The Impact of Human Factors on 
*Ab Initio* Pilot Training

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This article examines critically the power effects of a branch of psychology called Human Factors within the context of commercial aviation. A review of the aviation literature highlights the significance of Human Factors and its relevance to the recruitment and training of *ab initio* pilots. However, research in the field is criticized for failing to account for existing power relations and the potential effects of a new discursive format. This article uses the concept of discourse associated with Michel Foucault to analyse empirical data from interviews with individuals involved in *ab initio* pilot training at a European flying college. The analysis illustrates how staff at the training college use the rhetoric of Human Factors to enhance their own contribution and status, without fundamentally changing existing practices. Although this reinforces existing power relations, the Human Factors discourse also potentially empowers a different set of management employees. By illustrating the conflicting values and interests of two sets of managers and trainers at the college, the article is able to demonstrate the negative effects of the new discursive format on male *ab initio* pilots. It also discusses attitudes to female pilots, contributing to the debate about the ability of management discourses to promote gender equality within commercial organizations.

*Keywords:* pilots, women, masculinity, gender, human factors discourse

**Introduction**

Human Factors emerged within the commercial aviation industry in the late 1970s, taking its name from a branch of psychology popular during the early part of the 20th Century that addressed issues of efficiency and employee welfare. The new form of Human Factors was designed to ensure the safe operation of the aircraft. It specifically aimed to develop airline
managers’ understanding of flight crew behaviour and design training, together with management practices to improve airline safety. Human Factors taught that commercial airline pilots were expected to work well within a team and communicate effectively, as well as to possess the skills to operate the aircraft safely. This meant taking appropriate decisions, managing all the resources available (such as the ground staff, pilot colleagues and the cabin crew) and dealing with stress (Besco, 1991; Company Safety Services, 1991; Lewis et al., 1990). In this sense, Human Factors defined the qualities demanded of the airline pilot in terms of managerial skills (Wheale, 1988). It was argued that Human Factors training improved safety by increasing the likelihood of the crew (namely the captain, co-pilot and cabin crew) reporting potential danger signals, such as warning lights, unusual noises and smoke. Human Factors encouraged the flight crew to admit to mistakes or uncertainty about instructions. In emergencies, they were expected to keep calm, consider alternative scenarios, make the right decision and make the best use of individuals’ abilities, regardless of rank or role (Green et al., 1991; Lewis et al., 1990).

The emergence of Human Factors within commercial aviation significantly altered the approach to pilot training and airline safety. Classroom training courses called cockpit resource management (CRM) were introduced to teach the principles of Human Factors. CRM was initiated by KLM in Europe and United Airlines in the USA, before becoming standard across the major airlines (Endres, 1992). During these courses, reconstructions of accidents, some fatal, highlighted instances where a warning from the co-pilot or cabin crew had been ignored by a captain unwilling to accept advice or to admit being unsure of how to handle a situation. In addition, a new simulator training programme called line oriented flying training (LOFT), was introduced to allow flight crews to practice their cockpit management skills on a series of simulated failures (Endres, 1992; Smith, 1988).

Human Factors had a significant impact on the selection and training of new pilots during the 1980s. Many major airlines sponsored ab initio pilots (that is, candidates with little or no experience of flying) to study for a commercial pilots licence at privately run training or flying colleges, often located some distance from the airline. The recruitment criteria specified that potential trainees (known as cadets) should have the personality to deal with stress and human relations issues, as well as the outlook to make flight deck operations an ‘enjoyable experience’ (Wheale, 1988). In addition, Human Factors training activities (such as two-crew simulator training) were incorporated into the college curriculum, which included topics such as weather conditions, navigation and air law (Smith, 1988).

This article examines the effects of Human Factors knowledge and practices on relations between staff and pilots at a European flying school. Although there have been studies of pilots (such as Mills, 1998; Sloan and Cooper, 1986) and cabin crew (Hochschild, 1983), this is the first empirical analysis of ab initio pilots in commercial aviation. As a result of representing
Human Factors as a discourse which creates and shapes our understanding of pilot behaviour (Foucault, 1977), this article contributes to the literature on the social and political character of the management sciences, psychology (Aitken et al., 1995; Barrett, 2002; Burrell and Morgan, 1979; Hollway, 1991) and Human Factors within the context of commercial aviation (Beaty, 1993; Perrow, 1983). This article also contributes to the work of critical and feminist authors on the gendered nature of organizational practices and approaches (Calas and Smircich, 1993; Davey and Davidson, 2000; Henriques et al., 1984; Hollway, 1989; Knights and Morgan, 1991; Maile, 1995; Morgan, 1992; Vieira da Cunha and Pina e Cunha, 2002).

