PILOT WELLBEING: THE LIVED EXPERIENCE OF THE PILOT

Should the focus of pilot wellbeing be on ultra-rare, catastrophic events, or the relatively common difficulties that affect our physical, mental and social wellbeing? In this article, **Captain Paul Cullen** reports on a project to investigate the lived experience of the pilot.

KEY POINTS

- **Work-related stress can affect the physical, mental and social wellbeing of airline pilots.**
- **The current focus seems to be on the prevention of catastrophic, but exceptionally rare murder-suicide events.**
- **The focus also needs to be placed on lower level suffering, which is not commonly understood or acknowledged, nor is the impact on safety.**
- **Most pilots seem to be thriving, and valuable lessons can be learned from these individuals to reduce susceptibility to psychological distress.**

The Role of Pilot Mental Health in Accidents

When pilot mental health is mentioned, many people think of Germanwings 9525. To prevent another high-profile catastrophe, authorities went to great lengths to detect and remove pilots with mental health issues, and provide support to pilots with mental health issues. Since 1982, of almost 1,500 fatal accidents involving commercial aircraft, eight were deliberately caused by pilots. But by focussing on rare, high-profile events, might we be missing the bigger picture of pilot wellbeing? My research suggests that we know surprisingly little of the influence of pilot wellbeing on safety and accidents.

'The Right Stuff'?

Pilots have traditionally been considered to possess 'The Right Stuff', being somehow resilient to the issues suffered by the general population. However, the evidence suggests that this is not the case. A 2012 study of over 800 Brazilian pilots reported an incidence of 24% for common mental disorders and recommended that mental health should be considered a priority of civil aviation in Brazil (Feijó et al, 2012).

In 2016, Harvard University reported on a study of more than 1,800 pilots (Wu et al, 2016). Over a two-week period, 13% of pilots met the threshold for clinical depression or a major depressive disorder and 4% of pilots reported having suicidal thoughts. Eindhoven University of Technology studied 1,147 European pilots in 2018, reporting that 40% of pilots experienced high burnout (Demerouti et al, 2018).

It is difficult to know how many commercial pilots are flying today, with estimates ranging from 130,000 up to 290,000. But if the results of the studies above are reflective of what is going on worldwide, there could be thousands – or tens of thousands – of active pilots experiencing these sorts of mental health issues.

The Lived Experience of a Pilot

It has long been known that many factors affect our performance. These can be external to the person (e.g., weather, organisational culture) or internal (e.g., alertness, experience, confidence or wellbeing). Pilot wellbeing includes physical, mental and social aspects.

Since 2015, *The Lived Experience of a Pilot* research team at Trinity College Dublin have been trying to understand the relationship between pilot wellbeing and flight safety. As a pilot and a member of the research team, I am interested in the effects of work-related stress on pilot wellbeing and the associated impact on both pilot performance and flight safety.

Work-related stress is defined by the World Health Organisation as "the response people may have when presented with work demands and pressures that are not matched to their

