By day two you're already mates and you'll banter each other. That's just the way it is. And that's a good thing. It shows that you get on with people, and you can take the mickey out of them and you don't take it personally. You know, just having a laugh, and you give it back.. Everybody does it.

As stated this banter is often overtly sexual and may also pick on someone's behaviour or physical appearance. The female pilots especially have to learn to receive and make sexual comments. Women pilots can be a particular target for banter because of their visibility as a minority group. In order to participate in the cultures and demonstrate the appropriate gender identity women pilots have to equally participate in the sexual banter.

Banter is also used as a sanction or punishment for students who do not follow the informal rules of behaviour. If they do not demonstrate the right stuff or fit in with the various pilot roles, they can find themselves the main target for jokes.

Studies have shown that men experience difficulties in forming friendships because of competitiveness, fears of showing vulnerability, homophobia regarding showing affection to other men and a desire to be "in control" (Stein 1986). Competitiveness amongst students is encouraged, showing emotions and vulnerability is discouraged, as it showing affection to other men. So one would think this might cause difficulties for male pilots to bond and develop friendships with other members of their course. There are contradictions in the gender identities which pilots are encouraged to demonstrate. On the one hand, RAF pilots are encouraged to demonstrate facets of hegemonic masculinity, namely remaining detached from their emotions and appearing strong. On the other hand, they are encouraged to form close bonds and emotional support networks with other pilots. These could be viewed as counter to notions of hegemonic masculinity. They can be viewed as stereotypical feminine behaviours. Male, and female, pilots have difficulties

reconciling these contradicting gender identities, and they deal with them in different ways (see Chapter 7).

Civil student pilots tend to socialise less amongst themselves, but this will depend on their particular situation. If they are a modular student then it can be difficult for them to fully participate in the social life of the training college they attend because they are there for short periods of time. There is also not the same intensity of bonding between civil student pilots, because the civil pilot community is much larger and they will not rely on the other pilots for their lives in times of war.

These informal rules of behaviour from controlling emotions to helping other students are present to varying degrees in all the pilot training environments. There are some cultural differences between the rules RAF and civil pilot students, however in the end all these rules are there to ensure the continuance of the 'right stuff'

CONCLUSION

The professional pilot role is dominated by concepts of professionalism. To be a professional pilot is to be responsible, disciplined, confident, safe and enjoy flying, all of which are aspects of the 'right stuff'. To perform this role pilots have to adopt an identity based on masculine ideals. Instructors help shape notions of the 'right stuff' by being a role model for students, and commanding their respect through adopting appropriate professional pilot identities and fulfilling the professional pilot role. Instructors are crucial in transmitting the ideas and behaviours of the professional pilot from the organisation to the student, and possibly vice versa. The extent to which individual students adopt aspects of the 'right stuff' and attempt to fill the professional pilot role depend on the choice of the student. Some make every effort to fit with the role and organisation and some do not, as we shall see in the next chapter.

This chapter has discussed the informal rules surrounding the training of pilots. These rules, such as not showing emotions, being competitive yet supportive of other student pilots, the use of sexual jokes and course bonding, are all part of the cultures of aviation. Yet they are very important in understanding how work cultures can shape gender identities. There are conflicts in the gender identities that pilots are encouraged to perform. Some behaviour may be seen as masculine and some as feminine. These contradictions can cause problems for pilots in performing the appropriate gender identity to fulfil a specific pilot role.

There are many pilot roles. This chapter has mainly concentrated on the professional pilot role but it has also covered aspects of the military, RAF and airline pilot roles. The structure of pilot roles within aviation is complex and many of the roles overlap. Work cultures can determine which roles are appropriate for a pilot to adopt. Pilots try to assume these roles, but the extent to which they are adopted will vary from individual to individual. For instance pilots may decide when to show emotions in public or to what extent they will participate in the bonding process. Hence these roles are situational. Individuals do have freedom of choice in which roles they adopt. However their success in training and as a pilot can depend on which roles they adopt and the extent to which they can fulfil those roles. As we shall see in the next chapter, some pilots have problems fitting in with certain roles when identities conflict.

Some interesting areas for future research have been highlighted by this chapter. There may be links between the confidence of female pilots and pilot training system, which is a reflection of the experiences of girls and women science and technology education. More research is needed to look at the impact of instructors on women pilots. However this is a sensitive subject so any such research may be difficult to conduct. From this study it has been difficult to judge the effects of individuals on organisations and whether this has implications for change. This interaction is potentially important for the formation and change of gender identities, so any research on this topic would further the understanding of gender identities and change.

Chapter 7

Becoming 'One of the Boys'

INTRODUCTION

> The environment isn't going to change for a person, an individual coming in, the individual has to be able to fit into the environment (Norma).

This quote sums up how pilots have to fit into the existing aviation cultures or the "environment". The previous chapter demonstrated that pilot training attempts to change student pilots' attitudes and behaviours to conform with that of a professional pilot and fit with the various pilot roles. There are formal and informal mechanisms in operation, during training, to which individuals must adapt their behaviour and perspectives. Deviations from established aviation cultural behaviours are penalised. Individual pilots adopt their own methods of fitting in with pilot roles. The extent to which an individual is 'successful' in fitting in will depend on the strategy adopted.

In this chapter I explore the extent to which individuals adapt their behaviour and attitudes to fit in with the various cultures of aviation. The first section is a brief discussion of terminology, considering how we should view female pilots as a group, are they deviant or tokens? The subsequent sections examine how female and male pilots mange fitting into the dominant work cultures of aviation. First some of the problems associated with being a token are discussed, namely visibility, capability and identification, along with the strategies that are adopted by pilots and other token groups. Finally this chapter examines the extent to which pilots actually fit with the 'right stuff' and how this can be problematic for individuals. Throughout this chapter the experiences of individual pilots are used to illustrate the processes of adapting to aviation. However the experiences of some pilot highlight these issues more than others, so I have particularly focused on these individuals.

WOMEN PILOTS: "DEVIANTS" OR "TOKENS"?

Howard Becker studied the use of marijuana and how individuals come to act against social controls (1963: 59-78). The use of marijuana is controlled through laws, ideas of moral behaviour and fears of social sanctions. He found the law affected the supply of the drug, and therefore the more frequent the use of the drug the more involved in the 'deviant' social group an individual became. He also found that the more an individual overcame the fears of being discovered and rejected stereotypes of drug users the more likely they were to become regular marijuana users.

> In short, a person will feel free to use marijuana to the degree that he comes to regard conventional conceptions of it as the uninformed views of outsiders and replaces those conceptions with the "inside" view he has acquired through his experience with the drug in the company of others. (Becker 1963: 78)

Thus in this case through experience and exposure to different social groups an individual may act against conventional behaviour. Although flying is not illegal, women who enter aviation are acting against expected norms of behaviour for their sex. As we have seen flying has been, and still is numerically, a male dominated profession. Therefore women who chose aviation as a career could be viewed as social deviants.[1] Using Becker's arguments in this way, it appears that by becoming part of the cultures of aviation, women will also accept the conventions of behaviour within aviation as acceptable and "normal". As women pilots come to accept notions of the 'right stuff' and conventions regarding pilot roles, they are also less likely to press for change. However not all women (and men) pilots accept these conventions and some pilots do reject some of them. In this way they affect notions of the 'right stuff' and pilot roles.

Women pilots can also be seen as "tokens". "Tokens are not merely deviants or people who differ from other group members along any one dimension. They are

people identified by ascribed characteristics (master statuses such as sex, race, religion, ethnic group, age, etc.) or other characteristics that carry with them a set of assumptions about culture, status, and behavior highly salient for majority category members" (Kanter 1977: 968). In other words, "tokens" also carry symbolic ascriptions, for instance being a woman also carries stereotypical assumptions about feminine behaviour and characteristics, such as being nurturing and caring.

In a way women pilots fall into both of these categories. They are deviants from the majority of women by entering a male dominated occupation but they are tokens within that occupation. Personally, I do not ascribe to either of these terms, since they can have negative connotations. I prefer to think of female pilots are one social category within the complex structure of aviation. Even this categorisation is not homogeneous, as there are many different types of female pilot, and many different types of male pilot. However for the ease of discussion in this chapter I use the term token as categorised by Kanter (1977) - namely tokens are minority members of a skewed group where the numerical majority dominate the group and its culture.

EXPERIENCES OF BEING A TOKEN

Kanter (1977) identifies three aspects of being a token: visibility, polarisation and assimilation. Women pilots also experience aspects of visibility, polarisation and assimilation. This section outlines the main issues women pilots face as token in relations to Kanter's research (1977). Subsequent sections then discuss in further detail the specific experiences of women pilot and their coping strategies.

Kanter (1977: 972-975) in a study of women selling industrial goods, which was at that time a male dominated occupation, found that the women experienced various performance pressures because of their visibility as women. One aspect was the public nature of these women's actions, "it was difficult for the women to do anything in training programs or in the field that did not attract public notice"

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[1] By using the term deviant I do not mean to imply anything wrong or abnormal. This term is being used to imply someone acting against social conventions of behaviour and/or attitude.

(Kanter 1977: 972). Another pressure was the symbolic consequences of their actions; for instance their performance could influence the prospects for other women. Kanter found "the women had to put in extra effort to make their technical skills known, to work twice as hard to prove their competence" (1977: 973); but there was also a fear of retaliation if they were too successful (1977: 974). In response to these performance pressures Kanter found that women either resorted to overachievement or attempts to limit visibility (1977: 974-975) - they tried to blend in. Kanter's observations have much in common with the experiences of women pilots. From this study I have found that the two biggest issues facing women pilots are their increased visibility and the pressure they feel to prove themselves. The majority of women in this study attempted to limit their visibility by fitting in or becoming 'one of the boys'. Women pilots are all too aware of their visibility and adopt a variety of strategies in order to become less visible, as discussed in the next section.

Kanter (1977) also found tokens experienced polarisation, which in her study of industrial goods sales had several different outcomes. One outcome was that the male dominated sales culture tended to be exaggerated in the presence of the token women, for instance the men made more sexual innuendoes or told more stories of sexual adventures when the women were present than when they were not (1977: 975-977). This form of "polarisation" also occurs within aviation. Any pilot can be subject to banter for any reason. Women are obvious targets because of their minority status and difference from the male sexual norm.

Another outcome of polarisation, which Kanter identified, were loyalty tests (1977: 978-979). The saleswomen were encouraged to join in when jokes or comments were being made either about other saleswomen or women in general. In this way the token is seen to identify with the views of the majority (Kanter 1977: 979). As we shall see women pilots join in the banter against other pilots, male and female. They also criticise behaviour that does not match the expected behaviours of the pilot roles, even if they do not ascribe to all the expected behaviours themselves.

Kanter identified a tendency towards the assimilation of tokens, one aspect of this was "stereotyped role induction" (1977: 981). In other words, Kanter found that tokens tend to adopt stereotypical roles. For the saleswomen the roles included being a mother to the men and listening to their problems, being a seductress or sexual object, and being a pet and a sort of mascot for the men (Kanter 1977: 982-984). From the interviews with pilots I did not find any that adopted the role of "seductress" at work, as this would have been counter-productive in their work environment. However, male pilots do ascribe the roles of mother, daughter and sister to women pilots.

Ultimately Kanter concluded that tokens may suffer a lot of personal stress, especially since they may have to work twice as hard to prove their ability or spend more time developing working relationships (1977: 987-988). This is also very true for pilots, as we shall now see.

VISIBILITY

Pilots are very visible in society because of the images surrounding aviation and their rarity in public life. This section explores both the visibility of pilots in general and the added visibility of women pilots. It discusses the problems and benefits this visibility can have for women and the strategies women adopt to cope with their added visibility. The end of this section pays particular attention to the publicity that female RAF pilots have been subject to, by exploring the experiences of two women.

Pilot Visibility

It is a fact of life for pilots that they are highly visible outside of the cockpit, especially civil pilots who have more exposure to the public at work than RAF pilots. Two civil pilots stated,

> Walking through the terminal at the end of the day, going back to the office, most people look at you. You're an advert for [the airline]. And

also because the door's shut all the time they want to see what we look like. We're just voices (Ben).