**Foucauldian analysis**

For mainstream psychologists, the incorporation of Human Factors knowledge and practices into the aviation industry is a progressive step in the interests of psychologists, managers and pilots alike. This view supposes that Human Factors is a science of absolute and invariable truths which leads to a more accurate view of crew behaviour. On the other hand, Foucault and other discourse theorists do not regard disciplines as an objective way of looking at the world, free from supposition. Rather, they would perceive a scientific discipline as a set of ideas and practices (that is, a discourse), which shape and create our perceptions of behaviour and performance (Hollway, 1991) and, in so doing, has materiality (Harlow and Hearn, 1995).

Moreover, the knowledge generated from a scientific approach is not neutral, but privileges certain individuals and punishes others for non-conformity. Human Factors is thus a ‘discourse in power’ (Bullock and Trombley, 1988). In Foucauldian terms, power produces knowledge, meanings, values and subjectivities (Foucault, 1977, 1979). For those who accept and conform to the logic of the discourse, it provides an opportunity to expand their sense of identity and to enhance their own contribution and importance. At the same time, it devalues alternative ideas and practices and ‘disables’ certain actors (Knights and Morgan, 1991). Thus, association with a particular discourse is a means through which individuals seek both to understand and control human behaviour (Bullock and Trombley, 1988). In this respect, Foucault was scathing of psychological professions that encouraged patients to explore sexual secrets which might hold the key to their mental and emotional well-being (Lechte, 1994). He likened psychoanalysis to a process of confession where the patient produces a narrative for interpretation by someone in a position of authority (Spargo, 2000).

Foucault also draws attention to new disciplinary practices accompanying changes in institutions such as the prison, the school and the hospital. The inmate, the student and the patient are expected to control their gestures and movements, and conform to a rigid timetable of activities (creating ‘the docile
body’). Such control cannot be achieved without detailed and relentless surveillance. For Foucault, Jeremy Bentham’s design for the Panopticon — a model prison — captures the essence of disciplinary society. The Panopticon isolates the inmate by shutting him off from effective communication with his fellows and ensures his constant visibility to those in power. A state of consciousness and visibility assures the automatic functioning of power — ‘each becomes his own jailer’ (Bartky, 1988, p. 63).

In *The History of Sexuality*, Foucault (1979) examined homosexuality, arguing that ‘homosexuality’ as a category emerged out of a particular context in the 1870s, having cultural and historical origins, rather than a biological basis. In this sense, sexuality is not a natural feature or fact of human life, but a constructed category of experience that is reproduced through institutions and discourses and thus changes over time (Spargo, 2000).

Post-structural feminists endorse the notion that categories and identities are socially constructed, rather than essential (Wright, 2000) and have applied Foucauldian concepts to the exploration of gender. Bartky’s account, for example, shows how disciplinary practices produce a body which in gesture and appearance is recognizably female. Other studies demonstrate how parents, partners, colleagues, and so on, enforce the disciplinary regime (Davey and Davidson, 2000; Gordon, 1991; Maddock and Parkin, 1994; Marshall, 1984).

It should be noted, however, that Foucault treats the body as one — he does not acknowledge that men and women’s experience differ or that women bear a different relationship to institutions. According to Bartky, the disciplinary power associated with femininity is often ‘unbounded’ (1988, p. 75) by institutions. It is rather ‘everywhere and it is nowhere’ (1988, p. 74). The absence of formal institutions may lead to the impression that the attainment of a feminine countenance is sought naturally or voluntarily. In fact, it may be encapsulated in many things — a rite of passage, a way to triumph over other women in the job market and an aesthetic.

This article uses a Foucauldian analysis to determine whether Human Factors represents a new way of thinking and acting within aviation, and to examine the extent to which it has been incorporated into everyday talk, text and behaviour. The article also examines the relationships between different professional groups and, through reference to feminist accounts, between men and women. Power relations are constructed from reactions to local circumstances and from an understanding of social and institutional relations (Ball and Carter, 2002).

**Human Factors as discourse**

Human Factors represents a new approach to airline safety and is presented as an alternative to technical approaches. Technical discourses came to the
fore in the 1950s when, encouraged by the success of the first space mission, governments and business used technology to build alliances with other countries. Indeed, Concorde was an example of such a project (Wolmar, 1993). However, engineers successfully improved the reliability of technical components and systems and airlines saw a dramatic decline in the number of airline accidents per million departures from the 1960s to 1970s (Company Safety Services, 1991; Endres, 1992). Although airlines continued to invest in improving safety for fear of the publicity and legal costs incurred as a result of an accident (Beaty, 1993), the potential benefits of further investment in technological research and development declined (Company Safety Services, 1991) and the engineers lost their strategic foothold within the industry.

Support for Human Factors has enabled psychologists to contribute to a whole range of activities within commercial aviation, extending from airline safety into areas such as airline security (Reigold, 1992) and aircraft design (Hughes, 1992; Phillips, 1992). This is not the first time that psychologists have contributed to aviation. Psychologists selected pilots for the British army in World War I and World War II (Hollway, 1991) and for the first space mission (Wolfe, 1979).

Some airline pilots have positioned themselves within the Human Factors discourse when evaluating their own performance. Captain Haynes (1991), for example, highlighted the importance of Human Factors principles (such as communication with emergency ground personnel, co-operation between flight crew and preparation) in increasing the passenger and crew survival rate during a catastrophic mechanical failure on his aircraft.

