

Can the public trust the fitness of airline pilots?

The Lords Science and Technology Committee has conducted enquiries into air travel and health, and the government has responded to its reports.¹ As spring approaches and we begin to think about summer holidays, Paul Tyler, Russ Williams and Robert Hunter discuss whether airline pilots are fit to fly.



Trust the pilots but not their masters

Paul Tyler is concerned about leaking fumes

Confidence in pilots is rightly high. The question is not whether we can trust pilots but whether they can trust their employers: the airlines, and the government, which regulates them.

Cop-out

There is mounting evidence that fumes leaking from aircraft engine oil into the cabin air can have serious effects on passengers' and crew members' health. These range from feeling faint or nauseous to full scale blackouts, one of which nearly caused a Swedish pilot to plunge his aircraft to the ground.

The British government refuses to acknowledge the frequency and danger of what it calls 'fume events'; Ministers rely on that age-old assertion that there is no 100 per cent proven causal link between fume events and ill health. It's a complete cop-out since there are scarcely any 100 per cent proven causal links between anything. Sensible people act on the basis of probability, on manifest correlations.

Heads in the sand

Fortunately, there is a group of pilots and crew – the Global Cabin Air Quality Executive (GCAQE) – who are drawing proper attention to the dangers of cabin air contamination, and I have worked with them to raise these issues in Parliament.

In my opinion, the airlines place immense pressure on pilots not to report fume events and GCAQE estimates that just four per cent are ever properly documented. Their campaigning has led to welcome research by Cranfield University, yet the Department for Transport Ministers who commissioned the study have failed to work with the very pilots in GCAQE who know most about the problem, and there is a real risk that the final analysis will be flawed.

The Cranfield research must be the beginning not the end; for one thing a full epidemiological study of those pilots already affected still seems far from reach.

If there is a serious accident as a result of fume events, it will not be pilots who are culpable. The airline industry and successive governments have had their collective heads in the sand for decades, and it is they who will have a case to answer.



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Pilots can avoid fatigue

But rosters should be sympathetic, argues **Russ Williams**

All commercial airline pilots are medically examined on a regular basis and their general fitness to continue flying is assessed by specialist aviation medical doctors. In general terms, therefore, the public can most certainly be confident that their pilot is medically fit for the task.

Additionally, on all large public transport aircraft there are always two pilots operating the aircraft and if one should ever become incapacitated, the other is trained to be able to cope and land safely.

Duty rosters

A pilot's flight and duty times are regulated in terms of both the maximum number of flying hours they may undertake (100 hours in any 28 consecutive days) and the maximum duty hours (190 hours in any 28 consecutive days).

Additionally there is a laid down minimum number of hours rest they must achieve prior to each flight in order to ensure they are fully rested before coming on duty (normally at least 12 hours).

They must also achieve a minimum number of days off every 28 days to combat any build up of fatigue. On average this equates to two days off each week.

Disruption to body clocks

However, commercial flying takes place all over the world on a 24 hours basis and the flying profession does not fall into the normal nine-to-five category of jobs. Pilots regularly cross many time zones and their circadian rhythms become upset. They are often found flying at night when most people are fast asleep or having to get up in the early hours of the morning to drive to work for an early take-off.

This is the way of life of most pilots and they have to learn to adjust to the constant disruption to their individual body clocks and fit their lifestyle to the demands of their profession.

Spirit not letter

Whilst pilots will inevitably feel tired at the end of a long flight, they should never reach the stage of feeling fatigued to the extent that their performance and judgement becomes affected. This depends solely upon the way each company rosters each pilot. Sympathetic rostering will avoid fatigue whereas unsympathetic (but legal) rostering may not.



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One medically-caused accident every 100 million years

Pilots are healthier, says **Robert Hunter**

The pilot medical standard exceeds most, if not all, other civil occupational medical standards, including those of astronaut selection. The standard addresses two areas of fitness: risk of becoming incapacitated, and functional fitness, for example vision and hearing.

The incapacitation standard for pilots has been determined following simulator-based studies of pilot medical incapacitation. These analyse the consequence of incapacitation for the safety of the flight, and model it mathematically. In the model, pilots are regarded as critical aircraft components, and their failure is accounted for and managed in much the same way that failure of engines and other critical components is accounted for and managed.

Fitness checks

Pilots have their fitness assessed by approved medical examiners at six to twelve monthly intervals. Pilots are trained in human performance and limitations, and have a duty not to fly if they feel that they may be unfit.

In addition to periodic medical assessments, pilots have to undergo frequent simulator-based checks of their skills. Following recovery from illness, in addition to medical assessment, a satisfactory pass in a simulator test can serve as an actual demonstration of a pilot's fitness to return to flying.

There are a number of additional aspects of pilot performance that are subject to legislative control, for example limits on numbers of hours worked, and the maximum permissible level of blood alcohol, where the level is one quarter of the limit for driving.

Studies have demonstrated that pilots are generally healthier and live longer than others in their age and socio-economic groups.

Low risk

The medical incapacitation standard is such that a medically-caused fatal aircraft accident should occur no more often than once in a billion flight hours. Since the formation of the Civil Aviation Authority in 1972, UK registered airliners have flown some 60 million hours. During this time a medically-caused fatal accident has never occurred, nor would it be expected to have occurred.

For a member of the public flying on such aircraft for ten hours per year, it would take a predicted 100 million years before they experienced such a fatal aircraft accident. This is the basis on which the public can trust the fitness of pilots.

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