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**DRAFT**

**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. 5.1 DATE January 17, 2019

TC/TG/MTG/TRG TITLE Fans

DATE OF MEETING January 14, 2019 LOCATION Atlanta, GA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Armin Hauer	07/01/2018	Walter Mecozzi	07/01/2018	Akshay Bhargava
Zhiping Wang	07/01/2018			Harold Dubensky
Joseph Brooks	07/01/2016			Jaime Yeh
Brian Reynolds	07/01/2016			Jane Miller
Z. Patrick Chinoda	07/01/2018			Asesh K Raychaudhuri
Jay Eldridge	07/01/2016			Douglas Ross
Michael Feuser	07/01/2016			Franco Cincotti
Jay Fizer	07/01/2016			Jeremy T Smith, PE, LEED AP
Brent Fullerton	07/01/2018			Kenneth W Kuntz
Tim Mathson	07/01/2018			Kevin Gildea
Adam Stern	07/01/2018			Kim G Osborn
Craig Wray	07/01/2018			Lee E Buddrus

**DISTRIBUTION: All Members of TC/TG/MTG/TRG plus the following:**

TAC Section Head:	<a href="mailto:SH5@ashrae.net">SH5@ashrae.net</a>
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters (Research, Standards, ALL, etc.)	<a href="mailto:RL5@ashrae.net">RL5@ashrae.net</a> ; <a href="mailto:HRS5@ashrae.net">HRS5@ashrae.net</a> ; <a href="mailto:CTTC5@ashrae.net">CTTC5@ashrae.net</a> ; <a href="mailto:TACchair@ashrae.net">TACchair@ashrae.net</a>
Mike Vaughn, Manager Of Research & Technical Services	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

Note: These draft minutes have not been approved and not the official, approved record until approved by the TC.

## TC/TG/MTG/TRG MINUTES COVER SHEET (con't.)

### **ADDITIONAL ATTENDANCE**

Lee E Buddrus  
Mark VanderKooy  
Paul Francis Bauch  
Peter R Bushnell  
Rich Staute  
Robert Z Smith  
Ronald Lee Wendorski  
Stephen A Idem, PhD  
Xingshun Gao, PE

### **GUESTS**

Sanaae Iyama  
Jay Baggett  
Kevin Gebke  
John Bade  
Mark DeRoo  
Joanna Mauer  
Paul Lin  
Craig Adams  
Roman Zaretsky  
Justin Sikorski  
Bob Valbracht



To approve the minutes of the previous meeting.

Passed unanimously (11-0-0 CNV)

## **5. Items of business**

### **5.1 ASHRAE Code of Ethics**

Chair summarized the ASHRAE Code of Ethics.

### **5.2 TC 5.0 Section Head/Liaison Reports**

TC liaisons or section heads present were given an opportunity to report on their activities.

Dennis Loveday, research liaison, introduced himself.

Larry Smith, Section 5 section head, discussed the TAC proposals, Challenge 2020, system curve issue, and Herman Behls foundation (see Basecamp). Larry asked that feedback forms (regarding the reorganization of the FGs) be sent to him at sh5@ashrae.net.

### **5.3 Chairman's report**

Zhiping Wang and Harold Dubensky accompanied the chair at the Section 5 meeting.

TAC proposed to get rid of website and have basecamp open to public and the primary means of committee communication (no proprietary information). Discussed pros and cons of basecamp vs. the website.

TAC announced that TC's will go away. Replacing functional groups which include TCs (and TGs, MTGs, etc.) with one TC. It was suggested that all TC 5.X form one TWG (as an example).

### **5.4 Old business**

No old business was brought to the floor

## **6. Subcommittee reports**

### **6.1 Standards development subcommittee – Akshay Bhargava**

Akshay sent a call for subcommittee members. Please contact him if you would like to be on the Standards Subcommittee roster.

He reported that

- ASHRAE standards that are referenced by codes can be accessed, read only, from ASHRAE website,
- AMCA 214 had a call for members.

