
***

**Recommendation 1- Air Quality and Ventilation**

*FAA should rigorously demonstrate in public reports the adequacy of current and proposed FARs related to cabin air quality and should provide quantitative evidence and rationales to support sections of the FARs that establish air quality-related design and operational standards for aircraft (standards for CO, CO₂, O₃, ventilation, and cabin pressure). If a specific standard is found to be inadequate to protect the health and ensure the comfort of passengers and crew, FAA should revise it. For ventilation, the committee recommends that an operational standard consistent with the design standard be established.*

Office of Primary Responsibility: Regulation and Certification

**Implementation:**
- FAA to seek adoption of new cabin environment standard for all large commercial transport airplanes through the ARAC process.
- This is a cooperative effort with the airline industry, aircraft manufacturers, academia, and other government agencies and foreign authorities.
- Will utilize some information obtained by US and European industry elements (i.e., ASHRAE and European “Cabin Air” air quality projects) to assist in adoption of a new air quality standard on large commercial transport airplanes.

**Rationale:**
FAA rulemaking has not kept pace with public expectation and concern about air quality and does not afford explicit protection from particulate matter and other chemical and biological hazards. No present airplane design fulfills the intent of 25.831 because no airplane design incorporates an air contaminant monitoring system to ensure that the air provided to the occupants is free of hazardous contaminants. FAA seeks to adopt existing air quality standards for use on commercial airplanes. Industry has voiced support for this rulemaking because they see a potential for great savings in design and operations if enacted. In addition, the potential relief to operators may enable FAA to mandate retroactive actions. They have expressed agreement that filtration mechanisms [See Recommendations # 2 and 3] and a monitoring system [See Recommendation # 4] are part of the requirements to ensure compliance. Because (a) of the integrated nature of the “package” of rulemaking measures, and (b) the fact that we would like to integrate TSA’s biological and chemical threat sensor technology into the monitoring system, AIR & AVR do not want to proceed at this time to enact only certain portions of the
“rulemaking package”. FAA leverage with industry is predicated on the relief provided by a new standard but it is paid for in terms of the filtration and monitoring system (with the largest share being associated with the monitoring system) necessary to show compliance. Premature enactment of selected portions would jeopardize the successful placement of a monitoring system that is the key to ensuring an acceptable cabin environment on commercial transport airplanes.

Schedule:
FY02.
- Tasking Notice for this ARAC will be published in the 3rd Quarter FY02.
- A “kick-off” meeting held in the 4th Quarter FY 2002.
- Some data will be available later this year (4th Qtr FY02/1st Qtr FY03) that can help establish a background “air quality” level for airplanes.

FY03
- FAA and industry will complete an evaluation of:
  - ozone converters by 6 months after initiation of ARAC (2nd Qtr FY03).
  - advanced catalytic converters by 9 months after initiation of ARAC (3rd Qtr FY03).
  - existing particulate filtration systems by 6 months after initiation of ARAC (2nd Qtr FY03).
  - advanced gaseous filtration systems by 9 months after initiation of ARAC (3rd Qtr FY03).
  - existing air quality standards by 12 months after initiation of ARAC (4th Qtr FY03).
- Additional results from industry and FAA surveillance programs due in 4th Qtr FY03 will also provide clarification on existing “air quality” levels.
- FAA will coordinate with NASA & TSA as part of the ARAC activity to determine the availability of sensor technology to detect air contaminants.

FY04
- FAA and industry will complete an evaluation of the availability of sensor technology to detect air contaminants by 18 months after initiation of ARAC (2nd Qtr FY04).
- Final results from industry and FAA industry surveillance programs will be available 2nd Qtr FY04 and will provide clarification on existing “air quality” levels.
- TSA may have established recommendations for contaminant detectors at that time and FAA may utilize that input in the final rule.

ARAC will provide either (a) a consensus recommendation or (b) majority/minority positions to FAA. Recommendation will be received in 4th Quarter FY2004 (predicated on tasking ARAC in Federal Register by end of 3rd Quarter FY 2002).