

Carbon Monoxide in the Air?

HolidayTravelWatch has recently received a report from Mrs X, who claims that her family suffered illness following a flight to the United States.

They advised that they and a number of other passengers were overcome with breathing difficulties. When they arrived at their destination, they continued to suffer with respiratory problems and stomach upsets. Since their return to the UK, they report that they still suffer with respiratory difficulties, and are continuing to receive medical assistance.

There is an automatic assumption that the illnesses arise from something the passengers ate, but is this the correct conclusion?

For a number of years there has been a continuing debate on the quality of cabin air; is it good to recycle air, should the level of oxygen be reduced, what is the potential for pollutants to enter the air supply and what is the potential effect of any cabin toxin on the human body?

In a period when Carbon Monoxide (CO) poisoning is uppermost in the public minds, following the Corfu tragedy, we have to ask what is the potential for Carbon Monoxide to enter an aircraft cabin?

The issue of CO and aircraft appears to have been first reported in 1972. The Federal Aviation Authority provided a warning to small aircraft users of the potential for carbon monoxide to infiltrate the cabin of piston aircraft. At that time they advised that all aircraft owners should install a CO detector, to protect the health of pilots.

How does this threat transmit itself into modern day aircraft?

The issue is clearly illustrated within the Air Accidents Investigation Branch (AAIB) report 1/2004.

Within that report they investigated an incident with a BAe 146 aircraft on approach to Birmingham International Airport in November 2000.

The flight was returning from Paris, and shortly after take off, the crew were alerted to passengers reporting an oily smell within the cabin.

Initial crew investigations found nothing unusual.

Toward the end of the flight, both pilots went to the toilet and returned to their duties. Shortly after returning to the cockpit, both crew reported that they were feeling nauseous, the First Officer suffered trembling, and was placed onto oxygen.

The Commander of the flight continued with his duties getting steadily worse, but managed to bring the aircraft safely down, disengaging the autopilot at 150 feet.

The AAIB carried out a thorough investigation on the BAe 146 and noted similar incidents with Boeing 757, 737, Fokker 100, Airbus 320/321 and DCH-8 aircraft.

The initial problem for the AAIB, was to try and identify the cause of the 'toxin' that had so debilitated the crew on the approach to Birmingham; was it CO or was it some other hazardous toxin?

Their enquiry focused upon the Auxiliary Power Unit (APU), and the various seals to protect the air supply from contamination, by fuel/oils used in the operation of aircraft.

They noted that fuel oils generally contain an additive, Tri-Cresyl Phosphate (TCP), which is known to be a neurotoxin if ingested in large quantities.

Interestingly, before any oil is approved for use in an aircraft, they observed that all oil products had to comply with the MIL-PRF- 23699 standard.

This is a standard 'owned' and created by the US Navy.

The AAIB stated that,

"However, within this specification, the US Navy does allow for some leeway in manufacturing tolerances".

They noted that the House of Commons Select Committee on Science and Technology reported that in the absence of Tri-Ortho-Cresyl Phosphate (TOCP) confirmed poisoning cases,

"that the concerns about significant risk to the health of airline passengers and crew are not substantiated".

The AAIB considered that in the case of the Birmingham flight, the most 'probable' cause of contamination was due to oil leakage through the APU.

This APU was later removed from the aircraft after further reports of smells and fumes were received. The AAIB did not dismiss the notion that the crew and passengers of the Birmingham flight were not exposed to CO (they could not find CO at any appreciable level), but did concede that exposure to neurotoxins or CO could produce the same symptoms.

They concluded that research should continue, in order to identify the nature and effect of 'toxins' in the aircraft cabin.

However, the AAIB critically noted that the Joint Airworthiness Regulations (JAR) fails; they stated,

"The regulations put the onus on the system design for clean air, with little requirement placed on the constituents of the lubricating oils so as not to be harmful to, or affect, the occupants of aircraft".

In 2002, a Professor Nazaroff testified before the US House of Representatives, concluding that

"During abnormal operating conditions, exposure to engine oils, hydraulic fluids, and their degradation products (such as CO and Formaldehyde) might occur. No data have definitely linked exposure to these compounds with reported effects in cabin occupants".

He also called for CO monitors to be placed in cabins and for an enquiry into the 'toxicity' of the constituents of the oils or their 'degradation products'.

On reading these reports, it appears that aircraft/airline/petrochemical industries, not the Authorities, are in the dominant position when investigations are required.

The Authorities have clearly recommended a deeper enquiry into the 'constituent' fuel oil or degradation product issue.

On behalf of Mrs X, and all air travellers, we ask why has this not taken place?

Surely the properties of these fuels are known to suppliers, or is there a wider health and safety issue at stake; an issue which cuts to the health of every man, woman and child?

HolidayTravelWatch
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If you have been affected by any of the issues raised in this article, and would like to receive advices, then please contact HolidayTravelWatch without delay.

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