### **6.2 Handbook development subcommittee – Zhiping Wang**

The subcommittee had met on Sunday 1/13

Zhiping reported on the status of the handbook update. He described the member handbook options and the technical portal benefits. He encouraged individuals to look at the ASHRAE glossary and comment on definitions if needed (TC 1.6 responsibility). E.g., the definition of a fan is bad.

Proposed changes to handbook were summarized. A Handbook Subcommittee will be planned in about one month. After the Subcommittee approves the handbook revision, it will be sent, via letter ballot, to the TC for approval.

### **6.3 Research subcommittee – Brian Reynolds**

The subcommittee had met on Sunday 1/13

Brian Reynolds reported on the active research activities:

**6.3.1** RP 1769, Experimental Evaluation of the Efficiency of Belt Drives for Fans

**6.3.2** WS-1829 (Inlet and Outlet System Effects on Multiple Plenum Fans in a Parallel Arrangement (Fan Arrays) for Air and Sound Performance)

Motion ASHRAE TC 5.1-03-2019

Moved by: Brian Reynolds  
Seconded: Craig Wray

“Move to recommend that RAC approve WS-1829 (Inlet and Outlet system Effects on Multiple Plenum Fans) Work Statement.”

Motion ASHRAE TC 5.1- 04-2019

Moved by: Joe Brooks  
Seconded: Craig Wray

“Move to amend this motion to add AMCA as a possible co-funder.”

Passed unanimously (11-0-0 CNV)

Vote on amended motion:

Passed unanimously (11-0-0 CNV)

**6.3.3** New RTAR ‘ Comparison of EC fan & motor vs. traditional fan with induction motor & inverter (Air & sound performance)

**6.3.4** TC 2.4 co-sponsorship 1626

**6.3.5** TC 9.1 co-sponsorship WS 1835 - Characterizing the Performance of Entrained Flow Stacks

Motion ASHRAE TC 5.1 – 05 – 2019

Moved by: Brian Reynold  
Seconded: Craig Wray

“Move to co-sponsor WS 1835.”

In the discussion of this motion there was some concern over the lack of time to review changes made the previous day. It was suggested that this TC discuss with the author, Brad Cochran, the changes made to this WS prior to voting. Brian withdrew motion (concurrence by Craig and the committee).

A remote meeting will be planned for the Research Subcommittee, with all TC 5.1 members invited.

#### **6.4. Program subcommittee –Jaime Yeh**

The program subcommittee had met on Sunday 1/13

Walter Mecozzi resigned as chair of this subcommittee last December and Jaime volunteered and was appointed. It was thought that the Program Subcommittee would meet between face-to-face meeting.

Jaime made a call for subcommittee members. The following program suggestion was made:

Proposal from Chaitanya Johar regarding “Computer Aided Engineering (CAE) and Turbo-machinery (with a focus on fans)” with a possible co-sponsor by TC 5.9. Steve Idem from Tennessee Tech, may have some research that could be provided for the Kansas City program.

Challenge 2020: Larry needs input by March 8, for papers. Larry would like to set an arbitrary deadline by March (name and author). Section 5 Program S/C chairs will get together to discuss (Jaime will set up a meeting.) Suggestions were offered.

#### **6.5 Efficiency metric subcommittee – Tim Mathson**

This subcommittee has not met in over a year. The chair disbanded the efficiency metric subcommittee.

#### **6.6 PMS for RP 1769, Experimental Evaluation of the Efficiency of Belt Drives for Fans**

Brian Reynolds, chair of the PMS, and Mark DeRoo reported on the January 14 PMS meeting

### **7. Website Report – Harold Dubensky**

Website analytics were reviewed over the past year. Data is attached.

### **8. New Business**

#### **8.1 Fan-System Interface – Michael Feuser**

How to correctly determine the HVAC system curve and its intersection to the fan curve to determine the design fan airflow and pressure drop, is not discussed in ASHRAE H/B. This was discussed, I was thought that it should be better explained in the handbook

#### **8.2 TC 5.2 Duct Design Guide**

There was not adequate time to address this topic.

### **9. Time and Place of Next Meeting**

Summer meeting in Kansas City.

## **10. Adjournment**

The meeting adjourned at 6:40 pm EST.