Got to wear my uniform. Got to pose about in the airport. I feel like a right wally. It's quite funny because people look at you... It's very odd wearing a uniform full stop, because people do look at you (Alice).

The uniform pilots wear is a statement of their status and the prestige of the job. A pilot's uniform also embodies a certain mystic. Pilots in uniform are not often seen outside of the aircraft, so there is a certain novelty about seeing a pilot in uniform on the ground.

Coping with Additional Visibility

Women pilots as a minority are also highly visible. Hence they endure being doubly visible; on one side they are conspicuous in the workplace amongst their male colleagues and on the other side they are visible just as pilots when in public. This visibility has certain consequences for women pilots. From the interviews all except two of the female pilots mentioned being well-known and easily identifiable at work.

I know all the boys know who all the girls are, whereas all the girls don't know who the boys are because there's so many of them ... But like I said there's only six women in the whole school altogether, so that's not very many (Andrea).

You will go places being a female because you get noticed. I mean it'll take two days and the station commander will know my name. They wouldn't know one bloke's name on the course, and all the staff are like, "Oh Marie how are you?" Whereas they just wouldn't know most of the men's names because they just don't notice them as much (Marie).

I mean I'd been here a week on the ground school and everyone knew who I was. The chief instructor went "I know who you are", and didn't know any of the other guys names. That annoys me because that immediately makes you stand out, and that immediately isolates you from the rest of the course as well (Mary).

It is difficult to walk into a bar and be the only female in there ... Sometimes you walk in and you're the only female and feel really

conspicuous ... And because there's only very few girls, they really recognise the girls, they stand out. But you do get unwarranted attention sometimes (Rebecca).

These comments - from one civil and three RAF pilots - reflect the general feelings of the women pilots interviewed, highlighting some of the problems and possible benefits of their visibility.

As Marie says being noticed can allow a female pilot to "go places". Of course this is only her personal opinion and there was no direct evidence from this study to support this statement. However it is possible that gaining the attention of senior officers or managers can be positive when it comes to promotions or new job opportunities. They may remember a women pilot before they think of a man for the job. However this can also have drawbacks, since a senior officer or manager is more likely to remember any mistakes made by a female pilot, just because she stands out more. For instance Mary also commented,

> You've got to control yourself. In the bar the lads really do get quite drunk and leery. I try to take one step back and not get quite as bad, because they'd always remember what I'd do (Mary).

When Mary states that "they'd remember", she is referring not only to her male work colleagues, but also to senior officers. She goes on to relate a story about an occasion when she was remembered for getting very drunk. So one way of dealing with this visibility is for the female pilots to ensure their behaviour is always under control and within limits. Those limits being defined by themselves and senior management or officers, who by and large will represent organisational attitudes.

Some women pilots, like Marie, enjoy the attention. However from the interviews it appears that for the majority of women pilots their extra visibility is something they learn to tolerate. The first comment made by Mary - on the previous page - suggests that female visibility can hinder integration into the group and therefore into the pilot roles. A woman pilot being singled out by senior officers can cause resentment amongst work colleagues, since they may feel that women is gaining special

privileges just because of her sex. One male RAF fast jet pilot - who was on a training course with Marie at the time of the interviews - stated,

> Marie – I don't know whether it's her personality as well - is very good and will stand up to an instructor. And because as a female she tends to be quite isolated she can actually stand up like that. Whereas I think a lot of the times if men in the group stood up to another pilot or an instructor they will slap you down, because it's another bloke. But because there is that spotlight on her already, it's different. The relationship is slightly different. I wouldn't say they treat her differently … Sometimes you do get the occasional – you worry about whether those relationships – there have been quite a few like that and then you start thinking are all of them objective still … (Ron).

Here Ron is concerned with whether or not women pilots get special treatment, and possibly more lenient treatment than male pilots. This was a concern many male pilots expressed. This concern means women pilots have to demonstrate that they do not receive any special treatment and are as capable of the job as their male colleagues.[2] Ron also recognises that woman pilots are more visible and therefore can have different relationships with instructors and other senior pilots in general. In this case Marie can stand up to an instructor when other male student pilots may feel intimated to do so. Here is a woman utilising her visibility to her advantage, but it can be a disadvantage when trying to bond with other course members.

Rebecca's comment - above - demonstrates that it is not only in the workplace being a female pilot can be a problem, it can also be a problem in the mess bar. Although there are a large number of women in the Air Force, as I observed, women are still not a very common sight in the officers' mess bar. Hence other RAF officers can single them out for unwanted attention. As Rebecca stated this attention does not come from work colleagues but from other male officers in the bar. This is another situation women pilots have to learn to deal with. As Rebecca explained, "I think you learn to handle yourself pretty fast when you walk into the bar".

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[2] This need for women pilots to prove themselves is discussed in more detail in the section on capabilities.

It is not appropriate for a women pilot to be seen as a sexual object in the workplace, whether that's in the aircraft, office, or workplace bar. Kanter (1977: 981-984) identifies various stereotypical roles which women may be allocated in a male dominated workplace including mother, seductress and pet. In professional aviation female pilots are not encouraged to become the "seductress", since this would be counter to the masculine gender identity which they are expected to perform. On the other hand, in some instances they do become a "mother". At least six women pilots mentioned being the person to whom their male colleagues come to with their problems - being a shoulder to cry on. Andrea commented that the men were away from home for a long time and liked to have some female company occasionally. The women pilots give the male pilots a space where they do not have to hide their emotions and perform the expected very masculine pilot identity.

In the interviews more male pilots saw their female work colleagues as someone to protect. Three female pilots talked about other male pilots protecting them in the bar from unwanted attention, and some women used their male colleagues as a deterrent for this unwanted attention from other men. Several male pilots also mentioned feeling protective towards female pilots they knew, both in social situations and in a combat situation. The majority of male pilots, when asked how they would feel working with a female pilot in a combat situation, said it would make no difference unless they were shot down over enemy territory. Then they would possibly feel more protective of a woman pilot than a man. Of course all these answers were hypothetical since none of the male pilots interviewed had been shot down with a women pilot.[3] Yet these attitudes do demonstrate that these male pilots hold some stereotypical views towards women pilots, namely they still see themselves as man the protector of family and home. This is a gender identity that is very much part of the masculinities which dominate military institutions. So here we have a conflict for male pilots. On the one hand, they are encouraged to see themselves as military men protecting home and country; women being one part of what they are protecting. On

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[3] At least four of the RAF pilots interviewed have been in combat situations. It is possible some of the civil pilots who were ex-military pilots may have also been in combat situations. However for these

the other hand they are encouraged to see women pilots are just another one of boys and capable of taking care of themselves. This is not a conflict that male pilots are aware of on a daily basis; only in certain situations.

Similar to Kanter's research (1977) women pilots can become a "pet" for some male pilots, but this is not a terminology which sits well with the evidence from this study. For most male pilots, women pilots take on more the role of a sister or daughter, depending on the age of the male pilots in relation to the female pilots. Women pilots are people male pilots want to protect but not all the time.

Publicity

There is one final aspect to the extra visibility women pilots experience, namely publicity. Since the RAF changed its policies to allow women pilots there has been much publicity surrounding the women pilots in the RAF. There is occasionally publicity about successful or extraordinary women civil pilots but over the last decade the media have concentrated much more the few RAF pilots. It is an issue that few female civil pilots have to deal with and none of the female civil pilots interviewed had experienced publicity. Yet it is something many of RAF women pilots have personal experience of, or it is an issue they have at least considered.

From the interviews there is only one strategy now adopted by most RAF women pilots; to avoid publicity wherever possible. During the time of this research project there have been regular articles in newspapers, magazines and on television either discussing women pilots or more generally the issue of women in the military. For instance during the fieldwork period there were some articles on one of the first RAF fast jet pilots who had become pregnant which caused a lot of controversy including a debate in parliament. The central theme in these discussions was about the expense of training pilots who become pregnant and are then no longer operational or unwilling to go into front line positions. These articles also proved to be a source of

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civil pilots their combat history was not discussed at length and some of the RAF pilots were very reluctant to talk about any combat they had seen.

conversation amongst pilots. This demonstrates the influence such publicity can have in increasing the visibility of women pilots.

Taking two RAF women pilots as examples we can see the strategies these women adopt and the affect publicity, and the increased visibility, can have on their lives. Both these women were helicopter pilots; Susan had only been an operational pilot for one year at the time of the interview, whilst Norma had been operational for five years.

> SG   There's been a lot of publicity of female aircrew. Have you found that's affected you in any way?
>
> Susan   I've not got involved in any of it. There's no pictures of me anywhere.
>
> SG   Have you actively tried to do that?
>
> Susan   Yeah. I don't agree with it. Also – it's looking into the future – if you were involved in a war, these people collect these pictures and they know exactly what you are. When we fly around in certain environments we fly in code. We don't fly in this type of clothing that can identify us as aircrew. So for them to have any pictures that give away your personal life, then it would be stupid in the event that you ever did go to war and you were captured, then they would have that information on you which is not really worth them having.

Susan has not just rejected the idea of publicity to keep her life private, but she has also considered the implications of publicity for combat situations and enemy intelligence. A captured female pilot would be a prime target for any enemy propaganda. Norma by contrast did get involved with publicity being one of the first women to gain her wings in the RAF. She found she received hate mail and had journalists "hounding" her. Her relations with work colleagues also suffered as her story describes.

> I had quite a lot of press coverage when I went through because I was the first female pilot to fly helicopters and the air force really picked up on that. It was difficult because it was always portrayed all the way through flight training that I was just one of the boys. I would be treated exactly equally ... And that was fine and I think everybody believed that. I certainly felt, and all my male colleagues felt, that I was exactly the same, which was

great. Then suddenly at the end of the course when I got my wings. We had a press conference with television and all the national newspapers, and then there was a discrepancy between me and the rest of my course and that made them understandably anti-me. They weren't really anti-me, as they knew I didn't want it, but they were anti the fact that it happened and they reflected that back on me. So that was bad and I didn't enjoy that. And I can understand why the Air Force do it; good publicity. But there is a case of using the individual and making the individual's life hard for the benefit of the organisation. And I'm not a person who really believes in that ... I did, especially in the early days, quite a lot of things, like going to talk at schools and women's clubs and things like that. But I've tried to play a lot of that down now, because I think it's no longer a novelty ... And to an extent that's happened, partly because I've made it happen by turning things down. Refusing to be picked out. To be isolated ... I've had quite strong dealings with them [the RAF] and they [the RAF] now appreciate my point of view ... If it was up to them I'd still be giving a lot more (Norma).

I think this quote highlights very clearly the affect visibility can have on women pilots. Here we have a woman gaining public recognition for her achievements but at the cost of her working relationships, and to an extent her privacy. She had to struggle through training to prove her abilities to other male pilots and the RAF hierarchy. After proving herself in training she then had to almost start again when she became an operational pilot because of all the publicity. She had to prove that she was more than just a 'token' and was capable of doing the job. In the end after negative experiences and fitting with the organisation's wishes, she rejected their notion of what she should do as a female pilot and tried to reduce her visibility by not participating in any more publicity. This women changed her coping strategy from fitting with organisational notions of the extra role a women pilot should play, to just trying to fulfil the pilot role any man has to fulfil. These two stories also illustrate the changes that have occurred in the coping strategies of women RAF pilots. Now women RAF pilots can more easily decline participating in any publicity for the RAF. Women such as these have also changed organisational expectations of the role of women pilots.

CAPABILITY

Many male pilots and other men within aviation share a concern about positive discrimination towards women pilots. Aviation organisations, such as the RAF and airlines, deny that positive discrimination occurs. From this research it is clear that as far women pilots are concerned, they gained their positions due to their merits and abilities. A third of the men interviewed hinted at the possibility of some women pilots getting the job just because they are women and organisations having quotas to fill. Yet I could find no evidence to support this during this project. The fact that such suspicions exist places pressure on women pilots to prove they are as capable at the job as men are. This section explores how women cope with this pressure to prove themselves and examines the different behaviours women, and men, adopt in order to prove they have the 'right stuff'.

