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London, England.

The 2021 Aircraft Cabin Air Conference took place online via Zoom, over 4 days, from 15 to 18 March 2021 from 15:00 to 20:00 daily.

The conference saw over a dozen films shown, over 30 presenters speak ranging from the International Air Transport Association (IATA), scientist and medical experts, air accident investigators, engineers, attorneys who have or are running cases related to exposures, crew representatives bodies such as the Global Cabin Air Quality Executive (GCAQE) to companies offering potential solutions to help mitigate the contaminated air on aircraft problem, such as Pall Aerospace, BASF, PTI Technologies, Aircraft Clean Air to name a few.

Nearly 1600 delegates registered for the event. Logging in from 6 continents via Zoom, they ranged from US Federal Aviation Administration (FAA) personnel, US military, Airbus, Boeing, Embraer, numerous national aviation authorities, filtration and sensing companies and experts, numerous air accident departments, synthetic lubricant manufacturers, aircraft leasing companies, legal teams, scientists & researchers, airline crews and crew unions, to representatives from over 50 airlines.

The European Union Aviation Safety Agency (EASA) has previously stated that: “The cabin/cockpit air quality is similar or better than what is observed in normal indoor environments (offices, schools, kinder gardens or dwellings)” and “A human exposure study is the long-needed tool to provide an unequivocal and sound data set to end the misguided discussion on cabin air quality once and for all.” The validity of the EASA view was brought into question by research presented at the conference. A film screened at the conference entitled “Ultrafine Particle Levels Measured On Board Short-haul Commercial Passenger Jet Aircraft” showed that although the air quality in the cruise / steady state phase of flight (the state when engine air quality is certificated) measured very low levels of ultra fine particles (UFPs), there was a clear pattern of increased UFPs during engine power changes and aircraft air conditioning system configuration changes. Levels were reported to be 25 times higher than in a home. Unfortunately, EASA were absent from the conference with no representatives registering.

The film is available to view at:

https://vimeo.com/520013750

Over the last 20 years, there have been over 50 recommendations and findings made by 12 air accident departments globally, directly related to contaminated air exposures on passenger jet aircraft. However, commercial aircraft continue to fly, with no contaminated air warning systems to notify passengers and crews when the air they are breathing is contaminated despite numerous calls to EASA by air accident investigators. However, EASA have repeatedly stated that contaminated air is not a safety issue, something crew unions strongly dispute and disagree with.

Every airline crew union representative presenting at the conference, endorsed or echoed the aims of one of the conference sponsors, the Global Cabin Air Quality Executive’s (GCAQE) ‘Clean Air Campaign’ launched in February 2021. The airline crew campaign is calling on regulators and Governments globally, to mandate the introduction of effective 'bleed air' filters and contaminated air warning sensors on passenger aircraft.

See: https://www.gcaqe.org/cleanair

The very successful 2021 conference which follows on from the 2017 and 2019 conferences held in

Related Sectors:

Health :: Public Sector & Legal :: Transport & Logistics :: Travel & Tourism ::

Related Keywords:

Flight Safety :: Public Health :: Aviation :: Occupational Health :: Air Quality :: Aerotoxic Syndrome :: Bleed Air :: Airlines :: Passengers ::

Scan Me:

London, discussed and debated primarily the design flaw that relates to the way the breathing air supply on all passenger jet aircraft (except the Boeing 787) is supplied. The breathing air is provided to passengers and crews unfiltered directly from the compression section of the engines or from the Auxiliary Power Unit (APU), a small engine in the tail of the aircraft. This is a process known as 'bleed air,' because it is 'bled' from the hot compression section of the engine. The 'bleed air' is not filtered and known to become contaminated with synthetic jet engine oils[1]
and hydraulic fluids.

The cans of the jet engine oils and hydraulic fluid products that are contaminating the breathing air supply and to which people have been exposed state:

"Do not breathe mist or vapour from heated product",

"Risk of causing cancer",

"Risk of infertility",

"Risk of neurological effects" etc…

Conference sponsor BASF provided an informative presentation about their aviation catalytic convertors and the importance that they be maintained in accordance with manufacturer guidelines and procedures.

Further details available at:

Conference keynote speaker Pall Corporation, who were the first company globally to provide an airline with a Cockpit Filter Unit (CFU) over 10 years ago, discussed the efficiency of their HEPA filters to deal with bacteria and viruses on aircraft and gave an update on their Cabin Air Quality Sensor (CAQS). They also presented an update on their total cabin air filtration system known as a Mist and Vapour Eliminator (MaVE) filter. Both CAQS and MaVE technologies are at an advanced design phase and attracting widespread airline and industry interest.

