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Sent via email:

Friday 12th April 2024

OPEN LETTER

RE: Concerns regarding CAQ III and FACTS 1 aircraft cabin air studies funded by DG MOVE

Dear Commissioner Vălean and Director- General Kopczyńska,

On behalf of the cabin crewmembers, pilots, and other airline workers we represent across the EU, we are writing to seek a meeting with you and to document, our ongoing and long-standing concerns with the Cabin air Quality III (CAQ III) and prior "FACTS" cabin air research, which has been funded by the EU. We are also writing to ask you to set up a research project with worker involvement, that can look at solutions to this issue.

We write to you having recently attended the February 2024 CAQ III stakeholders' workshop at EASA, in Cologne.

Our concerns are long-standing and warrant your utmost attention.

We are aware that EASA has been looking at the cabin air quality issue since 2008, some 16 years. This began with the EASA Advanced Notice of Proposed Rule change in 2008. [1] The EU then began funding work on this topic in 2012. [2] The EU commission has since funded 4 major studies (CAQ1, AVOIL, FACTS 1, CAQ III) at a total value of 3.92 million euros. This work began in 2014 and remains ongoing via CAQ III. FACTS 1 was not completed as outlined in the report and also directly to the GCAQE at a meeting with yourselves and EASA on 12 December, 2019.

We have outlined our concerns from the beginning, and they have not changed, simply grown more and more clear. We visited EASA in 2015 (21 May) and in 2017 (4 July & 29 November), we submitted a complaint to the Ombudsman in 2016, we have written to EASA and the EU commission many times and attended the 2020, 2023 and 2024 stakeholders' meetings. However, our concerns have simply been ignored. Our valid concerns to the Ombudsman regarding the FACTS study were ignored, and we were advised to wait to see the outcome and then told there would be another study (CAQ III), which we note is little different to the FACTS study, with many of the same industry connected participants and no worker involvement.

The recent CAQ III stakeholders meeting consolidated our concerns with a few specific points outlined below:

1. Change of study scope: The study tender was entitled: "Cabin air quality assessment of long-term effects of contaminants". However, we note that the study lead organisation now lists the scope of the project as: "To provide answers on possible health impacts caused by serious oil-related fume events." [3] We do not believe that the scope of the work being undertaken focusses on the way in which aircrew are exposed: Chronic low

dose exposure, plus acute fume events. We believe a greater focus is being placed on high level acute exposures, without an adequate study of all the end points of exposure associated with chronic low-level exposures.

It was clear from both the 2023 and 2024 stakeholder's meeting that the study was addressing sub-acute exposures to oil fumes, rather than chronic low dose exposure. While the study is looking at mice over a 12 week period, the exposures are certainly not representative of how people are being exposed in the aircraft.

2. The study lead, Dr Sven Schuchardt (Fraunhofer), reported during the February 2024 stakeholders meeting, that if there really was a problem with exposure to the engine oils and their decomposition products, there would be many more deceased aircrew that would show up in the epidemiology. It was very evident that Dr Schuchardt did not believe there was a problem. This is no surprise, as he said precisely this in the original CAQ air monitoring study final report in 2017. [4]

   A crew member whose health is adversely affected as a consequence of exposure to contaminated air may live their entire life with these long-term effects and subsequently die from a non-related issue. However, the epidemiological data referred to by your investigators may not be looking closely enough to address the exposure scenarios. The data which does link adverse health effects and exposures in crews and passengers, your teams have simply downplayed or ignored. There are copious sources of data, showing that crew impairment is occurring in flight associated with the supply air/bleed air contamination and specifically oil fumes. However, for a variety of reasons, neither your studies or the major aviation epidemiological studies have considered the source of exposures. Likewise, the major failing of the EASA/EU CAQ studies is the failure to really investigate what is going on with the people. The people we represent.

   The fact Dr Schuchardt as a principal investigator, appeared to only be interested in an immediate death from an exposure was totally inappropriate and completely contrary from keeping aircrew and passengers safe during flight or operation of aircraft. Likewise, the EASA study led by Dr Schuchardt suggested that a simulated oil fume exposure run in parallel with a 'human exposure study' could be undertaken. [4] We must say this would be highly unethical, has in fact been undertaken on a daily basis since bleed air was introduced in the 1950s and shows a complete lack of understanding of this issue, human health and flight safety.

