

CABIN AIR

Fuming about the findings

Many people will be both disappointed and surprised that the concentrations of neurotoxic chemicals in airline fume events have still not been made publicly available after a three-year Cranfield University study was set up specifically to find out this crucial information by the UK's Department for Transport, for the House of Lords.



Ramsden: brave stand

Perhaps the most disappointing aspect was that ex-aircrew had offered to fill a BAe 146 with visible oil fumes on the ground – for ease of testing – in 2007, to allow this vital information to be revealed.

It is with a great sense of relief that an eminent scientist from Cranfield University, Jeremy Ramsden, has bravely challenged his own colleagues' work on the basis that facts tend to materialise – in due course. Perhaps the most worrying fact to emerge was that the lengthy, gross miscalculation was “peer reviewed”.

Solutions such as toxic air detectors, rather than pilots' noses and non-bleed air architecture, as in the Boeing 787, must now make common sense – to all but the most insensitive of vested interests.

John Hoyte

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Expert decides it is time to clear the air

The attempt by the UK Aviation establishment to use a distinguished university to justify continuing to ignore the issue of cabin air contamination by oil-borne neurotoxins was bound to fail, and it has done.

Back in 2008, the Department for Transport commissioned a Cranfield University team to carry out tests on 100 flights to find out what chemicals were present in cabin air. To make the tests meaningful they needed a “fume event” to take place, but none did. However, Cranfield did find traces of engine oil-based neurotoxins present in the cabin on flights that did not suffer a fume event as detected by human noses and eyes.

But the concentration detected was dismissed as being below permissible levels, even though some of

the chemicals were known neurotoxins and there are no “permissible” levels for them.

Now a Cranfield professor has broken ranks. After joining a workshop on “inhalable toxic chemicals in aircraft cabin air”, Jeremy Ramsden said the report’s quoted conclusion “is neither sound nor justified by the actual work carried out” but “has been carelessly and uncritically quoted, including by the UK Minister for Transport... and widely used to infer that there is no safety and health problem”. He added: “Mandatory inclusion of a health warning on air tickets, as on cigarette packets, would seem to be the alternative in the face of technical inaction.” That says it all. ■

See Air Transport P16, Letters P39



Should the A340 have been abandoned sooner? Should air tickets come with health warnings? Have your say on flightglobal.com/comment

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SAFETY DAVID LEARMOUNT LONDON

Cabin-air research seems to reverse no-risk conclusion

Latest review from Cranfield University suggests fume detection systems should be featured on board flights

Cranfield University has concluded that on-board contaminant detection systems are vital for the safety of aircraft, and that work to eliminate toxins from the cabin environment should be accelerated.

This follows a workshop review of measures to deal with contaminated cabin air and appears to counter recent Cranfield research carried out for the UK Department for Transport, which suggested that any toxins were at low levels.

“The mandatory inclusion of a health warning on air tickets would seem to be the alternative”

JEREMY RAMSDEN
Cranfield nanotechnology head

That study had concentrated on 100 flights, by several carriers, and found that while there had been fume events on board, none was at hazardous levels.

Cranfield nanotechnology head Jeremy Ramsden, who chaired a recent seminar on inhalable toxic chemicals in cabin air, said of the earlier study: “This report actually found significant concentrations of organophosphate neurotoxins and other noxious substances in cabin air, even under normal flying conditions.”

While he acknowledged the results of the earlier study – that there was no evidence for target pollutants occurring at levels exceeding health guidelines – he added that the study “failed to achieve measurement of a ‘fume event’, even though that was one

of its principal objectives”.

“Even for ‘normal flying conditions’, the purported conclusion is irrelevant because no standards are available for some of the most problematical substances,” Ramsden added.

“Despite the fact that this ‘conclusion’ is neither sound nor justified by the actual work carried out, it has been carelessly and uncritically quoted... and widely used to infer that there is no safety and health problem.”

Ramsden said the most obvious solution is to eliminate the source of the worst neurotoxic contaminants, namely engine oil additives. But because the additive is a highly effective anti-wear ingredient, he suggested a more realistic method would be the retrofitting of contaminant-detection systems and bleed-air filtration.

Effective treatment of crew and passengers who have suffered neurological damage might now be practical, Ramsden added. “Highly encouragingly, successful biochemical treatments are being developed and are already available,” he said.

But treatment can be provided only if the patients are informed of contamination events because, as Ramsden points out, misdiagnosis is frequent.

Ramsden said that the Boeing 787 would be free of this problem because it does not use engine bleed air for cabin ventilation and pressurisation.

For other aircraft types, he said: “The mandatory inclusion of a health warning on air tickets, as on cigarette packets, would seem to be the alternative in the face of technical inaction.” ■

 David Learmount comments on operational safety issues at flightglobal.com/learmount