

ASHRAE SSPC161 Meeting Minutes (final)

Orlando, FL – 10-February-2025
In-person and virtual participation

Voting members – present (11 of 17)

Richard Fox, Chair (in-person)
Ben Thiesse, Vice Chair (in-person)
Judith Anderson, Secretary (in-person)
Frank Brehany (online)
Lubos Forejt (in-person)
Allison Glaser (online)
Allen Johnston (online)
Josh Kelton (online)
Byron Jones (online)
Daniel Tandoi (in-person)
Catherine Thibaud (in-person)

Voting members – absent (6 of 17)

Tim Ahn
Aaron Engel
Michael Massoni
Karen Reilly
Chloe Shen Morosetti
Troy Winters

Non-voting members – present (4 of 9)

Andreas Bezold (in-person)
Mark Weber (ASHRAE staff; in-person)
Annette Uda (online for the first hour)
Tristan Loraine (online)

Non-voting members – absent (5 of 9)

Susan Michaelis
Gwelen Paliaga (SPLS Liaison)
Christopher Vincaino
Christopher Witkowski

Guests – present

Don Leblanc, National Research Council Canada (in person)
John Vinson, Satair

Richard Fox welcomed everyone and led introductions.

Judith Anderson confirmed that we have quorum (11 of 17 voting members in attendance).

1. OLD BUSINESS

- 1.1 The minutes for the past meeting (11-June-2024) were distributed to committee members by email shortly after the meeting and were approved by an email ballot which closed on 30-Aug-2024.
- 1.2 At the 11-June-2024 meeting, the committee was tasked with discussing and deciding if our proposed operational best practices to control air contaminants and thermal conditions should be drafted as a stand-alone guideline document or be incorporated into Standard 161. We chose to publish as a stand-alone guideline. In Oct-2024, ASHRAE Standards Committee assigned our document a number (G48P).
- 1.3 Judith Anderson presented a short summary of the G48P task group work (slides attached).
- 1.4 Committee members discussed and, collectively, made some additional edits to the title/purpose/scope (TPS) of G48P and drafted a definition for the word “occupied” to be added to Section 3.1:

TITLE: Operational Best Practices for Air Quality within Commercial Aircraft

1. PURPOSE

This guideline serves as a companion to ASHRAE Standard 161 by describing operational best practices recommendations to assist ~~air-carriers~~ aircraft operators to meet or exceed Standard 161 requirements.

2. SCOPE

- 2.1 This guideline applies to the occupied portions of commercial passenger air-carrier aircraft with a seating capacity of carrying 20 or more passengers during ground and flight operations, and certified under the authority of either the Federal Aviation Administration or another cognizant airworthiness body. and to the occupied portions of cargo aircraft with a maximum allowable gross takeoff weight greater than 19,000 pounds during ground and flight operations.
- 2.2 This guideline considers control of cabin air contaminants, infectious aerosols, thermal conditions, and related factors such as humidity and pressure. ~~that may affect air quality.~~

occupied: the state of the flight deck and cabin when one or more crewmember, passenger, or ground-based worker is present

- 1.5 Judith Anderson proposed a motion to approve the TPS of G48P and the definition of “occupied,” as discussed and written at today’s meeting, with the understanding that the same purpose, scope, and definition will be incorporated into Standard 161 and Guideline 28, per direction from ASHRAE Standards Committee. Daniel Tandoi seconded the motion.

The motion passed: 11:0:0 (those in favor: Anderson, Brehany, Forejt, Fox, Glaser, Johnson, Kelton, Jones, Tandoi, Thibaud, and Thiesse)

Note: The approved TPS does not need to go out for another public review. However, our committee must complete and return the ASHRAE form “Proposed Changes to an Approved Title, Purpose and Scope” to the Standards Committee.

ACTION: Judith Anderson will complete the form, confirm with Richard Fox, and submit it to the Standards Committee. (**Note:** Completed, approved, submitted on 14-Feb-2025.)

