



Nürnberg, 27.05.2020

Open Letter on the subject of Contaminated Cabin Air and the German Government financial aid for Deutsche Lufthansa AG

Dear Madam President of the EU-Commission,

Dear Members of the EU Commission,

Dear Madam Chancellor, dear Vice-Chancellor,

Dear Federal Ministers Altmaier and Scheuer,

Dear Prime Minister Dr. Söder,

Dear Members of the Executive Board and Supervisory Board of the Lufthansa Group,

the Corona crisis achieved the unimaginable - almost all air traffic has come to a standstill, almost the entire Lufthansa Group fleet is on the ground. The economic consequences for the aviation industry as a whole are devastating and our colleagues fear for their jobs. We welcome the fact that the path has been paved for a comprehensive governmental aid package to save our German Lufthansa with the Federal Government's participation.

We, the Patienten Initiative Contaminated Cabin Air e.V., (P-CoC e.V.), view health protection and the protection of life before the protection of economic interests, which is being pursued uniformly by the Federal Government and the Federal States and worldwide, as an opportunity that must be seized.

With the corona crisis, airlines worldwide not only have to face economic challenges, but must also prepare themselves for a completely new scenario in air traffic in terms of "consideration of health and life protection".

A unique opportunity presents itself yet again to put the health and life-threatening effects of contaminated cabin air to the test bench. Now, the long overdue technical retrofitting of aircraft equipped with bleed air systems must be implemented.

In this way the Federal Government can, within the scope of its duties and responsibilities, significantly improve the safety of air traffic and the protection of the health of passengers and crew members worldwide, with the Lufthansa Group as a pioneering force in the area. We wish the Federal Government the courage à la France for Renault E-Mobility!



Our demands in detail as follows:

- 1. immediate retrofitting of already available warning systems (sensor technology without traffic light system) with corresponding procedures/checklists, reporting systems and corresponding training**
- 2. immediately equip the entire fleet (where not already done) with HEPA/carbon filters for recirculation air. Supplementary proactive support for the development and approval of so-called total air filtration systems; installation as soon as available**
- 3. immediate installation of OZON/VOC converters for all aircraft for which they are available**
- 4. return to regular overhaul intervals and engine maintenance of aircraft**
- 5. obligation to equip all new deliveries only with Electronic Bleed Air or Bleed Free (external ventilation).**
- 6. supplementation of the technical measures by close-meshed aeromedical examinations in accordance with EU 1178/2011 and Acceptable Means of Compliance and Guidance, as well as the inclusion of biomonitoring and symptom-related examinations following Fume Events in accordance with the current state of science in the catalogue of services for medical treatment of the BG Verkehr.**

Reasons:

From today's perspective, there can no longer be any reasonable doubt that Fume Events regularly occur as accidental events and as such cause health problems for crew and passengers. The Lufthansa Group itself confirmed in January 2020 at the EASA workshop "Cabin Air Quality", that it records about two Fume Events per day. That is more than 700 Fume Events per year at Lufthansa Group alone, which is not including the cumulative numbers of unreported cases.

It is technically sufficiently proven that Fume Events are associated with highly toxic exposure scenarios.

In its 2018 status report "Measures against so-called Fume Events" the Scientific Service of the Federal Government of Germany describes in detail the question of legal requirements for filter installations and measures of other countries:

"There is no need to change or introduce new requirements, only to implement existing ones."

These are described in the EU Directives 98/24/EC and 89/391/EEC [8] and apply to Germany and every other EU country.



Description: Measures to prevent exposure to chemical agents in the aircraft air supply must be defined, classified, and ranked to the classic occupational hygiene „hierarchy of controls”.