Most of the men interviewed had no problem working with a woman pilot, "as long as they're up to the job" (Rick). One RAF pilot stated, "I'd expect the same from her as I'd expect from a bloke" (Neil). So a woman pilot has to be seen to do the job at least as well as a man, if not better.

Three of the instructors interviewed noted that women pilots tended to have greater dedication and often worked much harder than their male colleagues, on items such as pre-flight preparation, perfecting flying skills and gaining a technical understanding of aviation. It was this dedication and determination, which most often impressed male pilots about the women pilots they worked with.

If a woman pilot appears not to be pulling her weight then she can be penalised. Alice, a civil student pilot, stated, "I don't want to be given any extra help because I'm a female, because that makes our male counterparts resent you". A woman pilot cannot be seen as a 'special case', so had to be seen to have the necessary capabilities for the job; in other words she has to have the 'right stuff'. Six other women pilots also stated that women pilots should not ask or any special treatment, but should just fit in. However a woman that does have the 'right stuff' will be given full credit by

male pilots and receive their respect. "That's where you get your respect, from being able to do the job" (Susan). Although proving that you have the 'right stuff' and can do the job is something male pilots also have to achieve. For instance, Keith, an RAF multi-engine pilots, discusses the problems of failing during training and "being seen not to perform well". If a pilot does not appear to be performing to expectations then they can be dropped from the training course or switched to another type of aircraft. Keith passed his fast jet flight training but failed at an OCU and was then sent to learn how to fly multi-engine aircraft. Keith did not have the 'right stuff' to be a fast jet pilot but he does have the capabilities to be a multi-engine pilot. This change for many pilots would be a great failure since the majority of pilots in the RAF initially desire to become fast jet pilots.

Women, and men, not only have to prove their abilities to do the job but also their abilities to fit into the organisation and work culture in general.

> As a female you've got to – not prove yourself – but you've got to show that you're as capable in the all fields as they [the men] are, whether it be just stupid things. You'll go to the gym and I will do sport, and they won't accept that I am equally as fit as they are, and also as capable. In fact we beat them at quite a few of the sports. That sort of thing. It's not me being grossly over competitive, but it's showing them that you're equal ... And when you go to the bar – it's not really capacity you drink – but most women tend to drink pints in the bar because you do because it's easier. It's just fitting in. I enjoy it (Marie).

It is possible that, unlike Marie, many women might not enjoy the pressures and competition that are involved with fitting into the aviation work cultures. A woman pilot has to have a different sort of 'right stuff' from her male colleagues; she has to have the ability to fit into a male dominated masculine environment.

Women pilots, like male pilots, have to ensure they are seen to be fully participating in group activities. Marie goes to great lengths to prove that she can do all the activities a male pilot can do at least as well, if not better. Other women pilots said they made a point of drinking as much as the men. As demonstrated by Rebecca's comments in the previous section, such behaviour has to remain controlled. Another

RAF pilot noted that she "can be a bloke so to speak. I can chat up birds for them or whatever if I need to ... It's just being accepted ... You can be accepted as an asexual person" (Susan). This woman takes fitting in socially further than many of the other women interviewed. Although she claims to be asexual, her other statements suggest that she really does try to emulate male behaviour at work and around male work colleagues.

Women pilots are also expected to fully participate in banter and prove that they are not offended by sexist jokes. "Banter is a form of acceptance, It's an integration sort of thing" (Rick). Banter is present in both RAF and civil aviation work cultures. It is part of the pilot roles and socialisation processes. Banter also helps social bonding and camaraderie between pilots, which is especially important for RAF pilots.

> If you're one of these people who gets easily offended by bad language or sexist jokes or all this sort of stuff then it's perhaps not the place for you. And there is I suppose a fine line between what is just a joke and what's serious – harassment or whatever ... I mean I've had the odd moment of people being a bit prattish (Alice).

A woman pilot cannot be sensitive to any sexual references and jokes. The majority of women pilots commented that becoming "thick skinned" was part of adjusting to the work environment. Women pilots are particular targets for banter and jokes. Two female RAF pilots commented, "I mean they give me a lot of banter being female" (Marie) and "You'll get a lot of rough banter" (Ruth). The men are testing the women pilots for a reaction. Similar to Kanter's research (1977), the women are being tested to see if they have assimilated the ideas and behaviours commented with being a pilot. They are also testing the women to see if they are part of the group and the culture. In another way it is also a form of acceptance of the women into the culture, since everyone receives banter of some sort. The behaviours of some women to banter do change one they have integrated into the work culture.

> I think your sense of humour does then to get a bit more risky. I think you tend to get less shocked by some things. I mean the way men behave (Alice).

> You've got to be able to give as good as you get ... and that's when the guys accept you ... I think I'm ruder than most of the men (Susan).

Women, and men, assimilate the behaviours of the pilot roles to varying degrees. Susan is proud of the fact that she can be as rude as the men if not worse. Here is a woman proving her ability to banter and even trying to better the men. In a way Susan is over compensating in how far she goes to prove her capabilities to male pilots. From the interviews most women pilot just aim to give banter back not to out do the men.

Men also have to learn to accept and give banter. A few men commented that it was something they have to get used to when they entered the job, especially in the RAF. As one multi-engine pilot said, "It's [banter's] been ever present, before I joined ... it's just something you're meant to live with ... and you get slowly better at, hopefully" (Rick). So banter is a skill pilots learn through practice, and this is true for both men and women.

There are also different informal rules of behaviour for male pilots and female pilots, particularly in the RAF. Marie claimed she could be as "loud and blarry" as a man, but then commented that women she arrive in a bar it made a difference socially. She was immediately welcomed, "whereas a bloke might not be as welcomed instantly. They [male pilots] enjoy female company." A number of male pilots also commented that having a woman pilot around meant that there was less pressure to perform and put on a "macho" image. With a woman around the competition between the men to perform masculine identities and prove their masculinity is reduced.

As far as the women pilots are concerned they are not expected to perform a masculine gender identity to the extremes of the male pilots. For instance two women RAF pilots commented they did not swear as much as the men. One said it was because swearing by women was frowned upon by some senior officers. Three other women RAF pilots stated they did not drink as much as the men. It seems where drinking is concerned

women pilots set their own limits; some drink to be social while others try to match the men.

One RAF student pilot commented on how she was expected to still appear 'feminine' in front of some senior officers, for instance by wearing makeup and having a uniform with a skirt instead of trousers. This appearance is in complete contrast to how RAF pilots appear on a daily basis. The flight suits are designed for men so do not fit most women very well. It can be a hot sweaty job, and as another female RAF pilots stated, "you've got to be so unselfconscious about the way you look". During the fieldwork I noticed that many of the women pilots, both civil and RAF, had long hair. The ones I observed outside of work, also wore makeup and wore their long hair down. In these ways some women pilots seem to actively perform feminine identities where are concerned with their appearance outside of work, which is in contrast to the stereotypically masculine identities they perform at work.

The 'right stuff' involves remaining detached from emotions at work, especially for RAF pilots. Stereotypically women are thought to be more emotional than men. Women pilots, like their male colleagues, are expected to perform stereotypical masculine pilot identities that mean hiding emotions whilst in public. However there is an expectation, held by some male pilots, due to stereotypes that women pilots will be more emotional. One civil flying instructor when relating his experiences teaching female student pilots and navigators commented that,

> What I did find slightly disconcerting was when they [female students] did something wrong, then burst into tears then wept down your shoulder. That was kind of difficult in an aircraft (Ian).

The instructor found this difficult because it was not the expected behaviour of a student pilot. They are expected to act as if everything went well during a training flight whilst in pubic, even if the flight went very badly. They are expected to keep a 'stuff upper lip' in public. A few women and one male pilot stated that they had on occasion felt like crying after a flight but had pretended otherwise.

Women pilots particularly have to prove they can control their emotions in order to combat stereotypical expectations of female behaviour. If a woman did show emotion it would prove she lacked the 'right stuff' to be a pilot. It may also be remember by some male pilots as a reason why women should not be professional pilots.

> You've really got to control yourself, otherwise you loose the respect of the guys you work with ... curbing emotion is definitely something you've got to work on (Mary).

> Sometimes you think I want to go away in a corner and cry ... but you think I'm not going to give him [the instructor] the satisfaction of crying (Andrea).

Remaining detached from emotions is counter to the gender identities that most of these women will have been taught to perform from a young age. Being a woman conventionally means showing emotions. However the pilot identity is an identity which all of the women interviewed seem to have adapted to. I did not come across any cases where women burst into tears.

There are many aspects of the 'right stuff' which women particularly have to demonstrate to their male work colleagues and superiors in order to demonstrate they are capable of doing the job and fulfilling the various pilot roles. All pilots have to demonstrate that they have assimilated the values and ideas of the cultures of aviation.

IDENTIFICATION

Becker et al (1961) in their study of medical students found that during the course of their training students gradually came to identify with the attitudes associated with medical professionalism. In chapter 6 we saw that the RAF UAS training syllabus states that student pilots should identify with the philosophy of professionalism and identify with service interests and traditions. It is important to aviation organisations that pilots identify with their aims, demands and goals. This section examines how

far pilots identify with the aims and goals of aviation organisations by taking the case of pilots' future goals. Eighty percent of the pilots were asked about their future plans and goals. However some of the older pilots were just aiming for retirement or to remain a manager or instructor. It is the goals of the younger pilots, which reveal more about their degree of identification with organisational goals. Hence this section is based on the responses of twenty-eight pilots.

Airlines want their young pilots to aim at gradual promotion, from initially flying turbo prop aircraft as a first officer to flying jets as a captain and, depending on the airline, moving from short haul flying to long haul. Examining the responses of nine civil pilots - five men and four women - clear differences between male and female future goals emerges. Three of the men stated that they desired to be a captain and then move on the jets, eventually flying large long haul jet aircraft. When asked about futures plans all of the male civil talked in terms of the aircraft they desired to fly and promotion. In contrast the four women also responded in terms of work environment and/or family life, although two mentioned promotion. For the women location was much more important and maintaining a stable home base. Most of these women wanted to remain on short haul flying rather than long haul. Three of the men discussed changing airlines and jobs, but none of the women mentioned this as a goal. One woman wanted to stay with her present airline for "a fairly long time" because the work environment was pleasant and there "a lot of female pilots and from that point of view you're not a novelty" (Alice).

Chapter 6 discussed how aviation organisations and instructors train pilots to organise their lives around their job. They want pilots to view their job as central to their lives. In a way these male airline and civil student pilots do seem to view their job as central to their future. They did not discuss any family or personal commitments as part of their future plans. The women civil pilots do mention their job as important for their future plans but their plans also take into consideration their family and private lives. It seems that female civil pilots do not identify to the same degree as the male civil pilots with organisational goals concerning their future.

As stated above the RAF wants its pilots to view the organisation as central to their lives. The degree of identification with this view has got to be greater amongst RAF than civil pilots because the RAF has more control over the lives of their pilots than airlines. The RAF dictates where individuals will be based and in some cases where they will live. From the nineteen RAF pilots, whose responses to their future goals were analysed, there is not such a clear distinction between male and female goals as with the civil pilots. Again more women than men mentioned family and their private lives an as important part of their future plans. The male RAF pilots more often talked about future goals that revolve around their jobs, such as being on the front line, or flying fast jets. Whilst the female RAF pilots more often mentioned goals such as having a family, getting married or being based near their partner. Yet some men also discussed wanting to be based near their family or partner, and some women only mentioned wanting to fly a certain aircraft, or for instance wanting to be on a harrier squadron or to be an instructor.

The most noticeable differences in goals between RAF pilots were between fast jet and multi-engine pilots. Fast jet pilots saw a future which was more job centred, whilst the future plans of multi-engine pilots were centred more on family and private lives. However all the RAF pilots recognised that their future lives were not their own whilst they remained in the RAF. This was a complaint against the RAF made by many of the pilots interviewed, but they all accepted it was part of the job and a function of being in the military. It is clear that not all pilots fully identify with the goals of the organisation they work for and, as we shall see, individuals maintain differing degrees of integration into the cultures of aviation.

