

ASHRAE SSPC161P Meeting Minutes

(Approved)

February 8, 2023

1:00 – 3:00 pm EST

Hybrid meeting format

Atlanta, GA

Attendees—

Voting members in attendance, either in person (IP) or virtual (V) (12 of 16):

Catherine Thibaud, Airbus (Committee Chair) (IP)
Stephen Trent, Boeing (Vice-Chair) (IP)
Judith Anderson, AFA-CWA (Secretary) (IP)
Allison Glaser, American Airlines (V)
Ben Thiesse, American Airlines (IP)
Byron Jones, KSU (V)
Daniel Tandoi, Vereinigung Cockpit (V)
Frank Brehany, passenger representative (V)
Karen Reilly, ALPA (V)
Lubos Forejt, Honeywell Aerospace (IP)
Richard Fox, Aircraft Environment Solutions, Inc. (IP)
Troy Winters, CUPE (V)

Voting members absent:

Aaron Engel, Fresh-Aire UV
Don Largent – AAF-Flanders
Michael Massoni, TWU Local 556
Shelby Taylor, Pexco Aerospace

Non-voting members present:

Andreas Bezold, Airbus (IP)
Mark Weber, Staff Liaison (V)
Stephanie Licht, Boeing (IP)

Non-voting members absent:

Allen Johnston, Green Tech Environmental
Chris Witkowski, AFA-CWA (organizational)
Gwelen Paliaga, SPLS liaison
Jerome Johnston, Boeing
Tim Ahn, Clean & Science Co.

Guests:

David Space, Boeing

Florian Mayer, Fraunhofer

Ken Warren, Seatac Airport

Larry Schoen, Schoen Engineering Inc.

Xuchen Wang, Health Way Home Products

- Catherine Thibaud welcomed attendees, reviewed the meeting agenda, and reviewed the ASHRAE code of ethics commitment.
- Judith Anderson confirmed that we have a quorum (12 of 16 voting members in attendance).

Membership:

- Catherine Thibaud noted that, effective July 1, 2023, her term as Chair will end and she will roll off the committee; then, Stephen Trent will become Chair. Judith Anderson nominated herself to be Vice Chair. Michael Massoni seconded. In this case, the position of Secretary would be open; members were encouraged to apply.

Old business:

- Judith Anderson presented the actions of the ASHRAE Marker Compound Task Group which she has chaired since February 2022. Other members are Andreas Bezold, Catherine Thibaud Ben Thiesse, Byron Jones, Frank Brehany, Richard Fox, Stephanie Licht, and Stephen Trent. The team has almost finished the first draft of “Appendix B: Real-time bleed air contamination markers” intended for Guideline 28. It includes text on existing measurements, and pros/cons of measuring UFP, fine particles, and gaseous compounds (CO, CO₂) to indicate the presence of different sources of bleed air contaminants. Next steps are to review/refine the proposed informative Appendix B (G28) and then to work through comments and proposed edits to Section 8 (G28). The group intends to continue to meet virtually twice per month and will circulate both draft documents to the committee, once complete.
- Catherine Thibaud presented an overview of: (1) CEN TR17904 document (“Cabin air quality on civil aircraft – Chemical compounds” published in October 2022); and (2) EC-funded “CAQ 3” research which she said includes a project to inject oil into the air within in a simulator, expose mice to the fumes, and then collect observational and physiological data, in addition to HEPA filter analysis and a review of the toxicity of some of the constituents of oil fumes. [Note: NRCWE and Fraunhofer both reported that the mice will be exposed for 20 days total over a 28-day period.]
- Richard Fox (Technical Lead for the FAA Phase II Bleed Air Contaminant Sensor Research) presented an overview of the Kansas State University (KSU) research. The final test planned

is on-wing, on-ground from 15-19 May 2023 on an FAA owned Boeing 747-200SP aircraft located at Atlantic City Airport. The team will introduce known levels of oil into the engine bleed air of one engine, and into the APU Inlet, and hydraulic fluid into the APU inlet. Data will be collected with a variety of real-time sensors. Laboratory samples will also be collected for analysis. The team expects to submit the final report to the FAA by late November 2023. The US Navy, US Air Force, and FAA Civil Aeromedical Institute (CAMI) researchers will also be present and collect measurements/make observations. FAA CAMI intends to write a report to Congress on the toxicology of exposure to constituents in oil/hydraulic fluid fumes. Oil will be injected into the bleed air under two conditions intended to mimic idle (approximately 175-200°C) and engine thrust (approximately 250-275°C), depending on system conditions and constraints. The actual conditions will be reported in due time. In the final phase of the study, they will simulate “worst-case” APU contamination of oil. Sensors will be evaluated on potential to detect the injected fluids and decomposition products under various conditions in four locations: upstream of the aircraft (ambient air), at the inlet to the high temp ozone converter, downstream of the ozone converter, and downstream of the coalescer. This study is considered responsive to Section 326(c) of the FAA Reauthorization Act of 2018 (see: <https://www.congress.gov/bill/115th-congress/house-bill/302/text>).

New business:

- Stephen Trent announced that he is resigning as Vice-Chair and leaving the committee because Boeing has decided to no longer support the SSPC161P committee. Reasons cited were overlap with SAE aircraft committees, insufficient adoption of committee documents by industry, and dwindling committee participation. Frank Brehany questioned the appropriateness of this major announcement that was given without advance notice.
- Stephen Trent proposed that the standard and guideline documents should be maintained via “Periodic Maintenance” (PM) instead of the current “Continuous Maintenance” (CM) revision process, with a committee that would regroup every five years according to ASHRAE’s revision cycle. A long discussion followed. Each attending committee member reported on whether they would support a PM or CM revision process going forward. Stephen Trent, Stephanie Licht, and Catherine Thibaud said that they are in favor of PM citing their reasons as ongoing research, declining committee participation, and a lack of utilization of the current document. Allison Glaser, Daniel Tandoi, Troy Winters, Judith Anderson, Frank Brehany, and Don Leblanc expressed their support for CM, noting the significant time it would take to review the whole document each five years, the usefulness of the current documents as “best practice” references, and the broad scope (ventilation, pressure, supply air quality, filtration, thermal, pesticides, etc.) compared to other cabin air committees. Neither Lubos Forejt nor Byron Jones had strong opinions on either option but both proposed that our committee drafts and follows a Work Plan, as a matter of priority. Catherine Thibaud agreed to draft a Work Plan.
- Catherine Thibaud announced that Standard 161 will be republished in 2023 and Addenda A-F will be rolled into the revised publication.

- Ben Thiesse asked if our committee has a defined scope. Also, who is our audience and how is this different from other aircraft air quality air committees? He also proposed that we recruit more industry participants, given Boeing's confirmed departure and Airbus' possible departure.

Any other business:

- In light of Stephen Trent's departure, Judith Anderson offered to serve as Chair.

ACTION ITEM: Per Don Leblanc's request, current members are invited to submit a formal invitation to colleagues who could make a positive contribution to the committee.

- Allison Glaser thanked Boeing and Airbus for their service to the committee.
- We will have our virtual summer meeting in June 2023. Catherine will circulate an agenda in advance of that meeting.
- Judith Anderson made a motion to close the meeting. Catherine Thibaud seconded the motion. Everyone was in favor.

Meeting adjourned.