Further details are available at:

aerospace.pall.com

Conference Director Captain Tristan Loraine stated:

"*I would like to thank our sponsors, speakers, the organisation team and everyone who attended the conference. It was the biggest conference ever held on the issue with the greatest diversity of attendees we have ever had. Although EASA elected sadly not to attend, I hope they will listen to the results of the conference poll taken on day 4. This was a poll voted on by representatives from all stakeholders in aviation. 94% of voters voted that effective 'bleed air' filters and sensors should be installed on passenger jet and turboprop aircraft. Although aviation is the safest form of travel statistically, it is time for EASA and the FAA to take steps to protect crews and the travelling public from contaminated air exposures and enhance flight safety. The technology is there to do it, airline crews globally want it, passengers expect it and air accident departments have been calling for it for over 10 years.*"

In their presentation and corporate film shown to attendees, US filtration company PTI Technologies highlighted that the industry filters the 'bleed air' used for the Fuel Tank Inerting System (FTIS). FTIS was introduced after the TWA 800 tragedy to prevent a fuel tank ignition. The FTIS system works by providing a nitrogen rich environment in the fuel tank. The system also uses bleed air, but because of the presence of engine oil fumes in the 'bleed air' and their adverse effects on the system, this 'bleed air' is filtered. PTI Technologies suggested the 'bleed air' people are breathing should also now be filtered to "enhance the in-flight experience, but more importantly, flight safety. "

The PTI Technologies promotional film explaining this is also available at:

https://www.ptitechnologies.com/cabinsafe-filters

A short video explaining the FTIS and bleed air system is on the GCAQE campaign website page at:

https://www.gcaqe.org/cleanair

Both jet engine oils and hydraulic fluids contain organophosphates. These chemicals have been found in hundreds of swab samples carried out on the interior surfaces of aircraft and in many air-monitoring studies.

In addition to the 'Clean Air Campaign,' conference sponsor the GCAQE, also recently created the first ever, global reporting system for contaminated air events, known as GCARS. The 'Global Cabin Air Reporting System', which anyone can use, is available at: https://gcars.app/

Conference Director Captain Tristan Loraine also stated:

"The industry has achieved so many great things in the last 50 years. It has taken numerous steps to enhance flight safety. Conference attendees made it very clear they now need to resolve the contaminated air issue. Regulators like EASA say they need to know what chemicals are present during a contaminated air event before they can consider mandating new technologies to mitigate the problem. They knew over 20 years ago what chemicals were present, as they have data from the investigation into the total incapacitation of two pilots on a domestic Swedish flight known as the 'Malmo' incident in 1999. This was shown in a film entitled 'One Night Over Sweden' at the conference."

The film entitled 'One Night Over Sweden' can be viewed at:

https://vimeo.com/520042108

The next conference is expected to take place in 2022.

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2021 Aircraft Cabin Air Conference

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Notes to editors:

- Cabin breathing air on all aircraft apart from the Boeing 787 is taken directly from the engines and provided unfiltered to the aircraft. This is known as 'Bleed Air'.
- Bleed air is known to become contaminated with engine oils and/or hydraulic fluids. These are hazardous including to the unborn.
- Contaminated bleed air events have been recognised as occurring since the 1950s.
- No aircraft currently flying has any form of detection system fitted to warn when these events occur.
- Flight safety is being compromised by contaminated air events.
- Crew and passengers have been reporting short and long-term health effects as a consequence of exposure to contaminated air.
- Contaminated air events are not rare and known to be under reported.
- Passengers are never told about the risks or these exposures or when they have been exposed.
- In 2010, the High Court of Australia upheld a ruling that inhaling heated engine oil fumes were harmful (Joanne Turner case) and twenty-one years after the Compensation Court of New South Wales in Australia ruled, on 28 April 1999 in the Alysia Chew case. Alysia Chew had flown for Ansett and East West Airlines and had been exposed to fumes on the BAe 146 between January 1992 and October 1993. The New South Wales Compensation Court reviewed her claim that she was: "exposed to fumes, toxic substances and other irritants whilst carrying out her duties as a flight attendant" and ruled she had: "Suffered injury arising out of and in the course of her employment".
- Two recent feature documentaries have been released on these issues 'Everybody Flies' (2019)

and ‘American 965’ (2021).

[1] Michaelis, S. (2016) "Implementation Of The Requirements For The Provision Of Clean Air In Crew And Passenger Compartments Using The Aircraft Bleed Air System", Cranfield University, UK. Cranfield MSc Thesis?. https://1d223eac-9f87-4fb4-8ca7-7fec67969181.filesusr.com/ugd/3e3e4e_c7faf9788a05427a9611cb2000c2c2eb.pdf

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