DEGREES OF INTEGRATION

Becker's study (1963) into marijuana usage suggested that increased exposure to a deviant social group leads to changes in the attitudes and behaviour of an individual. Becker states that the outcome of an individual's "deviant career" - possible success or failure - depends on the level of integration for the individual into the organisations for that career (1963: 102-103). He uses the example of dance

musicians to illustrate this point. A 'successful' musician will be part of a large informal social network and will often sacrifice external relationships for their work (Becker 1963: 103-119). Pilots also make sacrifices in order to be 'successful' at integrating onto the cultures of aviation, but individual pilots manage to integrate to varying degrees. These degrees of integration are the focus of this section.

Women pilots, along with their male colleagues, are expected to integrate fully into the social activities of their workplace. As the views of male pilots reveal, women pilots can never fully integrate because they are still seen as different.

> Women will always be treated differently. I don't think you're going to change that much in an Air Force that's mainly men ... When it comes down to flying, standards will be the same. So treated differently socially (Neil).

Male RAF pilots commented that the presence of women pilots changes the atmosphere during social events and in the workplace. "It [women] makes it far more normal" (Ron). This RAF pilot stated that different subjects were discussed when women pilots were present. Other male RAF pilots commented that they swear less, tell less 'dirty' jokes and are more "sensitive" when female pilots are around, especially in the presence of senior officers. If women pilots are treated differently when socialising, they can never truly become 'one of the boys'. They will always be different and in a sense outsiders.

One female civil pilot contradicted this notion of different treatment to women pilots by male pilots when she stated,

> If you're the only girl they treat you as one of the boys, and they forget. And you think, I don't want to hear this conversation. But I suppose then I've got quite used to it (Andrea).

Another women RAF pilot mentioned becoming "hardened" to men's conversation. So it seems as far as women are concerned they are not treated differently. There may also be some difference between civil and RAF flying, in that in civil aviation

women pilots are treated largely as 'one of the boys' whereas in military aviation on occasion women pilots are sometimes treated differently than the men. It is also possible that the presence of senior officers or older pilots precipitates this different treatment, but at other times the women pilots are just treated like any other pilot.

Balancing private lives and integrating into the social life of their workplace causes some problems for pilots, particularly RAF pilots. For instance Dawn, a student multi-engine pilot, faced this of balancing her home life away from the squadron with participating fully in the squadron's social life. At the time of the interviews Dawn lived in married quarters on the base where she was doing here flight training, while her husband, also in the RAF, was living on another base 300 miles away. Dawn commented that, "I feel a little bit out on a limb out in the house, it would be different if [my husband] was here". Dawn found herself sleeping in the officers' mess quite often in order to participate in the social life of the squadron. Even though Dawn lived away from the mess she still had to be seen by both instructors and other course members to be fully part of the squadron's social life.

Another a female student multi-engine pilot, Harriet, was penalised both formally and informally for not participating in a course's social life. As the she said,

> When I was on [basic training] I did a lot of laddish things that we do ...
> Since I've been here [on multi-engine training] I've not done so much of it,
> mainly because I'm married now ... Certainly there is quite a big social
> aspect to the force, but I'm not very involved in that because it seems to me
> that they go to the bar, drink an awful lot of beer, be rude and throw up ...
> I mean I've got into a lot of trouble for not joining them on my reports etc,
> which surprises me because my course had never minded me - I think you
> find that the students are much more flexible about girls and about - They
> have a much more flexible attitude. So if the guys from my course wanted
> to go out somewhere. I might give them a lift, I might stay for a while, then
> I might leave and they'd be quite happy. If they ask me if I want to come
> out, they don't really mind or take offence if I do or if I don't. But the
> people writing the reports on you are very different, they want us to have a
> real course attitude and do a lot of things together. And I just find that the
> interests I have and the interests the boys have don't really go a long way to
> being similar. So I don't really do too much at all (Harriet).

Harriet explains that she received bad reports because she did not fully socialise with group. For instance decided not to go to strip clubs and night clubs with the other male pilots because it did not interest her. Whilst Harriet states that other students did not mind, in interviews with other students from her training courses, she was cited as a person that did not fit in and was not viewed as 'one of the boys', unlike many other female pilots. Harriet was viewed by other student pilots as someone you would work with, but you did not really want to be associated with them outside of work, because it would do your own image no good. In other words Harriet was not fitting in with the pilot role and behaviour of an RAF pilot. Harriet prioritised spending time at home with her husband whenever possible over spending time with her course and squadron. This was deemed as inappropriate behaviour for a student pilot.

Some male pilots equally have problems balancing their private and working lives. From this research I found that as RAF pilots get older they tend to live off the base and have social lives outside their squadron and the RAF. So they manage to achieve more of a balance once their status as a pilot is assured. However there is always the issue of location, with the RAF largely dictating where pilots are based. For instance one male RAF pilot commented that with constantly moving bases his wife had problems finding permanent employment. At the helicopter squadrons a number of pilots commented on the high divorce rates and the problem of spending many months a year away from home. These are all problems which pilots, male and female, have to accept and can have very little influence over if they desire to remain an RAF pilot.

Similar problems exist for civil pilots when balance work and home. Airline pilots work unsocial hours and can be away from home many nights a month. They have some say over their base airport but airlines can move pilots around. Several civil pilots, men and women, commented that personal relationships could be problematic. In general civil pilots do have more control over their private lives than RAF pilots.

For RAF pilots another aspect of integrating into the cultures of aviation is accepting the discipline of a military organisation. Part of this acceptance is, as stated above, giving up some personal freedom. It also involves not speaking your mind. As Ruth, a multi-engine pilot stated, "You have to be very careful what you say to other people". It does not pay pilots to criticise the organisation or other officers to anyone except maybe their closest friends. Harriet commented that you have to behave "the rank you are and not the person you are." In order words, a RAF pilot as an officer has to behave according to their pilot and officer roles rather than portray their own individual identity. There are penalties for not obeying this discipline. At one extreme a pilot could be court-marshalled and thrown out of the RAF. However as John's story demonstrates a pilot may just be transferred and in a sense demoted.

> I upset a few senior navigators, mainly because I was very experienced and more senior in years than most of the initiary pilots in those days. I tended to speak the truth and I upset a few navigators by telling them where they could put their bullshit, which didn't go very very well. So I got eventually removed from fast jet and transferred to become a multi-engine pilot (John).

John did not bond very well with the navigators on the fast jet squadron and spoke his mind, which did not fulfil the expectations for a fast jet pilot. So John was in effect demoted from fast jet to multi-engine flying, since fast jet pilots are seen as having more status within the RAF than multi-engine pilots. In this case John exercised his own individuality but at a price.

Many of these problems of integration do occur within the RAF but as demonstrated there can be similar problem in civil aviation. Individuals choose to some extent how much they integrate into the cultures of aviation. Yet there are limits to their individual agency, as individuality can have serious consequences for their career.

CONCLUSION

This chapter has focused more on the RAF than on civil flying when discussing the issues of integration for pilots into the cultures of aviation and becoming 'one of the

boys'. There are particular issues for women when it comes to fitting into the pilot roles and cultures. Women pilots experience extra visibility, especially female RAF pilots since they are small in number and the issue of women fighting in the military is still controversial. Women pilots, both civil and military, feel a need to prove they are capable of doing the job. They not only prove their flying and technical abilities, bit also that they have the 'right stuff' and can live up to expected behaviours.

Individuals adopt different strategies for coping with integration. Some women pilots try to be better than the men, others try to reduce their visibility. Some pilots, men and women, have difficulty reconciling organisational expectations with their own goals and opinions. There costs for not fitting with expected behaviours and ideas can be high, but individuals are free to make the choice of whether or not to accept the rules of integration.

From this research the problems of integrating were often much clearer for RAF pilots than civil pilots. To an extent this was due to the data available and in any future research examining more fully how civil pilots integrate into airlines would be a valuable comparison to the RAF data. It would also be valuable to understand more fully the differences for men and women between integrating into civil and military organisations.

Chapter 8

Conclusion

INTRODUCTION

The broad aim of this research was to further the understanding of how gender is performed within professional aviation. This final chapter reviews the findings and main conclusions of this research project, which have been explored in the previous chapters. In addition, it outlines what understanding the performance of gender within aviation adds to our knowledge of gender performance within the workplace. First this chapter discusses the extent to which this research fulfilled its objectives and research questions. It moves on to consider some of the main and most significant findings of this study, and continues with a discussion of what this research contributes to existing literatures. Finally this chapter highlights possible areas for future research.

OVERVIEW OF THESIS

At the beginning of this thesis three objectives were stated: to identify some of the cultures of aviation and the various aspects of gender within those cultures, to understand the role of individual pilots in constructing gender within those cultures, and to make this research of general use by comparing it with previous research on gender at work, technology and gender, other male dominated occupations, and gender in the military. These objectives were fulfilled through addressing empirically the research questions and through the analytical process. This section discusses the outcomes of the research questions, although it will first identify some of the cultures of aviation.

Cultures of Aviation

This research was an exploratory study of professional aviation involving interviews and observation of forty-nine British RAF and civil pilots at various stages in their careers. In the RAF, operational and student multi-engine, rotary and fast jet pilots were interviewed, and in a limited way observed. In the airlines and civil training colleges, experienced airline pilots, instructors, student pilots and manager-pilots were interviewed and observed. Examining these disparate groups allowed different aviation cultures to be identified, hence fulfilling the first objective.

There is an overall aviation culture, which includes the images surrounding aviation and allows any pilot to become a member of the "brotherhood" of aviation. All pilots, both professional and private, are part of this culture. Popular images of aviation also feed into this industry-wide culture; for instance, most aircraft are seen as symbols of power, with some being more potent than others.

Within professional aviation there are numerous work cultures. There is a distinction between the work cultures of military and civil aviation organisations; although some types of flying within those organisations can have similar cultures. For instance, multi-engine flying within the RAF can be quite similar to airline flying, so some of the working practices and notions of the 'right stuff' are quite similar in these two areas of aviation. They both value teamwork and co-operation amongst pilots, and both can allow a more stable home life for pilots, which proves particularly attractive to pilots with families and to many women pilots. Pilots in the RAF have to adapt to a competitive yet co-operative working environment, in which it is important to be seen to fully participate in all social activities. RAF pilots consequently have to accept greater discipline and a loss of freedom in their personal lives. Civil pilots also have to fit their personal lives around flying, but have more freedom in planning their own future careers. What is common amongst all these cultures of aviation are collective gender identities that reflect stereotypical forms of hegemonic masculinity. The exact nature of these identities varies, but they all revolve around portraying

stereotypical notions of masculinities. The various pilot roles embody these various masculinities.

Outcomes to Research Questions

This research started with four research questions, which have all been addressed with various outcomes. The first question asked, what is the 'right stuff'? As demonstrated in Chapter 4, images such as the 'ace', adventurer and aviatrix are still predominant in the cultures of aviation and popular culture in general. These images permeate into pilot and institutional notions of the 'right stuff', and are symbolically associated with certain forms of hegemonic masculinity. For example, they draw on masculinities that see men as the protector of women and children. The pilot is seen as a lone hero, battling extreme circumstances, taking risks and enjoying the excitement of danger. Pilots are influenced by these images and try to emulate some aspects of these gender symbols. Institutional notions of the 'right stuff' included strict physical and mental requirements, along with certain personality characteristics and aptitudes. Aviation institutions value leadership, competition, teamwork and management skills amongst potential pilots. Pilots have to adopt these characteristics if they wish to complete the training process. Pilots' own definitions of the 'right stuff' also reflect institutional notions. Other aspects of the 'right stuff' - as discussed in Chapters 5 to 7 - include fitting in with expected social behaviours at work and outside, bonding with other pilots and work colleagues, flying safely and within the limits, as well as perceiving flying as a relatively low risk activity. This is by no means a comprehensive definition of the 'right stuff', yet it does highlight how restrictive some aspects of the 'right stuff' can be for women. Notions of the 'right stuff' mostly revolve around stereotypical masculinity, which make it difficult for women in the occupation.

