

TC 9.3 Transportation Air Conditioning Committee Meeting
ASHRAE Annual Meeting
Atlanta, GA
Atlanta Hilton, Pavilion 7 (2nd Floor)
Monday, June 29th, 2015
2:15 – 6:30 pm

TC 9.3 Meeting Minutes

Total Attendees: 15. 2 Voting Members present of 8 Voting Members. There is not a quorum.

Voting Members Present

Paul Lebbin-Term Expires 6/2016
GD Mathur-Automotive Subcommittee Chair-Term Expires 6/2018

Voting Members Not Present:

Byron Jones-Term Expires 6/2018
Chris McDaniel-Term Expires 6/2015
Fabio Maseo- Non Quorum Voting Member-Term Expires 6/2015
Ann Louise Sumner-Term Expires 6/2016
Bob Rebsamen-Term Expires 6/2016
Raymond s Ter-ionesyan-Term Expires 6/2015

Non Voting Members and Guests Present

Jim Bushnell-Non Voting member
Louis-David Cerise-Guest (not on June or July 2015 Rosters)
Terry Crawford-Guest (not on June or July 2015 Rosters)
Terry Dillon- Guest (not on June or July 2015 Rosters)-mail bounced
Pavel Doubde--Guest (not on June or July 2015 Rosters)-mail bounced
Gary Dutt-Non Voting member
Richard Fox-Non Voting member (Voting member 7/2015 – 6/2017)
Lowell Goudge Guest (not on June or July 2015 Rosters)
Ken Hesser-Non Voting member- Rail Subcommittee Chair
Jerome Johnson – Guest (not on June 2015 Roster, Non Voting member on July 2015 Roster)
Donald Lebranc-Guest (not on June or July 2015 Rosters)
Matt Ligh-Guest (not on June or July 2015 Rosters)-mail bounced

Combined Opening by Richard Fox. Chris McDaniel unable to attend. This is the second combined TC9.3 / subcommittee meeting.

Introductions –

Meeting Minutes – Approved Electronically between Winter and Annual meeting

Membership & Roster – Richard Fox will communicate with ASHRAE to clean up committee roster further.

New Roster Not available o-line to see changes to committee structure that go into effect on July 1. Non-voting membership and guests at the meeting were developed by reviewing rosters after July 1, 2015.

Separate into Subcommittees

Aviation – Gary Dutt

Automotive - G.D. Mathur

Rail - Ken Hesser

Reports from Subcommittees

Aviation Subcommittee-

- Discussion concerning details of 1262-RP. Harvard has published their portion of the project. All tests and data collection complete. The data analysis and report continues to be very late, and a realistic completion date is unknown. Project completion was severely delayed due to an illness of a key project member at Battelle. Battelle should be responsible for finding a suitable backup and should not be single threaded to avoid delays like these in the future.
- Discussion concerning details of 1603-RP. Project has essentially been canceled. Could not get through the literature review phase. Several major disagreements between the contractors and the RAC effectively canceled the project.
- Discussion concerning ACER, and the current lack of funding for research activity.
- Discussion concerning the NASA VIPR project. Gary Dutt stated that some of the findings may be published which could be useful for ASHRAE members, but he thinks much of the findings may be considered proprietary.
- Richard Fox discussed some updates from SAE. Research project concerning PM 2.5 and Ultra Fine Particles (UFPs). Can UFPs be used as an appropriate “marker” to indicate air quality?
- Paul Lebbin discussed a bio-fuel research project being conducted at the NRC Canada. They are testing a Dassault Falcon 20 with bio-fuel and Avgas. They have a Lockheed T-33 chase plane taking measurements of the exhaust air. There may be some opportunity to also measure bleed air quality during these tests. There is room for instrumentation in the Falcon 20 and this would be good data to have.
- CNRC have an engine wind tunnel capable of accommodating engines up to the size used in a B737. The lab often has the General Electric CF700 on the test stand, which is the same engine used in the Falcon 20. We developed high level plans to use the CF700

engine to collect measurements off of the bleed air. We even went one step forward of using our aerosols team to inject oil into the bleed air to simulate a failure event. We never got far as management wanted industry to participate in the study. If we were to proceed, I would propose that we start with the CF700 test stand first as the operational costs are lower and is more readily available than the Falcon 20. It will also be easier for us to make modifications to how samples are collected.

- Paul Lebbin set up meetings with our particulate measurement experts in the Ventilation and Indoor Air Quality (VIAQ), Gas Turbine Laboratory (GTL), and Flight Research Laboratory (FRL). The goal of these meetings is to create a rough idea of what we would do to collect UFP and PM2.5 measurements off of the bleed air and cabin return air systems.

TC 9.3 - Rail Subcommittee Report

General

Ken Hesser reported that the GPC-23 Guideline was submitted for industry review in early 2014. The initial group of industry comments (~25) was reviewed by the group during the Seattle Annual Meeting and the second group of industry comments (~40) was reviewed at the Chicago Winter Meeting. Incorporation of the responses for upload into the industry review website was completed and finally reviewed at the Atlanta meeting but due to a lack of quorum the final approval vote will require a letter ballot. The updated GPC-23 document, including the incorporated pre-approved changes will also require a letter ballot.

Research

The sub-committee again expressed an interest in proposing research projects following the release of the GPC-23 document. Two potential topics for research are the monitoring of rail vehicle indoor air quality for several different types of service (urban, commuter and long distance) to observe and record the changes that result for different passenger loads, ventilation rates (fixed and variable if equipped), stop/door opening frequency and external environment. The other related area was to devise a practical means to evaluate passenger comfort in a rail vehicle to recognize the differences in passenger experience and expectations relative to long term (stabilized) existing stationary comfort criteria per ASHRAE 55.

Programs

Pending a volunteer to Chair the program committed, the group expressed interest in organizing a program. One topic would be an overview of purpose, scope and expectations relative to the use of the guideline plus additional presentations that could be solicited to discuss topics such as appropriate refrigerant selection, interior thermal comfort considerations in a transit vehicle and other related topics.

Automotive Report- None (GD Mathur-Please submit)

Research Report-

RP1306 Completed- Still needs project closure form sent to MORTS

RP1262-2 Planning on closing out project by Sept.

RP1603 Terminated

Handbook Report- Richard Fox

Handbook Published in May. Mass Transit Committee will begin to prepare changes for next version.

Adjourned - Attendees agreed that combined meeting format works and should be continued at the next meeting.