

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING  
ENGINEERS, INC.  
Caesar's Palace - Las Vegas**

**TC/TG/MTG/TRG MINUTES COVER SHEET**

(Minutes of all Meetings are to be distributed to all persons listed below within 60 days following the meeting.)

TC/TG/MTG/TRG No. TC 9.3 DATE 1/30/17

TC/TG/MTG/TRG TITLE Transportation Air Conditioning

DATE OF MEETING 1/30/17 LOCATION Las Vegas, NV

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Richard Fox (Chair)	1998			
Byron Jones (Vice Chair)	1987			
Jerome Johnston (Sec)	2015			
Andreas Bezold	2015			
Kevin Glover	2015			
Ken Hesser	2007			
G.D. Mathur	2003			
James Bushnell	1988			
Donald Leblanc	2015			

**DISTRIBUTION**

<i>All Members of TC/TG/MTG/TRG plus the following:</i>	
TAC Section Head: Krishnan Gowri	<a href="mailto:SHx@ashrae.net">SHx@ashrae.net</a> Where x is the section number
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters: (Research, Standards, ALL, etc.)	See ASHRAE email alias list for needed addresses.
Manager Of Research & Technical Services: Mike Vaughn	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

## Meeting Attendance

Includes everyone that attended TC 9.3 and any of the subcommittee meetings. The GPC 23 committee meeting is incorporated into the TC 9.3 Rail Subcommittee meeting. Membership designation shown below relates only to TC 9.3 and does not reflect GPC 23 membership.

Andreas Bezold	Airbus	<a href="mailto:andreas.bezold@airbus.com">andreas.bezold@airbus.com</a>	voting
Lubos Foreit	Honeywell	<a href="mailto:lubos.foreit@honeywell.com">lubos.foreit@honeywell.com</a>	non-voting
Pavel Houdef	Thermo King	<a href="mailto:pavel_houdef@ew.irco.com">pavel_houdef@ew.irco.com</a>	guest
G.D. Mathur	Nissan/Calsonic	<a href="mailto:gd_mathur@ck-mail.com">gd_mathur@ck-mail.com</a>	voting
Donald LeBlanc	NRC Canada	<a href="mailto:don.leblanc@nrc.ca">don.leblanc@nrc.ca</a>	voting
Ken Hesser	LTK Engr. Services	<a href="mailto:khesser@ltk.com">khesser@ltk.com</a>	voting
Jim Bushnell	HVAC Consulting	<a href="mailto:jbushnell@roadrunner.com">jbushnell@roadrunner.com</a>	voting
Aaron McFarlane	Noske-Kaeser Rail	<a href="mailto:amcfarlane@nkrvz.com">amcfarlane@nkrvz.com</a>	non-voting
Ann Louise Sumner	Battelle	<a href="mailto:sumnera@battelle.org">sumnera@battelle.org</a>	non-voting
Ken Warren	Port of Seattle	<a href="mailto:warren.k@portseattle.org">warren.k@portseattle.org</a>	non-voting
Byron Jones	Kansas State Univ.	<a href="mailto:jones@ksu.edu">jones@ksu.edu</a>	voting
Ben Thiesse	American Airlines	<a href="mailto:Benjamin.thiesse@aa.com">Benjamin.thiesse@aa.com</a>	non-voting
TJ Farrell	Intertek	<a href="mailto:Terrence.farrell@intertek.com">Terrence.farrell@intertek.com</a>	guest
Qiao Lu	BE Aerospace	<a href="mailto:qiao_lu@beaerospace.com">qiao_lu@beaerospace.com</a>	guest
Catherine Thibaud-Erkey	UTC	<a href="mailto:thibauc@utc.com">thibauc@utc.com</a>	guest
Jerome Johnston	Boeing	<a href="mailto:jerome.i.johnston@boeing.com">jerome.i.johnston@boeing.com</a>	voting
Richard Fox	Honeywell	<a href="mailto:rfox1956@gmail.com">rfox1956@gmail.com</a>	voting

## Call to Order

Meeting was called to order by Chair Richard Fox at 3:45 p.m., January 30<sup>th</sup>, 2017.

## Research Presentation – RP 1262-2

Presenter Ann Louise Sumner from Battelle was introduced. Presented preliminary results on RP 1262-2: Relate Air Quality and Other Factors to Comfort and Health Related Symptoms Reported by Passengers and Crew on Commercial Transportation Aircraft (Part 2). Project report will go to Project Monitoring sub-committee at the end of February 2017.

## Research Committee Report

Report out from research breakfast. Discussion around particulate sensors that are capable of detecting at low levels would be a topic of interest for research. Discussion about the size and scope of projects that can best be supported by ASHRAE. Andreas Bezhold gave updates on several EU based research projects related to aircraft including: Green Sky, Electric A/C Packs, In-Flight data collection efforts, Bleed air test rig. Discussion surrounding the future of VIPR/ ACER research. Discussion about potential Automobile interior off-gassing regulations.

## **Handbook Sub-Committee**

Request to review and develop comments on the applicable handbook chapter (4 chapters). Go to [authoring.ashrae.org](http://authoring.ashrae.org) to edit the handbook. Discussion around adding summary/ conclusions from RP 1262 into the handbook.

## **TC 9.3 Business**

It was determined that 5 of the 9 voting members were present so quorum requirements are met and the committee can conduct official business.

## **Minutes Approval**

The minutes of the June 20<sup>th</sup>, 2016 meeting were corrected as follows: Correct typo in an email address. Correct typo in reference to RP 1262. The corrected minutes were approved by voice vote.

## **Old Business**

There was no old business.