There are contrasting views as to the effect on flight crew of the shift in the airline’s emphasis from technical considerations towards the psychology of the machine operators (Phillips, 1992): Beal (1990) suggests, for example, that Human Factors training potentially raises the status of pilots within a commercial airline by highlighting the importance of their behaviour, while Perrow (1983), on the other hand, claims that it undermines the contribution of the machine operator by increasing the likelihood of accidents being attributed to ‘pilot error’. From a Foucauldian perspective, it could be argued that Human Factors extends discipline and control from technical competencies onto psychological factors (Rose, 1990; Townley, 1994).

The introduction of the Human Factors discourse means that pilots have to conform to traditional notions of ‘good management’, in the sense that they should be rational decision-makers and display qualities of both leadership and teamwork, such as a willingness to consult with colleagues (Besco, 1991; Company Safety Services, 1991; Lewis et al., 1990). The proponents of Human Factors argue that the stereotypical ‘masculine pilot’ profile is unsuited to the modern flight deck, where pilots have to monitor computer systems, rather than handle the aircraft manually.

A masculine ethos may be considered as corresponding to a worldview in which status and independence are paramount, while a feminine ethos...
corresponds to a worldview where connection and intimacy are paramount (Viera da Cunha and Pina e Cunha, 2002). Efforts by pilots to maintain their own sense of status and independence have been linked with airline accidents, as pilots have been unwilling to admit to problems or confusion over location. Human Factors training addresses this issue by encouraging consultation, teamworking and rational decision-making (Besco, 1991; Company Safety Services, 1991; Lewis et al., 1990).

While teamwork would appear to encourage connection, it is primarily a method of gaining information and therefore making better-informed decisions. In addition, the captain–co-pilot relationship is clearly hierarchical, with the captain invested with the status and authority to make the final decision in most situations. However, Human Factors does present a different form of masculinity compared to that originating from test pilots’ endeavours to break the sound barrier in the 1940s and 1950s (Wolfe, 1979).

The captain has traditionally been viewed as a ‘supremely confident hero’ concerned only about himself (Mills, 1998). This reflects the fact that the test pilot’s whole life was dedicated to pushing himself and his machine to the limits — 23 per cent died in the attempt to break the sound barrier. Evenings were spent driving fast cars, drinking with pilot colleagues and recounting stories of recent exploits. The masculine code forbade pilots from boasting, and self-deprecating humour was used to indicate skill and fearlessness. Successful test pilots survived; others were considered failures, as were those who admitted to having made a mistake or who asked for help. Death was always the fault of the pilot, as a ‘good pilot’ used his superior skill to counteract problems of, say, a technical nature. Test pilots considered themselves superior to all other types of pilot and civilians — both male and female — and as operating on a different level in term of commercial values (Wolfe, 1979).

Commercial aviation recruited pilots from the military and therefore shared some of its culture, in terms of its male workforce, wartime symbolism and company practices. In British Airways, the image of the pilot started to change during the 1930s, with the formation of Imperial Airways and the need to prevent strikes by flight crew. Pilots were encouraged to view themselves as professional team members, committed to the company and its passengers (Mills, 1998). In addition, deregulation in the 1980s resulted in an orientation towards customer service, customer care and ‘people skills’ (Bruce and Moul, 1988; Young, 1989).

Masculine/military, technical and Human Factors discourses have different characteristics, summarized in Table 1. But how is a new discourse such as Human Factors played out within a local context and what are its effects on existing power relations? This question is addressed in relation to training for recruits with little or no previous experience of flying (ab initio pilots).
Table 1: Summary of discourses within commercial aviation

<table>
<thead>
<tr>
<th>Discourses</th>
<th>Origins</th>
<th>Priority</th>
<th>Practices</th>
<th>Subjectivity</th>
<th>Analysis of accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masculine/military</td>
<td>Military</td>
<td>To enhance the status of military pilots</td>
<td>Informal, such as conversations and drinking</td>
<td>Macho Individualistic No mistakes/fear Superior</td>
<td>Accidents indicate the pilot’s poor character or lack of skill</td>
</tr>
<tr>
<td>Engineering</td>
<td>Engineering discipline</td>
<td>To improve airline safety</td>
<td>Design of cockpit Improved aircraft components</td>
<td>Machine operator</td>
<td>Accidents blamed on the technology or the user</td>
</tr>
<tr>
<td>Human Factors</td>
<td>Psychology discipline</td>
<td>To improve airline safety</td>
<td>Training Safety culture Pilot selection</td>
<td>Leader Team member Admits mistakes Rational</td>
<td>Accidents due to ‘human error’</td>
</tr>
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</table>
Human Factors and *ab initio* pilot training

The author conducted a study of an international airline and a flying college for *ab initio* recruits based in Europe. This college was chosen because of its links with the airline (which, between 1985 and 1991, sponsored a significant proportion of the college’s intake) and its commitment to providing training in Human Factors. This college provided a 16–18 month course for applicants from all over the world. By helping *ab initio* pilots attain a commercial pilots licence, the flying college also represented a route through which women could be recruited into commercial aviation, following the introduction of equal opportunities legislation (Davey and Davidson, 2000).