- 1.6 Committee members collectively drafted a response to the one supportive comment that had been submitted on the TPS during the 8-Nov-2024 to 8-Dec-2024 public review.

Ben Thiesse proposed a motion to approve the response to Byron Jones’ supportive comment on the TPS of G48P with the language we agreed upon today. Allison Glaser seconded the motion. Motion passed: 11:0:0 (those in favor: Anderson, Brehany, Forejt, Fox, Glaser, Johnson, Kelton, Jones, Tandoi, Thibaud, and Thiesse)

2. NEW BUSINESS

- 2.1 Committee members reviewed and edited the draft Section 4.1 of G48P regarding a temperature limit for boarding.

ACTION: Ben Thiesse will contact members of SAE AGE-3 committee to ask if there is a formula or reference to adjust a dry-bulb temperature limit for relative humidity, and also about recommendations to maintain ground air equipment.

ACTION: Richard Fox will check SAE document ARP85 (Air Conditioning Systems for Subsonic Airplanes) for a suitable temperature limit below which crew and passengers should not board.

ACTION: Judith Anderson will incorporate the revised TPS into today’s draft of G48P with thermal section revisions and will circulate the draft to committee members. (**Note:** Revised draft circulated 14-Feb-2025.)

ACTION: Ben Thiesse will circulate an email invitation to committee members for the G48P editing telecon which is held on the third Tuesday of each month at 10:00am PDT/PST starting on March 18. (Note: Invitation sent.)

- 2.2 Ben Thiesse led a discussion on whether committee members think that Standard 241 is a useful and applicable reference to control of infectious aerosols on aircraft. We had consensus that Standard 241 has little relevance but can be cited.

ACTION: Ben Thiesse will circulate the link to the infectious aerosol language that ASHRAE posted online during the COVID-19 pandemic which may be more helpful and relevant. (**Note:** Ben Thiesse provided this link to the ASHRAE Epidemic Task Force related to transportation: <https://www.ashrae.org/file%20library/technical%20resources/covid-19/ashrae-transportation-c19-guidance.pdf>)

Richard Fox updated the committee on FAA-funded research to determine if current commercial technology could detect smoke/odor/fumes from sources including oil, hydraulic fluid, and deicing fluid, among others. All three reports are now published, in addition to three reports by the Naval Medical Research Unit in Dayton, OH:

- First sensor report (May-2022): https://rosap.ntl.bts.gov/view/dot/62770/dot_62770_DS1.pdf
- Second sensor report (Nov-2023): <https://rosap.ntl.bts.gov/view/dot/74237>
- Final sensor report (Jan-2025): <https://rosap.ntl.bts.gov/view/dot/79601> and supporting dataset: <https://rosap.ntl.bts.gov/view/dot/79775>
- Chemical analysis of simulated fume events – test stand (Feb-2024): <https://rosap.ntl.bts.gov/view/dot/74306>.
- Chemical analysis of simulated fume events - on-wing, ground (May-2024)
- <https://rosap.ntl.bts.gov/view/dot/75788>
- Tox. evaluation of simulated fume events - test stand and on-wing, ground (Oct-2024): <https://rosap.ntl.bts.gov/view/dot/79652>

- 2.4 Richard Fox reported that Section 323 of 2024 FAA Reauthorization Bill (became Public Law 118-63) instructs a US National Research Council committee to study the health and safety impacts of onboard thermal conditions for one year in each season.
- 2.3 Andreas Bezold reported on European Commission-funded CAQIII research, Dec-2021 through Dec-2024. He reported that the data collection is complete and that no effects were found, except that diesel fumes had a negative effect on mice.
- 2.5 Our next SSPC161 committee meeting will be virtual on 16-June-2025 starting at 7:00am PDT – 16:00 CET and probably lasting for two hours.

The meeting was adjourned.