The second research question considered what are the cultures of aviation and how gender is constructed within those cultures. Gender is constructed through the interaction of symbols, identities and structures. This study has focused on how symbols and identities contribute to the production of gender within professional

aviation. The structures of aviation, such as the recruitment process, the physical restrictions of pilot selection, the training of pilots, the design of aircraft and the working environment, all contribute to constructs of gender within aviation. For instance, the design of aircraft cockpits still excludes a large proportion of women from entering military aviation and a smaller proportion from civil aviation (Weber 1997). The design of aircraft combined with the aptitude tests acts to exclude large numbers of women from professional aviation, particularly in the military. Images of aviation are one aspect of symbolic gender constructs within aviation; another is the symbiotic relationship between the aircraft and the pilot. An aircraft is more than just a machine to a pilot, it is a source of pleasure and control. Aircraft are symbols of power and can be used by pilots to demonstrate stereotypical masculine identities.

The pilot also has many identities to perform. The most prominent being the professional identity, but for RAF pilots there are also the officer and military pilot identities to portray. In their own ways these collective identities are gender constructs. For instance, the military pilot identity again reflects notions of hegemonic masculinity; man protecting home and country. However, there are contradictory elements to these identities. On the one hand, behaviours and ideas associated with stereotypical masculinities are promoted, for example, controlling emotions in public and telling sexual jokes. Conversely, behaviours and ideas associated with stereotypical femininities are promoted, such as bonding with work colleagues and helping team members. These gender constructs are by no means clear cut. Gender within aviation, as elsewhere, has a complex structure, which is constantly changing and developing.

The third research question asked if pilots found flying a thrill and the reasons why. From the research data, it became clear that all the professional pilots interviewed, at some point in their lives, found flying a thrill. Individual pilots gain different thrills and pleasures from flying. Some pilots find the freedom and control flying gives them excitement, others gain pleasure from the challenges flying presents. The risks and dangers associated with flying are also part of its attraction and excitement. On one side, the images of aviation and notions of the 'right stuff' demand that pilots

enjoy the risks of flying. Contrary to these images, aviation organisations demand that professional pilots take very few risks and perceive the dangers of flying as minimal. The pleasures and risks of flying are part of the 'right stuff', and pilot roles; they also embody aspects of gender. As discussed in Chapter 5, taking pleasure in the technical aspects of an aircraft and mastering an aircraft are ways of demonstrating power and hegemonic masculinity.

The final research question inquired how individual pilots affect constructions of gender within aviation. As seen in chapters four, five and six, aviation institutions and individuals within those institutions, such as instructors, have a great influence on how individual pilots construct their own gender identities. Flying instructors are an important element of the socialisation of student pilots into the cultures of aviation (see Chapter 6). Instructors and other senior pilots and officers influence how student pilots behave in, and outside, the workplace. For example, male RAF pilots will alter their behaviour around female pilots when a senior officer is present. Instructors can influence how a student pilot perceives their own identity and their ability to fit with the 'right stuff' and pilot roles. In one sense individual pilots affect constructions of gender within aviation through the transmission of collective gender identities. However individual pilots also influence those collective gender identities. For instance, some women RAF pilots changed organisational expectations of their role by refusing to participate in publicity. In other small ways individual pilots can influence gender constructs. For example, women pilots can influence male pilot behaviour just by being present at social functions. Their presence can mean that the male pilots feel less pressure to perform overt and stereotypical masculine identities. Hence, individual pilots both reinforce and maintain existing collective gender identities within aviation, whilst also challenging those constructs.

MAIN FINDINGS

Many findings have been outlined in this thesis and to some extent in the previous section. This section briefly highlights some of the main and most significant findings of this research project.

The first main finding is the importance of images in shaping constructions of gender, and in maintaining and changing those constructions. In Chapter 4 I discussed how certain images feed into notions of the 'right stuff' and these images have persisted from the very beginnings of aviation. These images help maintain the masculine associations of aviation, and maybe one reason why flying has remained a male dominated activity.

This research has also highlighted the contradictory nature of gender with aviation. There are many different constructs of gender, which are defined by individual pilots or aviation organisations. A pilot has to demonstrate stereotypical ideas of masculinities and femininities in order to fulfil various pilot roles. At the same there is an overriding dominance of particular forms of hegemonic masculinity, which influence all conceptions of gender within aviation. There are particular contradictions with gender in the military. For instance, women pilots have to demonstrate masculine traits, but also have to retain and demonstrate some stereotypical and conventional feminine characteristics - which male pilots are not required to perform. Hence, there can be particular problems for women who enter professional aviation in terms of contradictory gender identities.

It is not new to say that roles are situational and variable, yet also very stable (Becker et al 1961; Becker 1964; Barnes 1971). The most significant analytical finding of this research is that situational roles can still be a valuable tool for analysing gender. Roles are frameworks within which identities are shaped and performed. The professional pilot role is constructed by aviation institutions, images and symbols, and pilots. There are numerous pilot roles that vary according to types of flying and aviation cultures. However the professional pilot role is one of the most prominent

and the one which all professional pilots need to fulfil to some extent in order to succeed in their career. The significance of the situational role needs to be re-evaluated by sociologists and deserves to be more fully explored in other contexts.

Individual pilots can exercise some agency in performing roles. The identities pilots perform are not always in line with expectations, which can lead to problems for individuals and organisations. These challenges to roles can also lead to change. However there are formal and informal rules which pilots generally adhere to. These rules are important for the maintenance and stability of roles, yet are also part of the flexibility and fluidity of situational roles.

CONTRIBUTIONS OF THE STUDY

This study relates to sociological literatures on gender, technology and work. However its main contribution is to the literatures on male dominated occupations, rather than as anticipated at the outset of this study the gender and technology literatures. This section discusses some specific contributions to these literatures this research has made.

The notion of a role has been rejected by many sociologists, particularly in relation to gender in recent years (e.g. Connell 1985, 1987; Lopata and Thorne 1987; West and Fenstermaker 1995; West and Zimmerman 1991). Roles are still important to consider but a flexible conception is required. This research demonstrates how the concept of a situational role is still very applicable, especially when exploring the relationship between gender symbols, gender structures and gender identities. In this study I found that pilots adapt their behaviour and ideas to fit with various context dependant roles. They perform identities that fit with role expectations. Gender identities are part of these situational roles.

The discussion in chapter 4 demonstrates how situational roles can emerge and develop. The professional pilot role, for instance, has various different forms, both military and civil, which depend on the setting and situation. Airline and RAF pilots

are expected to sound and appear professional when in public. They are also expected to adhere to the rules, however those rules vary depending on the type of flying. Such situational pilot roles, which are also characteristically gender roles, are created through the interaction of symbols, for instance the popular images discussed in this thesis - such as the 'ace' pilot - and corporate images and ideals; structures, for instance organisational rules and regulations, particularly with regard to recruitment and pilot training; and identities, for instance individual pilot perceptions of how a pilot should behave, such as appearing sexually attractive or acting like a pilot from film or television. As highlighted in previous chapters, these roles also embody forms of hegemonic masculinity. These pilot roles are developed and maintained through the interaction between pilots, aviation organisations and popular culture. Hence we can see how examining situational roles allows us to explore how the three aspects of the gender triad interact to create gender roles and conceptions of gender. In this case, various forms of hegemonic masculinity are embodied in these pilot roles, which pilots feel they must conform with.

Situational roles also take us further than through exploring collective identities. I admit that not all aspects of the gender triad have been examined equally in this thesis, particularly structures, but this was not due to a theoretical rejection of structures. The data collected and my own personal interests meant that symbols and identities became the main focus of this thesis.

In addition, situational roles allow us to see how roles (gender and otherwise) and notions of hegemonic masculinity are maintained. Chapters 6 and 7 discuss the socialisation of individual pilots and their attempts to conform (or not) with the various pilot roles. Pilots undergo a long and often intensive training process. Like the medical students in Becker, Geer, Hughes and Strauss' study (1961), professional pilots assimilate notions of professional behaviour whilst also developing and adhering to informal rules of behaviour. Professional pilots, like the medical students (Becker et al 1961) come to identify with the attitudes and behaviours expected of their occupation. Instructors are an important link in the socialisation of student pilots. They attempt to pass on the behaviours and ideas associated with

professional pilot roles, such as confidence, flying safely and organisational loyalty. Instructors also help maintain the informal rules. They can be part of the social lives of pilots, thus crossing the boundaries between the formal and informal aspects of socialisation. A student pilot is expected to accept organisational cultures and perform the expected behaviours in the appropriate situation. For instance student pilots are expected to bond with other members of their course and become part of the "brotherhood" of aviation. They are expected to hide emotions and participate in banter. Women pilots particularly have to demonstrate these behaviours in order to be accepted and become 'one of the boys'. Thus we can see how one set of ideas and behaviours is transferred from one group to another. In the same way the behaviours and ideas associated with situational roles are passed from one group to another. Hence notions of hegemonic masculinity, which are embodied within certain roles, are maintained and perpetuated.

Situational roles are also flexible and can change. This study has highlighted how the actions of individuals can challenge accepted roles. Like Kanter's (1977) study on tokens, I found that women pilots experience visibility, polarisation and assimilation. Pilots are highly visible because they are rarely seen in the public eye. Women pilots are even more visible because they are also a minority and working in a male dominated occupation. As discussed in chapter 7, some women, and male, pilots exploit this visibility for their own advancement, whilst others fight to remain inconspicuous and become less visible, for instance by avoiding publicity. Thus in the RAF the role of the female pilot has changed slightly from being a source of publicity for the organisation to being someone who may avoid publicity. Other pilots challenge expected behaviours outside of work and try to avoid total emersion into the world of aviation. In this way individuals and groups can challenge and change roles. They can also choose whether to adhere to situational roles, which is part of their flexibility. These choices are linked performances of individual identities and gender. Hence, roles can be a useful analytical tool for analysing gender and identities, in and outside of the workplace.

As we have seen, Harding's (1986) definition of gender as constructed through symbols, identities and structures has proved to be evident within professional aviation. Gender symbols, structures and identities are part of the process through which professional aviation has remained male dominated. Gender identities and symbols help define certain occupations as male. However women can perform appropriate identities and succeed in such occupations at a cost. Performances of gender are important in maintaining existing sexual divisions of labour in the workplace. This thesis has shown how the gender triad of symbols, structures and identities interact to create situational gender roles which individuals perform. It has shown how individual identities can either challenge or conform to these roles. Gender within aviation is produced through the interaction of gender symbols, gender structures and individual identities. This interaction creates a framework of various roles which pilots have to fulfil to succeed in their occupation. Yet it is also this interaction, and the roles which are created, that help maintain the male dominance of this occupation. Thus this thesis shows how the gender triad, gender performance and situational roles all contribute to the male dominance of certain occupations and furthers our understanding of such occupations.

Gender cannot be separated from technology. Many sociologists and feminists have stated that gender and technology are mutually shaped and influence each other through design and usage (Berg 1996; Cockburn 1983, 1985; Faulkner and Arnold 1985; Harding 1986; Cockburn and Furst-Dilic 1994; Wajcman 1991; Lie and Sorensen 1996: Cockburn and Ormrod 1993). From this research the interrelation between technology and gender in design and usage has become clear, although this has not been the main focus or contribution of this thesis. Aircraft cockpits are designed around men and therefore are mainly used by men (Weber 1997). The recruitment and selection of pilots is closely related to the design process. The design of aircraft cockpits influences the physical restrictions that are placed on pilots during recruitment, hence leading to a large proportion of women being excluded from the selection process (see Chapter 4). The usage of aircraft is associated with masculinities through symbols and identities, and this association allows many men

to succeed in aviation more easily than women. Hence symbols and identities, along with structures, construct the interrelations between gender and technology.

However the main contribution of this thesis is not to the literatures on gender and technology, but to the literatures on understanding male dominated occupations. The occasions were gender and technology have been explored in this thesis have mainly contributed to furthering our understanding of how technology and gender interact to maintain male dominated occupations.