The data emerged from 67 formal interviews with staff and pilots from both the airline and the college. The interviews at the college were with (i) instructors, responsible for flying and academic training; (ii) staff located at the hall of residence, responsible for *ab initio* pilots’ pastoral care and general welfare and (iii) the *ab initio* pilots, known as cadets. The interviews at the airline were with male and female pilots, many of whom had been trained at the college. Although interviews were held with 23 women pilots, it should be noted that less than two per cent of pilots in the airline were women and courses at the training college typically included two women. In addition, informal discussions were held with approximately 20 cadets aged between 18 and 25 years old throughout their training programme. These discussions allowed a greater understanding of the trainees’ individual experiences at the college and its hall of residence.

The significance of Human Factors to *ab initio* pilot training and the changes in college practices associated with the introduction of Human Factors are discussed in relation to interactions between (i) the airline and the flying college; (ii) staff at the college; (iii) the male *ab initio* pilots and their superiors and (iv) the female cadets and their superiors.

Human Factors and the airline

In published articles (Endres, 1992; Nicholson, 1991; Wheale, 1988), company reports (Smith, 1988; Wheale, 1988) and the interviews conducted for this study, airline personnel state the relevance of Human Factors to the selection and training of *ab initio* pilots. Since some of the major airlines provide sponsorship for the training of *ab initio* pilots (Mills, 1998) and, at this college, are its major customers, it is in the interests of the colleges to ensure that they meet the airlines’ requirements. Indeed, it could be argued that the future prosperity of the college depends as much on its image as on its training costs and course failure rates.

Analysis of the interviews demonstrated the way in which instructors create a favourable image of the course, using the rhetoric of Human Factors.
Basically, two approaches are used. Firstly, the instructors imply that their attitudes and practices are similar to, and thus consistent with, those of the airline. In his description of the course, for example, one instructor drew attention to the college’s Human Factors simulator training, LOFT. He also highlighted how the college and the airline demand that pilots follow standard procedures:

First of all, we design a course to meet Civil Aviation Authority (CAA) requirements. Crew co-operations, LOFT are very much as a [airline] captain. We have a checklist and actions must be carried out in accordance with this. Sorties must be done in a rational, sensible way. (Instructor)

Secondly, instructors attempt to play down similarities with the military when these are perceived as damaging the reputation of the college. This occurs when the practices and attitudes of the military are believed to conflict with current thinking in commercial aviation. For example, one of the instructors explained that the college has strict rules forbidding the types of illegal flying manoeuvres admired by test pilots (Wolfe, 1979) which, in contrast to the military, have to be enforced:

In the RAF they would get hauled up for it, but secretly they would be thinking, crikey, just the sort of chap we need. We’ll send him off to the Gulf and he’ll be a really good, aggressive pilot. (Flying instructor)

By drawing attention to the college’s similarities with the commercial airlines and its differences from the military, the instructors are able to project a favourable image of the flying school to outsiders. These strategies counter criticism of the college on the grounds that its methods are unsuited to the commercial environment. Instructors at the college generally feel vulnerable to such criticism from the airlines because approximately 80 per cent of its staff are ex-military.

The construction of college practices in a manner consistent with the values espoused by the commercial airlines is not simply a question of impression management for the benefit of the airline clients, it is also an image that has to be managed in relation to those within the aviation industry and the general public (Knights and Morgan, 1991). In their role as both pilots and trainers of pilots, the instructors have a vested interest in maintaining the status of commercial airline pilots as a professional group. Whilst there is some debate whether Human Factors raises or undermines the contribution and status of pilots (Beal, 1990; Beaty, 1993; Perrow, 1983), interviews with the flying instructors illustrate how the new discourse is employed to enhance the pilot’s role. One of the flying instructors, for example, described the job of a pilot within the terms of the Human Factors discourse by drawing attention to its managerial nature, but emphasized the special skills required by a manager of an aircraft compared to the manager of an office:
It’s more and more becoming a management job. It’s a question of managing your resources, your time, managing this, that and the other . . . It’s like being an office manager. You quickly come to recognize where everything is, but unfortunately the office is moving at 600 m.p.h. What is special is the ability to cope in changing circumstances. (Flying instructor)

Thus, whilst Human Factors may have the potential to undermine the status of pilots in relation to other professional groups (Perrow, 1983), it can also be used to reinforce existing power relations within aviation where, traditionally, pilots have been positioned as superior to other non-flying professional groups (Wolfe, 1979).