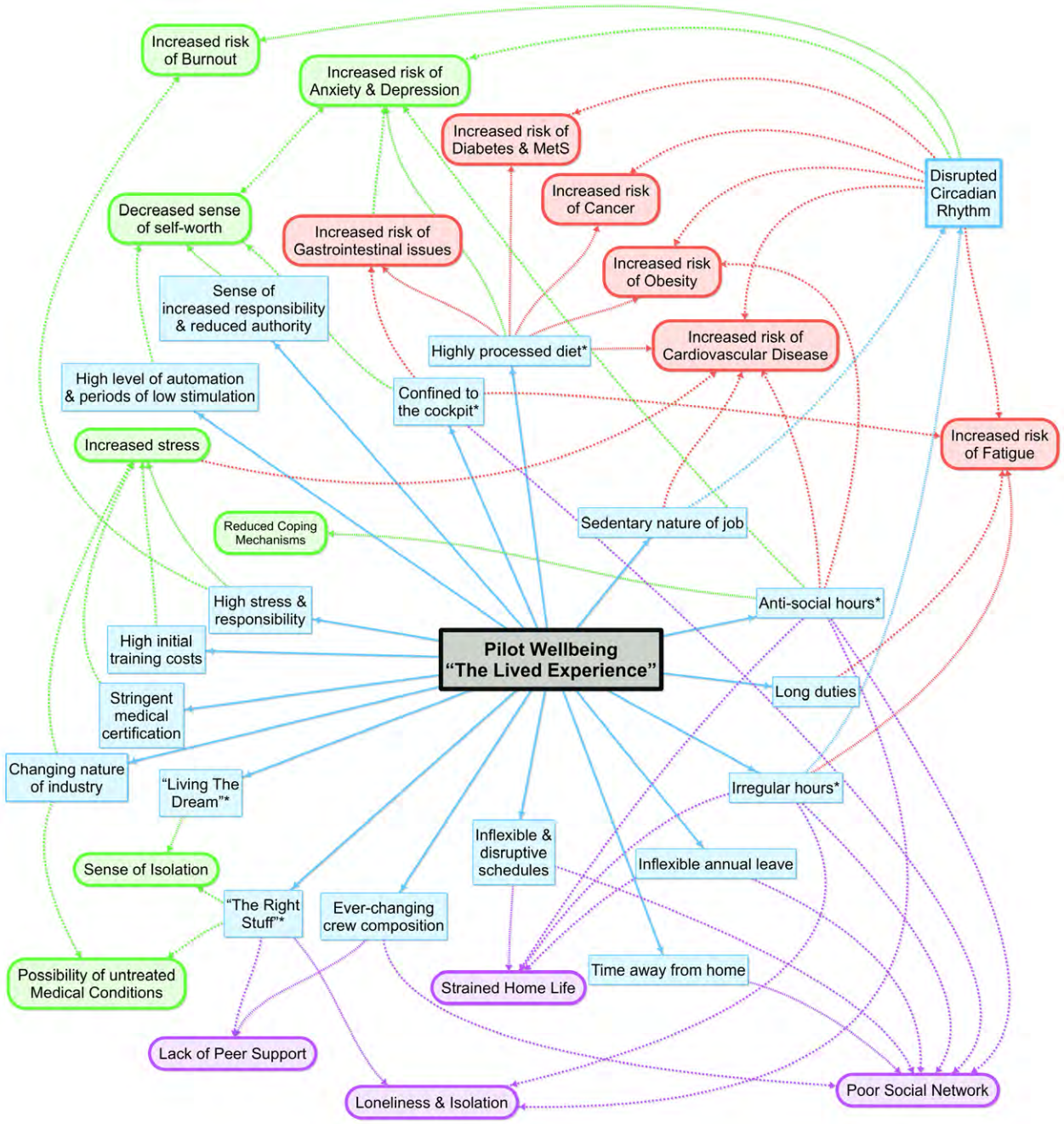

Figure 1: Factors affecting pilot wellbeing

knowledge and abilities, and which challenge their ability to cope".

Things outside the workplace, like family problems or debt, can be responsible for stress. A person experiencing stressful life events may find that he or she is less able to cope with the demands of work, even though work is not the cause, or may not have been a problem before.

Our preliminary field research identified sources of work-related stress and involved informal investigations with over 100 pilots. Considering physical, mental and social aspects of wellbeing, the 'Lived Experience of a Pilot' model was created. This was further refined based on an extensive review of the scientific literature, input from numerous medical experts, and a series of workshops with pilots (Cahil, et al, 2018, 2019). A simplified visual depiction of the model is shown in the diagram in Figure 1. Sources of work-related stress are shown in blue, and the resultant physical, mental and social health outcomes depicted in red, green and purple respectively.

Workshop participants identified what they believed to be the most significant and common sources of work-related stress, and proposed six scenarios that described what they believed to describe the true picture of pilot mental health and flight safety.

Scenario 1 – Pilots mostly coping well

This was considered to be the most typical and frequently occurring scenario, where a pilot is coping. This could involve something short-term, like tiredness or fatigue, with performance slightly degraded, resulting in small errors and omissions that are either self-corrected or picked up, for example by the other pilot or ATC.

Scenario 2 – Pilots mostly coping well but impact(s) on physical health

This was thought to be similar to scenario 1, except the impact on wellbeing was more significant and longer-term, involving something like back-pain, irritable bowel syndrome or tiredness, all of which are common in pilots, with potential to affect performance. As with scenario 1, errors are self-corrected or picked up by his or her colleague.

Scenario 3 – Plots experiencing difficulty but mostly coping well

In this scenario, pilots are coping, but experiencing difficulties that affect physical, mental or social wellbeing. Due to a complex combination of personal and work factors, combined with the operational situation on the day, there is potential for something to go wrong, resulting in a safety occurrence if not caught by the pilot, his or her fellow pilot, or some other defensive layer. While not considered to be as frequent as scenarios 1 and 2, almost all pilot participants admitted to having had first-hand experience of this scenario.

Scenario 4 – Pilots mostly coping but long-term impacts

This describes a scenario commonly known as 'leisure sickness', i.e., developing symptoms of sickness during weekends or vacations. A risk factor for developing this condition is the sudden lifting of a high workload and stress. Participants described occasions when they would become ill and run-down at the end of a demanding series of duties. Free days would allow recovery, just in time to report back for duty the following week. Occasionally an extra free day or two was needed to fully recover, and some reported that these sick days were cynically viewed by their employers as abusive use of sick leave.

Similar patterns were observed upon commencing vacations. In both cases, often the illness would not need to be reported to their employer, with the incidence of leisure sickness largely remaining under the radar. In this scenario, there is no immediate threat to safety as the pilot is off duty.