## **Automobile Committee Report**

An update for the 2019 HVAC APPLICATIONS HANDBOOK, Chapter 10 modifications was given. The chapter's deadline for modification for 2019 handbook is June 2018. G.D. Mathur has started reviewing the chapter and the changes required for 2019 handbook. A soft copy of the current chapter from HB Central was given to Richard Fox at the meeting for distribution to the TC members. The TC members need to review the chapter and submit proposed changes to G.D. Mathur.

Auto has had no programs in last 3 to 4 years. Subcommittee is very frustrated that ASHRAE has not approved our seminar in last 3 years. Members are losing interest as our Subcommittee does not get a seminar/symposium slot.

Auto has no active RTARs. Members discussed possibility of attracting more members from the full committee. Dr. Gursaran proposed that we start discussing the following ideas for a possible RTAR:

- i. Autonomous vehicles
- ii. Cabin IAQ – Dr. Gursaran Mathur to send his research papers to Dr. Fox for distribution to the TC
- iii. Summary of Dr. Gursaran Mathur SAE activities on VOC and IAQ

Auto needs more participation from the ASHRAE members! (Gursaran stated that he has sent the details of this meeting to his colleagues from SAE, Climate Control Committee). Auto requests that TC members to review chapter 10 on Automobile Air-Conditioning and send feedback to Dr. Gursaran Mathur.

## **Marine Committee Report**

No report.

## **Rail Committee Report**

The Rail Transit sub-committee met prior to the General TC 9.3 meeting. There were a total of 12 participants present however only 5 voting members of 11 total thus we did not have a quorum. Ken Hesser, Committee Chair, reported that he attended the Standards group chair's breakfast and found that the GPC-23 sub-group had been organizationally disbanded since the group's decision to adopt continuous maintenance of the GPC-23 document had not been formally communicated to the SPLC leadership. Ken organized a quick letter vote to formalize group approval and advised SPLS that he would confirm formal approval prior to the Tuesday SPLS meeting to reinstate support for the GPC-23 group. Ken also stated that he plans to step down as chair of the committee and asked the group for volunteers and/or suggestions for a replacement. Ed Widdowson, the current committee vice chair, advised that he plans to go into semi-retirement and has sent an email resigning from that position. Thus the Chair and Vice chair positions will be open. It is intended to propose changes in this regard at the upcoming Spring roster update. Rene Beaulieu provided some suggested changes to be made in the GPC-23 document and will formalize his requested for update. Jim Bushnell prepared a draft RTAR for research into rail vehicle air quality monitoring and other related issues. Don LeBlanc, Research Chair, offered to work with Jim to fine tune it into one or more RTARs. Finally, Thad Rogowski, Program Chair, reported that he has not yet progressed a plan/outline for a Rail Transport HVAC program but has several thoughts that he will present in the near future.

## **Aviation Committee Report**

The SPC161 Committee had a quorum in attendance. Addenda A, B, and C to Standard 161 were approved and send to the Standards Council at the meeting in Las Vegas for final approval prior to publication. One public review comment was received for Addendum D. The committee accepted the comment with some modification, which was acceptable to the commenter. The resolved comment will go back to Standards Council and be sent out for a second public review prior to the June meeting in Long Beach. The next meeting of the SPC161 Committee will be by phone on Monday, June 19th at 11:30 AM eastern time and will be scheduled for a duration of 3 hours.

## **Standards Committee Report**

Standards committee did not have a complete report out since the program meeting had not happened yet. A summary of that meeting is below:

At this winter conference 2017, TC 9.3 had a Conference paper session (No. 12) with three contributions. This has been after long time, since TC 9.3 had a program again.

Hans de Ree presented Measurement and exposure of airline staff to tri-cresyl phosphates from engine oil (LV-17-C045); Byron Jones presented the nature of particulates in aircraft bleed air resulting from oil contamination (LV-17-C046); and David Space presented Experimental determination of the characteristics of lubricating oil contamination in bleed air (LV-17-C047). Presentations are available in the Virtual Conference at <https://ashraem.confex.com/ashraem/w17/schedule/index.cgi>

From original interest of 12 authors, just three of them were successful through the submission of abstract and review process. For the next program, along with conference paper session, the seminar session might be considered. The seminar session does not require to submit a paper and a deadline for submission of a presentation is much later (see the deadlines for next applicable conference below).

The next possible chance of TC 9.3 part in conference program is at ASHRAE winter conference in Chicago, IL Jan 20-24, 2018. Chicago program dedicated Track no 5 to Transportation IAQ and Air conditioning. Track Chair is Dimitris Charalambopoulos [dimitris@ashrae.gr](mailto:dimitris@ashrae.gr). Deadline for conference paper abstracts is March 1, for submission of program proposals of seminars opens June 2 and is due August 1. Technical papers have the same deadline as abstracts for conference papers. Since Las Vegas conference, authors are newly required to sign non-bias disclosure about funding, adhere to three strike policy in regard to upload of ppt. More details for guidelines, deadlines and policy for Chicago conference could be found on [www.ashrae.org/chicago](http://www.ashrae.org/chicago).

## **Programs Committee Report**

TC 9.3 sponsored Conference Paper Technical Session 12 at the Las Vegas, NV conference. Application deadline for the Summer 2017 conference is past. Application deadline for the Winter 2018 conference is in March.

## **New Business**

Discussion on sub-committee structure. Byron Jones will continue in the vice chair role, but has no intention of becoming chair. Richard will request a one year extension as chair. Ken Warren will move from provisional non-voting member to non-voting member.

## **Adjournment**

The meeting was adjourned at 6:30 p.m.