**Human Factors and staff relations at the college**

Prior to the mid-1980s, a pilot’s technical knowledge and skills and his masculine behaviour and identity were the criteria against which he was evaluated (Wheale, 1988). However, the shift in emphasis away from pilots’ technical knowledge and skills towards their attitudes and behaviour challenged this practice. In particular, it has created a set of circumstances where those with insight into pilots’ personalities and behaviour can now exercise power. In the airlines, for instance, the emergence of Human Factors has legitimized intervention from professionals without first-hand experience of flying a jet airliner (like behavioural scientists) in the selection, training and management of flight crews (Green et al., 1991; Wheale, 1988).

The instructors responsible for the cadets’ flying and academic training control the influx and standard of new pilots to the airline. In conjunction with airline personnel and the Civil Aviation Authority (CAA), instructors and examiners at the college effectively act as gatekeepers to the airline: a position of power sustained by the importance that airlines place on information regarding cadets’ technical abilities. As a result, the contribution and status of the instructors elevates them above those other members of staff at the college responsible for the welfare of the cadets.

Interest in Human Factors created a set of circumstances where staff responsible for cadet welfare attempted to improve their status within the college through their association with the new discourse. These staff tried to enhance their own contribution on the grounds that their location at the hall of residence gave them special access and insight into the cadets’ attitudes and behaviour. This insight, they claimed, is denied the flying instructors because the more ‘formal’ atmosphere at the college as opposed to the residence ‘masked a person’s true nature’. Consequently, the cadets ‘present themselves differently to the instructors compared to other people’. Of course, living quarters in military institutions were always within the public domain because personnel live at their place of work and sometimes share...
dormitories. However, trainees in commercial flying do not normally experience such conditions.

There is evidence that staff at the residence hold different views from some of the militarily-trained instructors. Within military and masculine discourses drinking and drunken behaviour is said to confirm an individual’s status and masculine identity and demonstrates solidarity with other men (Lyman, 1987). Drinking to excess is thus encouraged (Wolfe, 1979). These are views to which the instructors, to some extent, subscribe. By contrast, psychologists see the consumption of large amounts of alcohol as a sign of stress and mental instability (Sloan and Cooper, 1986). In general, staff at the residence concurred with this latter view. For example, one interviewee responsible for cadet welfare stated:

There are a number of signs that people are under stress and we start to see abnormal signs. In which case, I would get alongside them [the cadet] and present a picture to them of someone who is going off the rails. If, for example, they were drinking a lot then I would talk to them about the consequences of that to them. There is a fine line between what is acceptable and not acceptable. (Staff at hall of residence)

As a result of such beliefs, the staff at the residence feel that drinking by the cadets should be discouraged and controlled by both example and rule. They expect the instructors to concur with this view and to set a good example by moderating their own drinking, as this member of staff explained:

If you say to someone here [at the college], ‘you shouldn’t drink’, then you must live up to that. Now, if I’m your flying instructor, then I get drunk, say call me [by my first name], I get completely drunk and make an arse of myself. Now this person [the cadet] puts you on a pedestal. (Staff at hall of residence)

The empowerment of staff at the residence within the Human Factors discourse potentially enables them to challenge the authority of the instructors through the expression of alternative values and the subsequent development of new rules and practices. On one occasion, the instructors failed to set an appropriate example or to control the behaviour of the cadets and staff at the hall of residence felt obliged to intervene, despite the presence of instructors:

One day I noticed a guy [a cadet] standing on top of a ledge and they were telling him to do a backward somersault. They [the other cadets] were perhaps too drunk to catch him. I went in like a bear with a sore head, but there were senior members of staff there, clapping and egging him on. (Interview at hall of residence)

This intervention is an example of how staff at the hall of residence have challenged existing practices and power relations by undermining the traditional
authority of the instructor: the Humans Factors discourse facilitates such action, although the extent to which it changes the behaviour of the instructors remains questionable.

**Human Factors and cadet relations**

Basic training functions as a rite of passage within military and masculine discourses (Davey and Davidson, 2000; Trice and Beyer, 1984; Wolfe, 1979). In a number of respects, a similar situation existed in the 1990s at the flying school. The course is intensive and the cadets are under considerable pressure to meet strict performance standards and to acquire new knowledge and skills. One of the instructors described the course as: ‘16 months of blood, sweat and tears’. From the instructors’ perspective, stress is a desirable feature of the course because it develops a pilot’s sense of responsibility and discipline.