Some organisations have masculine values and assumptions embedded in their structures, cultures and practices. This thesis adds to the growing body of sociological research, which has been conducted in this area and which challenge assumptions about working practices and cultures (e.g. Cockburn 1983, 1985, 1991; Greed 1991; Roper 1994). In this thesis, we have seen how male and female pilots attempt to fulfil numerous roles which embody various masculine assumptions. For instance professional pilots are expected to hide their emotions in public and laugh off their problems through banter. They are expected to participate in group activities regardless of personal circumstances. In both civil and military flying, during the early years of a pilot's working life, one's family and personal life are expected to come second to one's career. These assumptions pose problems for both men and women pilots, but there are some particular problems for women.

This research also contributes to the body of literature, which examines the experiences of women in male dominated occupations (e.g. Cockburn 1983, 1991; Hacker 1990; Henwood 1994; Spencer and Podmore 1987). Women in such occupations develop various coping strategies to fit into their male dominated work environment. The main approaches adopted by women pilots, discovered from this research, are to demonstrate their capabilities and skills in the job and to fit in as much as possible becoming 'one of the boys'. Of course the extent to which these strategies were adopted by the women pilots depended on individual choices and priorities. For instance a woman pilot who wants to get to the top of her field may try to fit in harder and even out perform the men, than a woman who is happy to get

to a lower level of flying and may have other priorities in her private life. These findings are not so different from studies done on women, especially in engineering.

As with Kanter's study (1977) this research found that women pilots are often tested, formally and informally, to see if they have assimilated the ideas and behaviours connected with being a pilot. Banter is one way of testing women pilots but as MccGwire (1992: 78) and Cockburn (1991: 153) found it can also be a way of emphasising difference, as is clearly the case for some pilots (see chapters 6 and 7). Women pilots have to balance their visibility of being in a minority group at work with trying to fit in.

The literature on women in the military notes that women have historically occupied support roles in military institutions and that military institutions are dominated by a form of masculinity, which sees men as protectors of women (Hacker and Hacker 1987; Enloe 1983; Segal 1987). This form of military hegemonic masculinity was evident in this research. There are particular roles that pilots in the RAF have to perform which are based on this form of masculinity. Women and male pilots in the RAF have to perform in line with this hegemonic masculinity. The RAF is similar to other military institutions and women pilots have to deal with many of the same issues as women in the military all over the world. So to some extent this thesis has also contributed to the literature which explores women's roles within the military. At the very least this thesis reveals more information about the lives of men and women in the British military.

REFLECTION AND FUTURE RESEARCH

The nature of this research, namely an exploratory study, meant that many areas of useful and interesting future research have been highlighted. Many problems and shortcomings of this study also emerged during the period of this research. This section highlights both these problems and future areas of investigation.

There were several shortcomings in the research design of this project that have hindered the depth of analysis. One aim of the study was to get a broad cross section of professional aviation. However the data sample was in some ways too broad. The design of the research meant that during the interviews depth of questioning was sacrificed for breadth. A more focused and narrower study many have been a better approach, yet this would have been at the cost of the exploratory side to this study. A further problem with the interview data arose from the semi-structured nature of the interviews. The interviews with pilots were conducted mainly as conversations and had a very loose structure. This meant comparison between interviews was often difficult and topics, which became the main themes, were not always covered.

Throughout this thesis I have highlighted several areas which are worth future consideration. As stated in Chapter 3, private and leisure pilots would be an interesting group to investigate, since it is a hobby rather than a profession and there is a greater proportion of women participating in private aviation. The pleasures of flying may also be more apparent in private aviation. The main questions that arise are how the cultures of private aviation compare to cultures of professional aviation and how is gender constructed within those cultures. It would also be interesting to explore why more women enter flying as a hobby rather than as an occupation.

The wider issue of gender within military organisation is also worth consideration. For instance, investigating the experiences of other military personnel, male and female, within the RAF would highlight differences and similarities in the experiences and perceptions towards gender when compared to pilots. This type of research is crucial for the further understanding of gender and women within military organisations. Other male dominated occupational groups (e.g. navigators and ALMs) where there is a higher proportion of women present who have been permitted to do that job longer than women pilots, may reveal what the future holds for women pilots in terms of attitudes and changing gender identities. It is interesting to consider whether constructions of gender within military organisations are changing as more women enter the conventionally male dominated occupations.

Conducting further interviews with some of the same individuals who participated in this study could very useful, since the pilots would be at a different point in their careers. It would be worth seeing if they felt the same way about the excitement and fun of flying or if their attitudes to flying had changed, to explore the idea that flying loses its thrill as it becomes more routine, as suggested in Chapter 5. Changes in their personal and social lives could highlight changes in coping strategies. This would be one way of seeing if pilot roles, notions of the 'right stuff' and constructions of gender are changing over time.

In Chapter 4 the importance of gender symbolism within aviation was clear. Questions about the extent to which gender symbolism contributes to the continued male dominance of aviation remain and the influence it has on women entering professional flying. If is obviously important and is area which requires further investigation both in aviation and in other areas of work. More research needs to be conducted on the influence of gender symbolism on constructs of gender at work.

Instructors obviously are a crucial aspect of the socialisation process of student pilots into the cultures of aviation and pilot roles, as explored in Chapter 6. This research suggests that instructors have an important part to play in performances of gender identities by pilots. However this research was unable to determine the extent to which instructors influence gender performances. It would be useful for a future research project to follow student pilots closely through training and examine the role of instructors more closely. This would also highlight more about the socialisation process that pilots go through, which is critical for their development as professional pilots and for the performance of pilot identities.

One final area of future research could focus on changes in aviation technology and what this will mean for constructions of gender within aviation in the future. One question that arises is how are the RAF and other aviation organisations going to manage to relate to popular images, such as the 'ace' and adventurer, when modern aviation technology is moving towards pilotless aircraft. There will be a need for these organisations to reconcile the growing mismatch between aviation images and

the reality of the job, with developments in aviation technology that in effect turn the pilot into a computer technician. Pilot relations with technology need closer examination and the influence of technology on perceptions of the 'right stuff' and the roles of the pilot. This could be important for understanding similar skill changes in other areas of work.

CONCLUSION

In conclusion, this thesis has gone part of the way to fulfilling its aim of understanding the production of gender within professional aviation. It is clear that gender symbolism is an important factor in maintaining associations with hegemonic masculinities within aviation. Gender identities and roles are shaped through the interaction of individuals, organisations and images, not only in aviation but also in society as a whole. Yet this thesis is only a beginning to understanding gender within aviation, and is a small, but significant, contribution to further understanding male dominated occupations.

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Appendix A

Interview Schedules

**INTERVIEW SCHEDULE - WOMEN PILOTS
(PRELIMINARY STUDY)**

Background Information

How long have you been a pilot? Length in present position?

How long worked for present airline? / Have you held other flying/piloting positions?

Age?

Work Experiences

Description of a typical working day or couple of days *(Skills/indicators of attitudes)*.

Satisfactions and dissatisfactions with the job.

Social Interactions on the Job

Description of working relationships with male pilots

Relationships with other female pilots /Do they differ in anyway?
(Distinct differences/networking)

Relationships with work colleagues that are not pilots? *Especially other women (e.g. cabin crew)*

How do passengers react to you?

Becoming and Getting on as a Pilot

Training -   When? How? *(i.e. company sponsored/private flight school)*
                    Any other women on the course?

Minority groups often appear more visible to others - Do you feel being a woman has made you more visible or has it made no difference? *(Present and in the past)*

Being a pilot is not a conventional choice of career - To what extent do you feel you have had to struggle to get where you are today?

Was the military a choice when becoming a pilot?

Motivations and Influences

What were your ambitions as a teenager?
> *Attracted to piloting from early age or developed interest - why?*

What were the main influences in becoming a pilot?
> *Family attitudes to choice - were they supportive / did they provide role models. Looking for picture of family background.*
> *Looking to see if class is an influence / wider social influences*

Attitudes to Flight and Technology

What attracted you to flying / being a pilot? *(Technical interests)*

Find flying a 'thrill'/Gain pleasure from flying?

Reactions to images of pilots and flight
- heroic pilots / freedom of flying / being above the clouds

Changes in cockpit technology (greater automation). Feeling towards these changes?
> *Looking for attitudes towards technology and the aeroplane as an artefact*

How do you feel about other technologies in your life?

Private Life

Do you feel your job has affected decisions concerning partners / children?

Do you socialise with work colleagues / other pilots?

How do you deal with the boundaries between work and private life?

Hobbies / interests outside of work?

INTERVIEW SCHEDULE - PILOTS IN TRAINING

INTRODUCTION
Thank you for agreeing to do this interview. For my PhD I am investigating the role of the pilot, to see if changes are occurring in the occupation, as well as looking at what it's like to be a pilot and why people choose to be pilots. First of all, I can assure you that you will remain anonymous. To get an accurate record of this interview do you mind if it is recorded?

(At **CONCLUSION** thank for taking part and ask if there is any aspect of their experiences as a pilot that has not been covered and they would like to talk about?)

NOTES

I. BACKGROUND INFORMATION
Create picture of work history, education and family background.

When did you start flying?
- Career to date - roles held, length of time, other jobs, length of time in RAF/Airline...
- Leisure flying?
- Age, single/married/partner, children?
- Education - level, subjects
- Family - siblings, parents occupations, geographical origins

II. BECOMING A PILOT
Explore attractions and motivations to fly.

Why did you become a pilot?
(For quantitative data - ask main reason)
- External factors (social) - influence of family/friends/education/class/ethnicity/other?
- Family history of flying/support or not of family?
- External factors (symbolic) - media/films/images of flight?
- Childhood/teenage ambitions
- Attraction for thrills, pleasure, fun, danger, freedom (emotional responses)?
- Technical interests?

Why did you choose to enter the RAF/Airline?
(For quantitative data - ask main reason)

If civilian pilot   Did you consider the military as a career option?
- Why/why not?

If military pilot
- Issues of life style
- If women coping with being a minority   (Strategies?)
- Influence of images/family/friends etc

III. TRINING NOTES
Examining socialisation of trainees and culture of flight.

What training have you been through so far to become a pilot?
- Private flying school, company sponsored, RAF
- Any training prior to becoming professional pilot?
- *Military training* - the route taken?
- *(Formal) training details* - class size/male & female composition, what training has involved.

Did you have expectations of what the training would be like?
- If so, what were they?
  Did they change during the course of the training?

What have been the highlights/most enjoyable parts of the (formal) training for you so far? *(for quantitative data - ask main reason)*
- Why those parts? - Examples
- If none, why not?

What have been the worst/hardest parts of the (formal) training for you? *(for quantitative data - ask main reason)*
- Why? /What are the main challenges? - Examples
- *If woman*, any particular difficulties?
- *If military*, initiation rites?

How would you describe your relationships with other trainees during the training?
- Supportive/competitive/collaboration - examples
- Relationships with male/female trainees?

How would you describe your relationship with the instructors during the training?
- Positive/negative - why? - Examples
- Role models? /Socialise with instructors?

Do you meet with trained pilots?
If yes
- in what situations - social/formal?
- Nature of relationships?

If no
- would you like to?

Do you socialise with other flight crew outside of work/off duty?

If yes ▪ Who/How often/Kinds of activities/Nature of relationships/Importance & role? (Quantitative data-activities/importance)

If no ▪ Why/Any divisions?

For women:

Minority groups often appear more visible to others - Do you think that being a women has affected your career to date in any way?

- ▪ Promotion/discrimination?
- ▪ Affect on work relations/attitudes?
- ▪ Having to struggle or made it easier? /Role models?

IV. NATURE OF THE JOB   NOTES

What would you say are the most satisfying parts of being a pilot?
(For quantitative data - ask main reason)
- Pleasure/thrills/fun? - e.g.
- Technical enjoyment? - e.g.
- Danger/Risk? - e.g.
- Control/power? - e.g.

What would you say are the least satisfying parts of being a pilot?
(For quantitative data - ask main reason)
- Routine/regulations/mundane activities? - e.g.
- Paper work? -e.g.
- Danger/risk? -e.g.