A more alarming trend highlighted was that of mortality rates soon after retirement. Participants reported a concern that the majority of retired pilots who are dying today, are those who have retired in the last 5-10 years. Those who retired more than 10 years ago seem to be outliving younger colleagues.

Scenario 5 – Pilots not coping

This scenario described the situation where pilots suffer to the point that they can no longer cope. Potential exists for significant impact on wellbeing, with the pilot most likely stopping working. The pilot might also be at risk of self-harm or suicide. As with scenario 4, there may be no safety risk.

Today's pilots work in a radically different environment from that experienced by previous generations. The hazards associated with this environment are not fully understood.

Scenario 6 – Extreme cases

The final scenario described the extreme and exceptionally rare cases such as murder-suicide. Despite the exceptionally low incidence, it is this scenario that has received the most attention recently.

Of all the scenarios, scenario 3 was considered to be the most significant in relation to specific impact on safety, and most deserving of attention. Currently, however, the catastrophic but exceptionally rare events described in scenario 6 seem to be the focus.

Where do we go to from here?

Currently we seem to be addressing symptoms, not the contributory factors. This makes pilot health different to other aspects of aviation, where we address safety-related issues more proactively. In healthcare systems, health promotion works alongside the treatment of illness. In dealing with pilot wellbeing, a parallel preventative strategy needs to be adopted.

Today's pilots work in a radically different environment from that experienced by previous generations. The hazards associated with this environment are not fully understood. It could be argued that pilots are unknowingly participating in one of the largest biopsychosocial experiments ever conducted.

Further research is needed to understand not only the frequency and severity of suffering, but also to

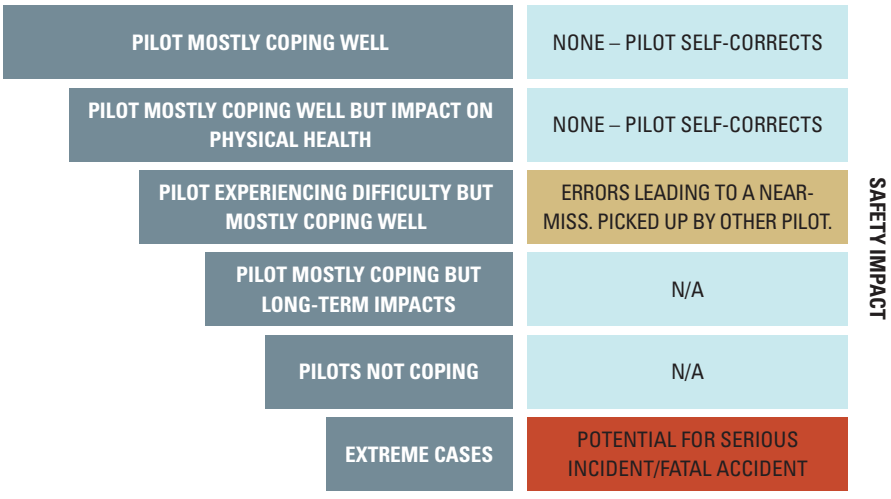

Figure 2: Lived Experience of a Pilot workshop findings

understand why this is happening, so as to provide the evidence base on which to develop future regulations, policies and procedures. If pilot mental health issues are not properly understood, we will be unable to reduce the likelihood of such issues developing, and will therefore be unable to be proactive.

Pilot wellbeing is both a flight safety concern and an occupational safety and health issue. To address it effectively will need not only traditional aviation expertise, but also input from health, safety and medical experts.

As a starting point, the 'Lived Experience of a Pilot' research team constructed a detailed 'general health questionnaire', which looks in detail at the biological, psychological and social aspects of the participants' daily lives, both inside and outside the cockpit. Our research also addresses solutions to work-related stress, both at airline and pilot self-management level. This includes tools for awareness and management of work-related stress and wellbeing.

The survey closed in January 2020 and early analysis is already beginning to give valuable insights into what makes some pilots more or less susceptible to mental health issues. The job of a pilot is somewhat unique, in that we are shift-workers who routinely work long duties, away from home and experience circadian disruption to a high level. With almost 1,100 pilots worldwide having participated, it is encouraging to note that, while many are struggling, the majority appear to be thriving within the same work environment.

This presents an opportunity for valuable lessons to be learned for all stakeholders in aviation, not only about how mental ill-health can negatively affect safety, but how mental wellbeing can positively affect safety and all other goals. One thing that is clear from our research is that protecting the mental health of pilots is not impossible, but it will not be straightforward and will require commitment from all involved.

Note: The research described in this article is independent and is not linked to any airline, pilot group or the regulator.

Captain Paul Cullen has been an airline pilot for over 20 years, with over 13,000 hours flying A320, A330 and B737. He has a particular interest in the mental resilience of pilots and is an accident investigator and researcher with the School of Psychology, Trinity College, Dublin.

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