Whilst the introduction of a new discursive format has challenged the practices of the flying instructors, it has not reduced the pressure and stress put on the cadets. Firstly, the hall of residence is treated as a psychological training ground for commercial airline pilots rather than ‘a home’. One of the staff there, for example, described his primary role as being to ‘develop the right attitudes’ as distinct from just caring for the cadets. This leads to the cadets feeling that they were being assessed whilst at the hall of residence. The interviews suggest that even the tidiness of a cadet’s room could be perceived as indicative of his/her attitude to the job:

If, for example, you’re a slob and your room is a mess, then you’re going to be a slob at work. That kind of attitude can spill over to the flight deck . . . They [the cadets] can’t be one person off the flight deck and another on. (Staff at hall of residence)

As a result, the cadets feel constantly under scrutiny and tend to hide personal problems from the staff for fear of jeopardizing their career prospects. Clearly, a similar situation existed within the military culture. The difference is that cadets feel uncomfortable about the level of interest shown by non-flying staff in their ‘psychology’ and private lives. The pressure and the lack of privacy is compounded by the fact that cadets spend nearly all their time in the company of other cadets and are usually far away from family and friends:

It’s very isolated and the same people are around all day. You live with them, eat with them and sleep six feet from them. (Male cadet)

Secondly, the power struggle between the instructors and staff at the residence makes it difficult for the cadets to conform to, or indeed understand, both sets of rules and expectations. The instructors, on the one hand,
encourage the cadets to behave in a masculine way, as the example about drinking and boisterous behaviour shows. They also incite the cadets to flout college rules, as cadets who misbehave and/or get into trouble with those in authority are often admired:

I would rather teach a lively group with people who are like naughty children. If they have enough spirit to get into a spot of bother, then I would rather have that than people who sit there prim, upright and proper but never give you any response. (Instructor)

The staff at the residence, on the other hand, often disapprove of the actions admired by the instructors. This leads to a situation where a cadet who copies the behaviour of an instructor could find himself or herself punished by other members of staff. One of the staff responsible for cadet welfare illustrated this point by reference to an incident that took place in the college bar:

We’ve had an instructor climbing up the wall . . . the double standards are such that the student could be chopped for climbing up the wall and the instructor would not be chopped. (Staff at residence)

Although both sides refer to the ‘fine line’ between a cadet’s acceptable and unacceptable behaviour, their reasons for raising this point differed. The staff at the residence wanted to criticize the instructors for undermining their authority, while the instructors, on the other hand, wanted to promote a positive image of the college:

I think that it says something about their judgement if they know where the dividing line is between boisterous behaviour and what’s unacceptable. A lot of us are ex-services and we know the line. I think that someone needs to judge that. At the end of the day, in addition to hand–eye coordination, you need to have a sense of judgement and to be able to make well-judged decisions. Otherwise, would you put your life in their hands. (Instructor)

Neither side expressed concern about the effect that this ‘fine line’ or double standard might have on the cadets. The interviews suggested that these features could induce additional, and unnecessary, uncertainty in the cadets and increase their fear of meeting the college’s standards of performance and behaviour. As a result of the somewhat oppressive environment, some cadets said that they preferred to ‘keep their heads down’ rather than be noticed or challenge the authority of the instructors and other staff. Thus, the struggle for control, facilitated by the emergence of a new discursive format, effectively reinforces the power of the instructors because the application of standards and rules continues to be at their discretion. As indicated, this is to the detriment of the cadets because it leads to unclear rules and further psychological intrusion when they are already under a lot of stress.
Human Factors and female cadets

The male-dominated college is characterized by ‘laddish’ attitudes, where the talk is of sport and sex (Maddock and Parkin, 1994) and teasing was both common and of an ambiguous nature, (humorous, yet insulting; playful, yet degrading) (Collinson and Hearn, 1994). Female *ab initio* pilots are perceived as competent because they have to survive in a male-dominated environment:

The majority of them [the women] have been fine. I would be happy to fly behind them because they are disciplined. The women perhaps have more to work for than some of the men. Because it is still seen as a male preserve, some of the girls put in extra effort to maintain a level of professionalism. I would rate a higher percentage of them as the type of person that we are looking for than with the boys. They perhaps need to be stronger because they are leaders in the cause for women. (Instructor)

Interest in Human Factors appears to have increased the perceived suitability of women pilots. Human Factors states that pilots should not take risks (Company Safety Services, 1991), while the desire to push oneself to the limits and to take risks is generally associated with men and masculinity. In this respect, then, women are considered more suitable:

I would like to see more women here, personally. I think that it would be a nice balance, especially from a responsibility point of view. With the men there is always that nagging doubt that, given half a chance, they want to turn it upside down. Certainly with female colleagues you could trust them not to have the urge to turn it upside down . . . maybe I’m just being sexist. (Instructor)

It is assumed that women are good communicators and provide an opportunity for men to discuss their feelings and problems:

They (women) give a better balance to the course and morale tends to be higher. There is a female to talk to. Someone who is different and perhaps less likely to take the mickey out of you for not being a roughy toughy, so that’s nice. Yes, more of them. (Instructor)

Human Factors also emphasises the importance of teamwork to airline safety. In this respect too, women may be perceived to be better suited to the job of commercial airline pilot. However, instructors believe primarily that women help create a different atmosphere within the group and support their male colleagues. Interestingly, women are viewed, on the one hand, as more sympathetic and mature and as someone with whom to discuss problems and, on the other, as someone to look after and to protect:
Courses with women are better. They’re perhaps more sympathetic. Usually the girl is more mature and they’ve got someone who they’ve got to look after and to protect, in a way. It is another difference but no reason to reject [women]. They talk to her about their problems. (Instructor)

The views expressed reflected some stereotypical ideas that instructors hold about women. This point is acknowledged by the instructor who describes women as more responsible and less inclined to take risks than men when he remarked: ‘maybe I’m just being sexist’. Nevertheless, the introduction of Human Factors may mean that qualities such teamwork, the ability to listen and non-risk taking are genuinely valued and women are viewed more positively by being associated with such values.