Do you think your attitude to flying has changed during your training?
- How/why?
- Changed any preconceptions of flying that you may have held? Reality vs. expectations?
- Less/more fun/pleasure than it used to be?

What would you say are the necessary characteristics for a.... pilot?
- Differences/similarities between types of pilots?
- How would you describe yourself as a pilot?
- Gender traits?

What do you think of the aircraft that you currently fly?
- Attitude to the technology (instrumental vs. expressive)
- Trust in the design?
- Feelings about changes in aviation technology? (Glass cockpit)
- Attitudes to other types of aircraft that have flown or would like to fly?
- Attraction to certain aircraft/desire to fly certain aircraft?

There are now more women pilots than there used to be, what are your feelings about the changes that are occurring?
- Positive/negative - why? (Avoid politically correct answer)

For military:
There are now more women in the military than there used to be, what are your feelings about the changes that are occurring?
- Positive/negative - why? (Avoid politically correct answer)

Explore issue of combat
- How feel about going into combat?
- How feel about women going into combat?

V. LIFE OUTSIDE WORK   NOTES

Aim to understanding wider culture of aviation and the public and private spheres of life.

Has training to be a pilot had any affects on your life outside of work?
- Affects on family life/personal relationships?
- Affects on social life? (Unsocial hours, reactions of opposite sex, etc)
- Dealing with the boundaries between work and private life?
- Affected choices that have made?
(Children/marriage/partners/where live)

What interests/hobbies do you pursue outside of work?
(Quantitative data - ask types of activities)
- Related to flight or complete detachment?
- What books do you read? / Films do you enjoy? (Aviation related?)

What technologies do you use outside of work?
- Relations to domestic technologies?
- Fitting with stereotypes?

TO FINISH:

What are your plans for the future?

INTERVIEW SCHEDULE - OPERATIONAL PILOTS

INTRODUCTION

Thank you for agreeing to do this interview. For my PhD I am investigating the role of the pilot, to see if changes are occurring in the occupation, as well as looking at what it's like to be a pilot and why people choose to be pilots. First of all, I can assure you that you will remain anonymous. To get an accurate record of this interview do you mind if it is recorded?

(At **CONCLUSION** thank for taking part and ask if there is any aspect of their experiences as a pilot that has not been covered and they would like to talk about?)

<u>NOTES</u>

I. BACKGROUND INFORMATION
Create picture of work history, education and family background.

When did you start flying?
- Career to date - roles held, length of time, other jobs, length of time in RAF/Airline...
- Current position - job title, length of time, responsibilities
- Leisure flying?
- Age, single/married/partner, children?
- Education - level, subjects
- Family - siblings, parents occupations, geographical origins

- Issues of life style
- If women coping with being a minority (strategies?)
- Influence of images/family/friends etc

II. BECOMING A PILOT
Explore attractions and motivations to fly.

Why did you become a pilot?
(For quantitative data - ask main reason)
- External factors (social) - influence of family/friends/education/class/ethnicity/other?
- Family history of flying/support or not of family?
- External factors (symbolic) - media/films/images of flight?
- Childhood/teenage ambitions
- Attraction for thrills, pleasure, fun, danger, freedom (emotional responses)?
- Technical interests?

Why did you choose to enter the RAF/Airline?
(For quantitative data - ask main reason)
<u>If civilian pilot</u>
Did you consider the military as a career option?
- Why/why not?
<u>If military pilot</u>

III. TRAINING
Examining socialisation of trainees and culture of flight.

What training did you go through to become a pilot?
- Private flying school, company sponsored, RAF
- Any training prior to becoming professional pilot?
- *Military training* - the route taken?
- *(Formal) training details* - class size/male & female composition

Did you have expectations of what the training would be like?
- If so, what were they?
- Did they change during the course of the training?

What would you say were the highlights/most enjoyable parts of the (formal) training for you?
(For quantitative data - ask main reason)
- Why those parts? - Examples
- If none, why not?

What would you say were the worst/hardest parts of the (formal) training for you?
(For quantitative data - ask main reason)
- Why?
- What were the main challenges? - Examples
- *If woman*, any particular difficulties?
- *If military*, initiation rites?

How would you describe your relationships with other trainees during the training?
- Supportive/competitive/collaboration - examples
- Relationships with male/female trainees?
- Kept in contact with others? (Networking?)

What were your attitudes/feelings towards the instructors during the training?
- Positive/negative - why? - Examples
- Role models?

Did the training have any effects/impacts on you?
- How/why? - Examples
- Changed any preconceptions of flying that you may have held?

IV. WORK RELATIONS   <u>NOTES</u>

So that I can understand your job more fully, could you **describe your last flight/working day?**

- Skills involved
- Composition of flight crews that work with (male/female)/work on own? ▪ Contact with other flight crew/ground staff

How would you describe your relationships with other members of the flight crew?

- Amount of contact and relationships with male/female pilots
- Differing ages/ranks of other pilots/crew - possible effects on working relationships/differing attitudes/any hierarchical divisions?
- Good/bad relations why? - Examples
- Any differences in working with male/female pilots/crew?

Do you socialise with other pilots outside of work/off duty?

If yes ▪ How often/much?
- Who socialise with - male/female/mixed?
- Nature of relationships - friends/sexual/support groups?
- What sort of activities done?
- Importance of socialising with other pilots?

If no ▪ Why? (Personal choice/hierarchical divisions)

Do you socialise with other flight crew outside of work/off duty?

If yes ▪ Who/How often/Kinds of activities/Nature of relationships/Importance & role? (Quantitative data-active/importance)

If no ▪ Why/Any divisions?

IV. WORK RELATIONS (CONT.)

Do you have any contact with management/command staff/senior officers?

<u>If yes</u>   ▪ what is the nature of the contact?
         ▪ Importance/usefulness or not? Why?
         ▪ Policy issues?

For civilian pilots:

What sort of contact do you have with passengers?
         ▪ How do passengers react to you (especially for women)?

For women:

Minority groups often appear more visible to others - Do you think that being a woman has affected your career in any way?

         ▪ Promotion/discrimination?
         ▪ Affect on work relations/attitudes?
         ▪ Having to struggle or made it easier?
         ▪ Role models for others?

<u>*If military:*</u>

         ▪ Publicity
         ▪ Role in combat? Been on active duty?

V. NATURE OF THE JOB

What would you say are the most satisfying parts of being a pilot? *(For quantitative data - ask main reason)*
- Pleasure/thrills/fun? - e.g.
- Technical enjoyment? - e.g.
- Danger/Risk? - e.g.
- Control/power? - e.g.

What would you say are the least satisfying parts of being a pilot? *(For quantitative data - ask main reason)*
- Routine/regulations/mundane activities? - e.g.
- Paper work? - e.g. • Danger/risk? - e.g.

Do you think your attitude to flying has changed during your career?
- Less/more fun/pleasure than it used to be? Why? e.g.
- Reality vs. expectations?

Do you think the nature of flying/being a pilot has changed with developments in technology
- Glass cockpit issue - what is 'real' flying?
- Monitoring role vs. hands on flying

What would you say are the necessary characteristics for a pilot?
- Differences/similarities between types of pilots?
- How would you describe yourself as a pilot?
- Gender traits?

What do you think of the aircraft that you currently fly?
- Attitude to the technology (instrumental vs. expressive) - e.g.
- Trust in the design? - e.g.
- Feelings about changes in aviation technology? - e.g.
- Attitudes to other types of aircraft that have flown or would like to fly? - e.g.
- Attraction to certain aircraft/desire to fly certain aircraft? -e.g.

There are now more women pilots than there used to be, what are your feelings about the changes that are occurring?
- Positive/negative - why? (Avoid politically correct answer)

For military:
There are now more women in the military than there used to be, what are your feelings about the changes that are occurring?
- Positive/negative - why? (Avoid politically correct answer)

Explore issue of combat
- Have they been in an 'active' role?
- How feel about going into combat?
- How feel about women going into combat?

VI. LIFE OUTSIDE WORK

Aim to understanding wider culture of aviation and the public and private spheres of life.

Do you think that being a pilot has had any affects on your life outside of work?

- Affects on family life/personal relationships?
- Affects on social life? (Unsocial hours, reactions of opposite sex, etc)
- Dealing with the boundaries between work and private life?
- Affected choices that have made?
(Children/marriage/partners/where live)
- Examples of these.

What interests/hobbies do you pursue outside of work?
(Quantitative data - ask types of activities)

- Related to flight or complete detachment?
- What books do you read? / Films do you enjoy?
(Aviation related?)

What technologies do you use outside of work?

- Relations to domestic technologies?
- Fitting with stereotypes?

TO FINISH:

What are your plans for the future?

INTERVIEW SCHEDULE - ADDITIONAL QUESTIONS FOR PILOT INSTRUCTORS

Aim to examine socialisation process of pilots into 'culture' and identifying the 'right stuff'.

What is your role in the training process?
- Basic flying?
- Teaching skills of flying a particular aircraft?

Do you know what the drop out rates from the training are?
- What are they?

What would you say are the aims of the training you provide?
- How do you try to fulfil those aims?
- Do you think those aims are fulfilled?

If you had to describe what a 'successful'/'good' pilot, what traits would you list?
(e.g. coolness, courage, co-operation)
- Differences between military and civilian pilot?

During training what skills/characteristics do you try to teach pilots?
- Working on own/part of team? (Team management)
- Traits that try to 'bring out' of pilots?
- Systems management - relating to other 'systems'?
- Examples of how develop these traits?
- Differences in male and female skills/aptitudes?

Do you think that the role of the pilot changing?
- How?
- Influenced by gender/technology?
- Positive/negative changes?
- Changing role of military pilots?

If yes:
Do you think these changes have affected the training of pilots?
- In what ways or why not?

Why do you choose to become an instructor rather than an 'active' pilot?
- Reasons / Previous experience of flying?

INTERVIEW SCHEDULE - MILITARY NAVIGATORS/LOADMASTERS

INTRODUCTION
Thank you for agreeing to do this interview. For my PhD I am investigating occupations within aviation, to see if changes are occurring, as well as looking at what it's like to work in the industry and why people choose to enter it. First of all, I can assure you that you will remain anonymous. To get an accurate record of this interview do you mind if it is recorded?

(At **CONCLUSION** thank for taking part and ask if there is any aspect of their experiences as a [navigator/loadmaster] that has not been covered and they would like to talk about?)

NOTES

I. BACKGROUND INFORMATION
Create picture of work history, education and family background.

Can you tell me about your current position?
- Career to date - roles held, length of time, other jobs, length of time in RAF...
- Current position - job title, length of time, responsibilities
- Age, single/married/partner, children?
- Education - level, subjects
- Family - siblings, parents occupations, geographical origins

II. WORK HISTORY AND TRAINING
Explore attractions and motivations to enter aviation. Also examining socialisation of trainees and culture of flight.

Why did you become a [navigator/loadmaster]?
(Quantitative data - ask main reason)
- External factors (social) - influence of family/friends/education/class/ethnicity/other?
- Interest in flying? Desire to be pilot?
- Family history of flying/military? Support or not of family?
- External factors (symbolic) - media/films/images of flight?
- Childhood/teenage ambitions
- Attraction for thrills, pleasure, fun, danger, freedom (Emotional responses)?
- Technical interests?

Why did you choose to enter the RAF?
(Quantitative data - ask main reason)
- Alternatives considered?
- Issues of life style
- If women coping with being a minority (strategies?)
- Influence of images/family/friends etc

What training did you go through to become a [navigator/ loadmaster]?
  - Military training - the route taken?
  - Flight training - in military or outside?

Did you have expectations of what the training would be like?
  - If so, what were they?
  - Did they change during the course of the training?

What would you say were the highlights/most enjoyable parts of the (formal) training for you?
(Quantitative data - ask main reason)
  - Why those parts?
  - If none, why not?

What would you say were the worst/hardest parts of the (formal) training for you?
(Quantitative data - ask main reason)
  - Why?
  - What were the main challenges?
  - *If woman*, any particular difficulties?
  - Initiation rites?

How would you describe your relationships with other students during the training?
  - Supportive/competitive/collaboration
  - Relationships with male/female trainees?
  - Kept in contact with others? (Networking?)