3. We do not believe that your studies conducted on mice are representative of aircrew and passenger exposures to oil fumes. The available epidemiology clearly shows this, however, much of this is clearly being ignored. The lead researcher in this area clearly stated that while mice could find their way through the maze and various other tests, no serious problems were identified. She inappropriately implied that this was representative of aircrew and passengers. We have repeatedly reported, as has the published literature that aircrew and passengers are reporting a wide range of adverse short through to long-term effects after exposure to bleed air contaminants, often in association with confirmed or documented exposures. Additionally, our members who are exposed to oil fumes, even those impaired, incapacitated or who go to hospital following an event, the vast majority have always been able to find their way home. This makes the reference to mice finding their way around a maze totally useless.

4. It was very clear that the scientists 'do science' and the priority to resolve this issue was missing. The focus was placed on what could be done with the given funding, rather than asking the right questions to really resolve this problem, once and for all.

5. We believe that while the studies have placed the primary focus on neurotoxicity via their selected methodologies, this research has ignored other key endpoints of exposure. As an example, the study completely fails to look at gene expression in the mouse brain and other organs. We feel a review of the additives and degradation products for endocrine disruption is also lacking. We wish to specifically ask if EASA or the project researchers during its enquiries and under its duty of care, whether they have asked engine oil manufacturers or additive suppliers key questions. These include asking if they have carried out any tests to look at the medical, health or other effects of exposure to oil / hydraulic fluid decomposition products or to exposure to the specific anti wear additive blends used in jet engine oils such as Durad 125, Durad 150 or SYN-O-AD-84-84.

6. It was also very evident that there was a clear divide by the study partners and those that work in this environment. We believe there is a combination of a conflict of interest being demonstrated by industry partners, the regulator, academics and professional organisations too close to industry, while not fully aware of the true scale of the problem.

7. Serious flaws in the published reports based on the FACTS study. This specifically involves cross contamination of the bleed air simulation and subsequent inaccurate conclusions. In vitro damage to the lung and its implications for aircrew and passengers appears to have been ignored. [5-7]

3.92 million euros has now been spent on industry-controlled research with no worker involvement and yet these exposures continue, on a daily basis, with no proper mitigating studies put in place. Air accident departments have told you that crews have been impaired and endless reports show you that crew and passengers health can been adversely affected by these exposures.

We urge the EC to set up and fund a research project with worker involvement, that will support the initiatives some in the industry have been undertaking for over a decade looking at solutions. These include but are not limited to:

1. Development of effective bleed air filters like Pall Aerospace and Liebherr have been researching.
2. Development of effective electrical ECS systems for potential retrofit on current aircraft and for future aircraft. Liebherr developed and Airbus test flew such a system some years ago and Collins Aerospace already fly such a system on the 787.
3. Less hazardous engine oils and hydraulic fluids like NYCO are reported to be developing. [8]
4. Development of accurate contaminated bleed air sensors based on the FAA funded research.
5. Support research to develop a blood test to confirm exposure to the aryl phosphates used in jet engine oils. Research we raised with you 15 years ago and which unions, the military and others have been funding ever since.

This is where research funding needs to urgently go. To enhance flight safety and protect passenger and crew health.

Until mitigating solutions are developed, the problem will not go away.

Finally, we would call on you to encourage those involved in the CAQ III research to speak at or at least attend the forthcoming 2024 Aircraft Cabin Air Conference (https://www.aircraftcabinair.com/) being held in London in September. The EASA/DG MOVE team were asked to do this at the last 4 conferences (2017 -2023), but regrettably declined to speak or attend. We are sure it would be very beneficial for all.

Your serious attention to our concerns is indeed not only an issue for Europe. As you will know, what EASA does, has an impact globally.

We look forward to meeting you at your earliest convenience.

Sincerely,

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A global coalition of health and safety advocates committed to raising awareness and finding solutions to poor air quality in aircraft

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