While the presence of women potentially benefited the course and the college environment, the lack of female company created problems for women, as it led to them feeling highly visible, lacking role models and, perhaps more seriously, feeling intensely isolated. This woman explains how she felt in the male-dominated environment, cut off from her female friends:

The majority of my friends are male, but my best friends are female. And I still think that you need female company. Even though they put two of us together, you were still very isolated at the college. I craved company other than pilots, not just more female pilots. Just a wider circle of friends. You’ve still go your friends at home, but you’re working six days a week and you can’t get anywhere in a day. (Woman pilot)

Although some instructors agreed that the college environment was too isolated and self-contained, others felt that it helped generate teamwork. Indeed, some actively ensured that pilots were kept together throughout the period of their training and used ability to bond as a criterion for success:

We keep courses together, and people have to get on whether they like it or not. The ones that do well are very cohesive. (Instructor)

While Human Factors encourages women pilots to be judged in a more positive light, women who fail to conform to feminine stereotypes are apparently viewed less favourably. For example, women who are loners, less feminine in their appearance and unwilling to act as confidants for their male colleagues are seen as an oddity, despite being competent pilots:

At first, I didn’t recognise that she was a girl. Like a bean-pole. She turned out to be a lesbian. In hindsight, it is easy to see why she wasn’t accepted . . . She didn’t fit in well, I think, because they thought, here is a girl, we will go to her with our girlfriend problems as normal and she didn’t want to know . . . I’m sure that the chaps thought that there was something not quite right about her relationships with boys. She wasn’t
rejected totally, but wasn’t accepted as the other girls. She was a reasonable pilot. (Instructor)

Conclusion

This article showed that Human Factors is a discourse on a grand scale, in the sense of delimiting a field of knowledge (Ball and Carter, 2002; Hollway, 1991). Human Factors is used to understand and prevent airline accidents within commercial aviation, replacing to some extent technical approaches. It has also been incorporated into practices within commercial aviation, especially in relation to training and recruitment (Company Safety Services, 1991). In addition, the everyday text and talk of staff at the European training college is evidence of the emergence and dispersal of the new discourse (Ball and Carter, 2002). The fact that instructors at the college confirm the importance of Human Factors and highlight changing perceptions of pilots suggests that the new discourse is exerting a normalizing ‘gaze’ (Ball and Carter, 2002; Foucault, 1979).

Human Factors is used in ways that support a prevailing masculine culture, however, where pilots are viewed as superior to other groups (Wolfe, 1979). For example, instructors described pilots as requiring the professional skills of a manager, yet able to operate under more extreme and potentially dangerous conditions. By describing themselves as both similar to and different from other managers, the instructors comply with the new managerial discourse and maintain the status of airline pilots.

According to Ball and Carter (2002), power relations may be construed from individual instances and local reactions. In this instance, it would appear that Human Factors is being actively employed to reinforce a pilot’s superiority, rather than automatically enhancing their status as suggested by Beal (1990). One could also argue that Human Factors is used as a rhetorical device to make existing attitudes and practices palatable to outsiders and that its effects on the prevailing masculine culture are fairly superficial.

In theory, Human Factors promotes a less macho culture where risk-taking and drinking are considered inappropriate and reliability and the ability to work in a team as important (Wolfe, 1979). The airline’s Human Factors course certainly challenges macho, hostile and paternalistic behaviour on the flight deck, promoting a more inclusive and democratic culture. However, the college’s male-dominated culture has much in common with the US Navy, where the qualities admired included perseverance, toughness, not quitting, taking risks and living for today through aggressive heterosexuality and wild parties. The college was, for example, characterized by ‘laddish’ attitudes, where the talk was of sport and sex (Knights and Collinson, 1987; Maddock and Parkin, 1994) and teasing was common (Collinson and Hearn, 1994). In addition, ab initio pilot training continued to act as a ‘rite of passage’
for cadets entering the airline (Trice and Beyer, 1984; Davey and Davidson, 2000).

Within this harsh environment, the cadets rarely expressed the sense of solidarity characteristic of working-class masculine cultures (Knights and Collinson, 1987), even though the instructors saw this as a desirable trait. Instead, the cadets conformed to a more individualistic, young ‘laddish’ culture (Maddock and Parkin, 1994). Some cadets even admitted to being secretly pleased when somebody was expelled from the course because it appeared to increase their own chances of success (Davey and Davidson, 2000).

Foucault argues that identification with an emerging discourse empowers some and disables others (Knights and Morgan, 1991). Staff at the hall of residence saw Human Factors primarily as a means of challenging the power of the flying instructors, although with only a limited effect. Furthermore, the disagreements between staff responsible for cadet welfare and flying instructors simply reinforced their power by creating double standards, open to interpretation by the staff.