Did the training have any effects/impacts on you?
  - How/why? (Examples)
  - Changed any preconceptions of job/military that you may have held?

III. WORK RELATIONS

So that I can understand your job more fully, could you **describe your last flight/working day?**
- Skills involved
- Composition of flight/ground crews that work with?
- Contact with other flight crew/ground staff

What would you say are the most satisfying parts of being a [navigator/loadmaster]?
(Quantitative data - ask main reason)
- Pleasure/thrills/fun?
- Technical enjoyment?
- Danger/Risk?
- Control/power?

What would you say are the least satisfying parts of being a [navigator/loadmaster]?
(Quantitative data - ask main reason)
- Routine/regulations/mundane activities?
- Paper work?
- Danger/risk?

For navigators:
What do you think of the aircraft that you currently work with?
- Attitude to the technology (instrumental vs. expressive)
- Trust in the design?
- Feelings about changes in aviation technology?
- Attitudes to other types of aircraft that have flown in or would like to fly in?
- Attraction to certain aircraft/desire to fly in certain aircraft?

How would you describe your relationships with other members of the flight crew?
- Amount of contact and relationships with male/female pilots
- Differing ages/ranks of other pilots/crew - possible effects on working relationships/differing attitudes/any hierarchical divisions?
- Good/bad relations why?
- Any differences in working with male/female pilots/crew?

Do you socialise with other flight crew outside of work/off duty?
If yes • How often/much?
- Who socialise with - male/female/mixed?
- Socialising with pilots?
- Nature of relationships - friends/sexual/support groups?
- What sort of activities done?
- Hierarchical divisions?
- Importance of socialising with crew?
If no • Why? (Personal choice/hierarchical divisions)

Do you have any contact with management/command staff/ senior officers?
<u>If yes</u> ▪ What is the nature of the contact?
  ▪ Importance/usefulness or not? Why?
  ▪ Policy issues?

For women: Minority groups often appear more visible to others -
Do you think that being a woman has affected your career in any way?
  ▪ Promotion/discrimination?
  ▪ Affect on work relations/attitudes?
  ▪ Having to struggle or made it easier?
  ▪ Role models for others?
  ▪ Publicity
  ▪ Role in combat? Been on active duty?

There are now more women in the military than there used to be, what are your feelings about the changes that are occurring?
  ▪ Positive/negative - why?
Explore issue of combat ▪ Have they been in an 'active' role?
  ▪ How feel about going into combat?
  ▪ How feel about women going into combat?

V. LIFE OUTSIDE WORK
Aim to understanding wider culture of aviation and the public and private spheres of life.

Do you think that being a [navigator/loadmaster] has had any affects on your life outside of work?
  ▪ Affects on family life/personal relationships?
  ▪ Affects on social life? (Unsocial hours, reactions of opposite sex, etc)
  ▪ Dealing with the boundaries between work and private life?
  ▪ Affected choices that have made? (Children/marriage/partners/ where live)

What interests/hobbies do you pursue outside of work?
(Quantitative data - ask types of activities)
  ▪ Related to flight or complete detachment?
  ▪ What books do you read? / Films do you enjoy?
  (Aviation related?)

What technologies do you use outside of work?
  ▪ Relations to domestic technologies?
  ▪ Fitting with stereotypes?

TO FINISH:

What are your plans for the future?

ADDITIONAL QUESTIONS FOR PILOTS

PROFESSIONAL IDENTITY

Part of being a pilot is maintaining a professional identity:

1. How would define that professional identity?
2. How do you maintain a professional identity?

IMAGE OF FLIGHT VS. REALITY

1. What images would you describe as being associated with being a pilot?
   - E.g. Top Gun/Fighter Ace – WWII

2. How does that image match to reality?

3. In what ways if any do you identity with that image?

RISK AND DANGER

1. Is the perceived risk/danger of flying something you consider?
   - How do you view that risk/danger?
   - Do they view flying as dangerous?

2. Have you ever been in a dangerous/risky situation yourself?
   - Has this affected your outlook on flying?
   - Have you known anyone that has been in an accident?

TECHNICAL INTEREST

1. Two different types of people are often identified with relation to technology; those who tinker and gain great pleasure from finding out how things work and those who have no particular interest in the technical workings but are happy to use the technology.

   - How do you feel you relate to these two types?
   - Does this apply at home and at work?

ASK WOMEN PILOTS

1. I have found that sometimes women pilots are described as being a bit macho or having 'masculine' traits.

   - How do you feel your personality relates to such images?
   - Do you feel you have any 'masculine' traits?
   - Do you feel there is any pressure to demonstrate certain traits in order to fit in with expected behaviour? Examples?

Appendix B

Profiles of Pilots Interviewed

Name	Age	Sex	RAF/ Civil	Position	Stage in Career	Stage in Training	Type Flying	Previously
Alan	29	M	RAF	Pilot	Operational		Multi-engine	
Alice	31	F	Civil	Pilot	First Officer		Turbo Prop	Airline Handling Agent
Amy	19	F	RAF	Pilot	UAS	UAS	Single Engine	
Andrea	33	F	Civil	Pilot	Trainee	BCPL	Turbo Prop	Computer Analyst
Ann	25	F	RAF	Navigator	Operational		Multi-engine	
Ben	23	M	Civil	Pilot	First Officer		Turbo Prop	worked at flying club
Carl	35	M	RAF	Navigator	Operational		Helicopter	Fast jet navigator
Cassie	42	F	RAF	ALM	Operational		Multi-engine	
Catherine	34	F	RAF	ALM	Operational		Multi-engine	
Cathy	?	F	Civil	Pilot	Trainee	CPL	Turbo Prop	
Charles	29	M	Civil	Pilot	Instructor		Turbo Prop	instructor at lower levels
Chris	55	M	Civil	Pilot	Instructor		Turbo Prop	RAF helicopter pilot
Dan	40	M	RAF	Airman	Operational		Helicopter	Puma Instructor
Dave	?	M	Civil	Pilot	Captain Instructor		Jets	Navy
Dawn	23	F	RAF	Pilot	Trainee	MEPT	Multi-engine	
Eliza	25	F	RAF	Pilot	Operational		Multi-engine	
Gary	55	M	Civil	Pilot	Manager/ Captain		Jets/Turbo Prop	RAF
Harriet	27	F	RAF	Pilot	Trainee	MEPT	Multi-engine	Electronics Engineer
Hazel	28	F	RAF	Pilot	Operational		Fast-Jet	

Name	Age	Sex	RAF/Civil	Position	Stage in Career	Stage in Training	Type Flying	Previously
Helen	20s	F	Civil	Pilot	First Officer		Turbo Prop	
Hugh	29	M	RAF	Navigator	Operational		Fast-Jet	
Ian	56	M	Civil	Pilot	Ground Instructor		Turbo Prop	RAF navigator
James	18	M	RAF	Pilot	UAS	UAS	Single Engine	
Jane	20	F	RAF	Pilot	UAS	UAS	Single Engine	
Jean	?	F	Civil	Pilot	First Officer		Turbo Prop	
Jimmy	30	M	RAF	Pilot	Trainee/ Experienced	ATT	Fast-Jet	
John	43	M	RAF	Pilot	Instructor		UAS	Fast jet pilot
June	30's	F	Civil	Pilot	Captain		Turbo Prop	
Keith	29	M	RAF	Pilot	Trainee	MEPT	Multi-engine	Fast jet pilot
Kurt	29	M	Civil	Pilot	Trainee	Just Finished	Turbo Prop	Electronics Engineer
Laura	?	F	Civil	Pilot	Trainee	IMC	Turbo Prop	
Louise	28	F	RAF	Pilot	Operational		Multi-engine	
Marie	25	F	RAF	Pilot	Trainee	ATT	Fast-Jet	
Mark	55	M	Civil	Pilot	Instructor		Jet (simulators)	Airline pilot
Martin	31	M	RAF	Pilot	Operational		Multi-engine	instructor
Mary	25	F	RAF	Pilot	Trainee	ATT	Fast-Jet	
Mike	32	M	RAF	Pilot	Operational		Multi-engine	
Morris	?	M	Civil	Pilot	Manager		Jets/Turbo Prop	RAF
Neil	26	M	RAF	Pilot	Trainee	ATT	Fast-Jet	
Norma	29	F	RAF	Pilot	Operational		Helicopter	
Patrick	31	M	RAF	Pilot	Operational		Multi-engine	
Paul	?	M	Civil	Pilot	Trainee	BCPL Upgrade	Turbo Prop	
Pete	45	M	Civil	Pilot	Instructor		Twin/Single Eng	RAF navigator/ VIP pilot
Peter	20	F	RAF	Pilot	UAS	UAS	Single Engine	
Phil	34	M	RAF	Pilot	Operational		Helicopter	
Rebecca	21	F	RAF	Navigator	UAS	UAS	Single Engine	
Rick	23	M	RAF	Pilot	Trainee	MEPT	Multi-engine	
Robert	?	M	Civil	Pilot	Trainee	Airline Conversion	Turbo Prop	Canadian Air Force
Rod	28	M	Civil	Pilot	Trainee	BCPL Upgrade	Turbo Prop	

Name	Age	Sex	RAF/ Civil	Position	Stage in Career	Stage in Training	Type Flying	Previously
Ron	23	M	RAF	Pilot	Trainee	ATT	Multi-engine	
Rosie	28	F	RAF	Navigator	Operational		Multi-engine	
Ruth	25	F	RAF	Pilot	Trainee	MEPT	Multi-engine	
Sally	28	F	RAF	Navigator	Operational		Multi-engine	
Sam	26	F	RAF	Pilot	Trainee/ Instructor	ATT	Fast-Jet	
Sarah	28	F	RAF	ALM	Operational		Multi-engine	
Sid	39	M	Civil	Pilot	Captain Instructor			shopkeeper
Sophie	33	F	RAF	Navigator	Operational		Multi-engine	
Steve	31	M	RAF	Pilot	Operational		Helicopter	
Susan	27	F	RAF	Pilot	Operational		Helicopter	
Tara	29	F	RAF	Pilot	Operational		Multi-engine	
Will	37	M	RAF	ALM	Operational		Multi-engine	

Appendix C

RAF Personal Qualities Assessment Summary

Quality Categories	Included in Category
Manner	Alertness, Composure, Confidence, Courtesy, Enthusiasm, Humour, Maturity, Perseverance, Poise, Polish, Reaction to Criticism/Pressure, Sense of Occasion, Sincerity, Tact, Tolerance.
Powers of Expression	Animation, Conviction, Diction, Effectiveness, Fluency, Logic, Lucidity, Persuasiveness, Projection, Vocubalary.
Activities/Interests	Commitment, Compatibility, Cultural Balance, Dedication, Determination, Enterprise, Independence, Initiative, Involvement, Range, Responsibility, Sense of Purpose, Social Awareness, Tenacity.
Academic Level/Potential	Attitude to studies, Determination, Ease of obtaining, Further Potential, Perseverance, Qualified.
Physical Level/Potential	Adventure, Agility, Attitude to Fitness, Courage, Determination, Endurance, Energy, Frequency of Exercise, General fitness, Physical Presence, Prowess, Ruggedness.
Awareness	Awareness of military/current affairs, Breadth, Depth, Knowledge, Maturity of views, Originality, Own opinions, Range, Reasoning ability.
Motivation	Conviction, Convincing, Enthusiasm, Preparation, Sincerity, Substantiation.
Teamwork	Ability to listen, Co-operation, Determination, Effort, Enthusiasm, Group Compatibility, Initiative, Involvement, Physical Ability, Reliability, Support, Willingness, Willingness to volunteer.
Leadership Potential	Assertiveness, Control, Decisiveness, Delegation, Determination, Drive, Dynamism, Effort, Enthusiasm, Flexibility, Influence, Motivating ability, Perseverance, Presence, Receptiveness, Urgency
Effective Intelligence	Comprehension, Intellect, Judgement, Mental Agility, Mental Capacity, Numeracy, Practical Perception, Resourcefulness, Reaction to Pressure, Theoretical Perception.