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Pilot Burnout as a Human Factor Limitation

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Abstract

Flying has always been considered as a desirable job occupation. But, what are the current demands and challenges of becoming a professional airline pilot? Is the occupation of a pilot really attractive or is it just a golden glitter?

This paper looks at aspects of cumulative fatigue, pilot job demands and building of resources. At some stage and under certain conditions, when fatigue issues aggravate and work demands take over available resources, pilot burnout occurs. In safety sensitive environment such aviation, fatigue in combination with burnout symptoms will cause degraded performance and longer reaction times for critical tasks. This can lead to increased safety risks or can even be followed by detrimental consequences. The Germanwings 9525 incident indicated possible psychological threats to aviation safety and pointed at vulnerabilities within the aviation sector. Burnout identification and ability to cope with work-related stress are important but the prevention from burnout is even more important. Recognising burnout at the initial stage can be very difficult, but it becomes very obvious once the individual suffers from burnout. The knowledge and the usage of anti-burnout coping strategies are recognised as helpful and motivating to flight crews.

The sky is the limit, they say. But can we, outside the legislative and prescriptive Flight Time Limitations, talk about the high exposure of airline pilots to burnout as a human factor limitation? If so, the growth of the air transport industry requires a sophisticated psychological approach and focus on the vulnerabilities of the psychological aspects of human behaviour under exhaustive and demanding working conditions.

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1. Introduction

The first scientific evidence of burnout syndrome dates back to the 1970s when Freudenberger described burnout as a gradual emotional depletion and loss of motivation (Demerouti, 2015). Initially, it was believed that burnout emerges in professions that require social interaction and working with or helping clients/patients (Freudenberger, 1975, Maslach, 1986) until there was evidence of burnout signs within different occupational groups (Leiter & Schaufeli, 1996) with specific constellation of working conditions (Demerouti, 2015). Nowadays, it is believed that symptoms of burnout usually occur if the individual experiences imbalance between job demands and available resources (Reis, Xanthopoulou, & Tsaousis, 2015; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) or as a long-term consequence of aversive working conditions (Demerouti, 2015).

The objective of the paper is to define the development of burnout, clarify the dependency of job demands and building up resources within the Demands-Resources Model and show examples of burnout prevention. Latter sections deal with the newly introduced approach of peers intervention and explore research possibilities.

The contribution of this paper is in an advisory information given to commercially operating pilots and raising their awareness of burnout occurrence within the industry.

1. Methods

Although 30 peer-reviewed articles related to burnout were assessed, there seems to be little scientific evidence on burnout concerning flight deck crew members. However, a few studies were done in the Netherlands, in the UK and Turkey. The British Airline Pilots Association (BALPA) assisted with expanded data. The author, apart from the theoretical descriptive approach, also relied on field experience from colleagues in terms of fatigue, job exhaustion, and burnout symptoms. Since this group has a very specific job demands, a homogenous group of airline pilots has only been considered.

2. Three dimensions of burnout

Burnout, as per original definition by Maslach and Jackson (1981, 1986), comprises of three major elements – emotional exhaustion, depersonalisation and lack of accomplishment/reduced professional efficacy.

Prolonged exposure to the job occupation and intense physical, affective, or cognitive strain develop exhaustion (Demerouti, 2015). Signs of emotional exhaustion are shown by insomnia, forgetfulness or impaired concentration and attention, anger, increased illness, loss of appetite, anxiety and chronic fatigue (Bourg Carter, 2017). The strain of exhaustion results in distancing oneself from work tasks and in cynicism and detachment. The individual further experiences loss of enjoyment, becomes pessimistic, isolates or detaches. Reduced personal accomplishment is considered when feelings of apathy and hopelessness take over. The individual experiences also increased irritability, lack of productivity and poor performance.

3. Fatigue, stress, depression or burnout?

Fatigue, as described by Caldwell (2005), is largely caused by unpredictable work hours, long duty periods, circadian disruptions and insufficient sleep. The main indicators of fatigue are represented by sleepiness, lethargy, cognitive slowness, concentration difficulties, and irritability. Fatigue has been widely discussed within the aviation sector as one of the causal accident factors; resulting in reduced cognitive behaviour and impaired performance that lead to incorrect or delayed actions and increase the risk of an aircraft accident/incident.

Stress has been associated with depression, especially with specific traumatic life experiences, such as divorce, death of closely related persons, serious diseases, or sexual abuse in childhood (Plieger, Melchers, Montag, Meermann, & Reuter, 2015). Stress, just as fatigue, are very subjective and vary individually.

Symptoms of depression include fatigue, social withdrawal, feelings of failure or worthlessness, insomnia or hypersomnia, gain or loss of weight, and decreased sexual activity (Plieger, Melchers, Montag, Meermann, & Reuter, 2015). Thus, fatigue can be just one of the indicators of developing burnout or depression.

Considering the three elements of burnout, fatigue is an element of the emotional and physical exhaustion of burnout, In contrary, depersonalisation connects to the social withdrawal. The third element, reduced personal accomplishment, relates to the depressive feelings of failure and helplessness (Plieger, Melchers, Montag, Meermann & Reuter, 2015).

Burnout mainly relates to the difficulties to cope with occupational tasks, while stress in private life should not have any impact, and vice versa; depression should be a case of stressful events. It is also believed that severe burnout can lead to depression, and that depression is dependent on a number of stressful life events (Plieger, Melchers, Montag, Meermann & Reuter, 2015). The ongoing debate on the overlapping of depression and burnout was examined by Plieger et al. (2015) who proved the dependence on both the stressful life events and depression. According to their study, burnout was related to life stress only in the group of healthy people. The overlap showed about 36% of the shared variance, showing the closest relation between depression and emotional exhaustion and the lowest association between depression and reduced efficacy.

4. The Demands-Resources Model

Stress is defined as a disruption of the equilibrium of the cognitive-emotional-environmental system; and the exhaustion is mainly caused by job stressors (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Demanding aspects of the profession activate individual's efforts and cause exhaustion, where a greater activation of effort will cause a greater cost. Apart from organisational, physical and social attributes of the job, these can be also environmental factors, such as noise, vibrations, heat, one-time workload, time pressure. These are called job demands and refer to physical, social, or organisational aspects of the job that require sustained physical or mental effort and are associated with physiological or psychological costs. Performance protection is then achieved via activation of sympathy, and/or increased subjective effort (Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

To maintain individual wellbeing, building of resources is of utmost importance. Resources are such that aspects of the occupation that promote functionality in achieving work goals, reduce job demands and stimulate personal growth and development (Demerouti, Bakker, Nachreiner & Schaufeli, 2001).

There are two categories of resources according to Richter and Hacker (1998) - external resources relate to the organisational and social aspects of work; and internal resources that include cognitive features and action patterns.

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