It could be argued that masculine discourses, like femininity, are difficult to resist as they are unbounded by institutions and central to a man’s sense of identity (Collinson and Hearn, 1994). Failure to conform potentially results in a withdrawal of male patronage — ranging from a loss of comradeship, respect and access to a high status career. Indeed, there were only a few cadets who dared to challenge overtly the power of the instructors and staff from the hall of residence; most preferring to keep their heads down. In this sense, the college’s hall of residence acted like the Panopticon, isolating cadets and ensuring their constantly visibility to those in power, so that the cadets became their own jailers (Bartky, 1988, p. 63).

Although the role of the instructor had always been to scrutinize recruits intensely, weeding out those deemed unsuitable (Barrett, 1996), Human Factors appears to have extended the discipline and control beyond the ‘visible’ technical competencies onto their ‘invisible’ character (Rose, 1990; Townley, 1994). This was considered particularly intrusive by the cadets because the criteria by which they were judged related not to traditional macho behaviour, but rather to less masculine, intangible qualities such as their mental stability and sense of responsibility. In making aspects of the self ‘knowledgeable’, the cadets became subject to scrutiny from non-flying experts (such as psychologists) and self-disciplinary mechanisms (Rose, 1990). Historically, there is certainly some evidence of pilots resenting ‘interference’ from psychologists employed to measure their ability to withstand the pressures of space travel (Wolfe, 1979).

While Foucault treats the body as one, the empirical analysis shows that women’s experiences differ from men and that women bear a different relationship to institutions. In particular, women cadets who value female friendship feel extremely isolated at the college; it is clearly not enough simply to
put two women together on a course. Female friendship is reportedly different from the comradeship associated with men and masculinity. Friendship is based on an individual’s intellectual and emotional affinity to another individual. The emotional support therefore heightens one’s sense of self, rather than suppressing it (Lyman, 1987).

Despite being isolated and unsupported themselves, women are expected to meet the emotional needs of their male colleagues. There is a presumption that women are more caring and will provide an extra level of service by virtue of being female (Tyler and Taylor, 1998); although some instructors are actually aware that this represents a fairly stereotypical view of women. Hochschild (1983) argues that emotional service or the ‘commercialization of feelings’ has been part of a wider process within aviation.

Female cadets are viewed positively with the Human Factors discourse because they are assumed to be considerate, reliable and good communicators. Feminists hotly contest the integrity and value of management discourses displaying an underlying feminine logos or discourse (Vieira da Cunha and Pina e Cunha, 2002). Vieira da Cunha and Pina e Cunha (2002) argue that management practices are not becoming more feminine, but simply display some superficial elements of femininity. Calas and Smircich (1993) suggest that, despite the rhetoric associated with equality and diversity, feminine qualities are not really valued in organizations. This author found the instructors genuinely supportive of female cadets; a point confirmed by some female cadets. However, there is a danger that positive attitudes on the part of managers and trainers may mask some real difficulties for women cadets, as feminist authors have suggested (Calas and Smircich, 1993; Vieira da Cunha and Pina e Cunha, 2002).

Instructors are more positive about female cadets who conform to feminine ideals in terms of their body image, sexuality and behaviour (for example, by acting as confidants). This draws attention to the way in which disciplinary practices produce a body that is recognizably female, in terms of her figure, skincare, cosmetics, gestures and movements. It also confirms that in a regime of heterosexuality, a woman must make herself ‘object and prey’ for the man (Bartky, 1988).

Foucault, however, often writes as if power is constituted in the very individuals upon whom it operates. Thus, it makes no sense to talk of resistance. Some female pilots resent the pressure to conform to male expectations and complain of exclusion, hostility or being patronized (Davey and Davidson, 2000). Instances of resistance amongst female pilots are limited, however (Davey and Davidson, 2000). Challenging patriarchal structures potentially further isolates women by denying them identification with the aesthetics and practices that facilitate success in relationships and at work (Bartky, 1988).

The author recommended to the airline that it remove some of the barriers to the recruitment of female ab initio pilots and take active steps to encourage
applications from women. Recruitment of women into prestigious positions does not necessarily change the culture of an organization (Gordon, 1991), but it can help to reduce feelings of extreme isolation and improve levels of support. The author also recommended that the airline used Human Factors to encourage more positive attitudes towards female pilots, as female pilots are deeply sceptical of the benefits of the equal opportunities policies (Davey and Davidson, 2000).

Since the study took place, fundamental changes have occurred in the airline and in relation to its ab initio pilot training. The number of female airline pilots has more than doubled. In addition, the training of ab initio pilots has been relocated to another European country and relationships with new training establishments in the US have been established. These new colleges will allow the development of a more modern, less military ethos and they are better integrated into the local communities. The airline is also making greater use of a training college close to home, as it is less isolated than the one described in this article.

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References