This strategy is already required of EU employers according to Article 6 of Directive 89/391/EEC, according to the following structure:[...] Hierarchy of controls:

- 1. The most effective option is to either eliminate the exposure hazard or substitute a hazardous compound for a less hazardous compound;*
- 2. The next best option, if the exposure hazard cannot be eliminated, is to apply engineering control measures intended to mitigate the chemical exposure hazard by addressing the exposure at the source;*
- 3. If engineering control measures are not sufficient, then administrative measures are useful to help to control/monitor the exposure;*
- 4. And, as a last resort when exposure cannot be adequately controlled by other means, personal protective measures, including the use of personal protective equipment (PPE), are instituted. Where PPE is given to workers, they must be trained in its use.*

Which means, according to step 1 "Hierarchy of Controls", the problem should not exist at all, because alternatives to bleedair already exist. Only if the problem could not be solved technically (which the employer would have to justify), filters would have to be used at the latest in step 2. Important: It is not the manufacturers, but the employers who are responsible for the implementation! As already mentioned, however, it is technically possible to solve the problem already in step 1 by using bleed-free technology (Boeing 787). Retrofits for existing aircraft are also technically possible, as ATR[...] and Airbus 320[...] tests have shown successfully years ago. The two EU directives are implemented very strictly in all other industries and fines are imposed in the event of infringements (chemical industry, hazardous goods, noise protection, etc.). In aviation, however, this implementation has not yet taken place, since, according to manufacturers and employers, there is no cabin air that is harmful to health. As a result, the "Hierarchy of Controls" is presumed to not necessarily have to be implemented. Here, not only manufacturers and employers, but also the legislator clearly fail to comply with the above-mentioned requirements. Neither the approval authorities check for compliance, nor do the monitoring authorities see themselves under obligation to do so.“

What has been discussed in the expert audience for years was recently clarified in the report about "contaminated cabin air" (<https://youtu.be/jHGu83gC6V4>), which was broadcast on 28.01.2020 in the TV program "Report Mainz", namely that the ventilation system for the cabin air is clearly a faulty design.

The Certification Specification for Large Aeroplanes, in particular CS-25.1309 (c), CS 25.831 and CS 25.832, define the requirement that it must be possible to prove that no "hazardous substances" are present in the breathing air, also in-flight. In addition, warning systems (sensors) must be installed which enable the crew to put on oxygen



masks in case of danger of contamination in the cabin air and the associated inability to act, in order to guarantee a safe continuation of the flight. In this context, the German BFU already demanded in its 2014 Cabin Air Study, that technical retrofits must be supplemented by extensive medical examinations. These already existing warning systems must be taken into account, especially with regard to the aircraft currently on order (Airbus). Delivery with a bleed air system must no longer be considered.

The health effects of Fume Events have been documented since the end of the 1950s. This has also been described in numerous studies. In particular, human biomonitoring has made it possible to objectify the internal contamination of those affected in the near future by means of human biomonitoring. This contamination could not be found in a non-exposed environment and thus a ubiquitous background contamination could not be plausibly determined. To date, the BG Verkehr has neither included near-accident human biomonitoring nor symptom-related examinations in its catalogue of services for treatment according to Fume Events (<https://www.bg-verkehr.de/redaktion/medien-und-downloads/informationen/branchen/luftfahrt/standardverfahren-fume-events.pdf>).

We call on the EU Commission, the German Government and all responsible parties to ensure that the financial package for the Lufthansa Group is not only tied to climate targets within the framework of equal treatment of the protected assets to be considered, but also and in particular to the unconditional implementation of applicable EU law with regard to construction measures to prevent cabin air incidents and for the health protection of the entire flying population. Germany as a business and economic location cannot and must not afford to fail to use existing technology to protect crew and passengers, and cannot fail to promote world-leading medical expertise to clarify the health consequences.

Our French neighbors have set a goal of making their direct European competitor, Air France-KLM, the most sustainable airline group in the world.

We are certain that Germany can complement this goal with the health measures required for the well-being of passengers and crew members, and can make "our" Lufthansa what it is internationally known for, namely **the healthiest and therefore safest airline in the world.**

Signed

P-CoC e.V. Executive Board