Minutes recorded by,  
Joseph A. Brooks PE

Attachments:    1. Handbook Subcommittee Report  
                    2. Research Subcommittee Report  
                    3. Website analytics

## TC 5.1 Handbook Subcommittee Notes (01/14/2019)

By Zhiping Wang

- ASHRAE has been promoting and encouraging the use of the **Authoring Portal** for developing handbook content. Because of the reported access issues (for example, it only works with the Microsoft IE browser), we decided not to use this tool for the current revision cycle.
- **ASHRAE Technology Portal** hosts Handbook PDF downloads, ASHRAE Journal papers, and ASHRAE research reports – all free for eligible members.
- **ASHRAE Terminology** is a free online glossary of more than 3700 terms related to the built environment, with a focus on HVAC&R and related topics. The subcommittee plans to dedicate some time to review those terms associated with Fan, likely in Kansas City this summer.
- According to the ASHRAE publication schedule, our revised and TC approved “Fan” chapter for the 2020 ASHRAE Handbook volume will be due on **May 30, 2019**, which means we should wrap up the revision by the end of April to leave enough time for the TC approval and submittal.
- For this revision cycle, major changes for our chapter include:
  - Table 1 – new format (for easier read online and future modifications) and more consistent content;
  - FEI and related standards were added to the Selection section;
  - A new section about the instrumented fan inlet cone was proposed and added to the chapter.
  - Craig Wray will revise the sections about system curve and fan laws.
- To meet our deadline, a few web-based subcommittee meetings will be scheduled (likely in Feb. and Mar.) to review and approve all the changes.
- As always, we are open for ideas, suggestions, and Handbook Online stuff.



## **TC 5.1 (Fans) Research Sub-Committee Report January 14, 2019 (Atlanta)**

### Notes from the Research Chair Subcommittee Meeting

1. Research Liaison – Dennis Loveday
2. 7 RTAR's reviewed (6 accepted with comments, 1 rejected)
3. 5 WS reviewed (2 conditionally accepted, 3 returned to TC)
4. Next RAC submission deadline is March 15. MMAD (always the 15<sup>th</sup>)
5. Research Quiz:
  - For projects co-sponsored by multiple TC's, the WS cover sheet must contain the vote tally of all sponsoring TC's – TRUE
  - RL review is before a RTAR TC vote.
  - If a WS is returned with comments, the TC should address the comments, produce a letter stating how the comments were addressed, and resubmit to MORTS – TRUE
6. PMS training – twice a year
7. A draft version of the new PTAR form will be distributed to the Research subcommittee Chairs after Atlanta. Still not ready to implement yet.
8. PTAR goes to Publications Committee and if they support it, RTAR is forwarded to RAC
9. WSP (Work Statement for Publication)

### **WS & RTAR's in progress**

WS and RTAR updates will be distributed (or put in 'Base Camp') after Atlanta).

- 10.1769-RP (Experimental Evaluation of the Efficiency of Belt Drives for Fans)
  - Project is just underway at AMCA Lab. Mark DeRoo is the Principal Investigator.
  - PMS members are Craig Wray, Tim Mathson (Chair), Eric Tinglof, and Brian Reynolds
  - PMS meeting on January 14 prior to main TC 5.1 meeting.
  - First interim report due at the end of February. Includes literature review and test plan.
- 11.WS-1829 (Parallel fans)
  - Authors – Kim Osborn , Patrick Chinoda
  - Several conference calls since Houston
  - WS put in basecamp for committee members to review & comment on prior to Atlanta. Also reviewed in the Sunday Research subcommittee meeting
  - Latest WS-1829 draft (1-13-19) has addressed all the review comments. Ready for committee vote in Atlanta.

12. New proposed RTAR (EC motor and fan)

- Output will be a guideline for comparing EC fan & motor technology vs traditional centrifugal plenum fan with induction motor & controller.
- Authors Tim Mathson and Rad Ganesh. Armin (representing TC 1.11) also contributing.
- Several meetings since Houston including first liaison review.
- Subcommittee review in Atlanta. Need another liaison review before ready for a TC ballot.
- May be more suitable for the new PTAR format (Publication Topic Acceptance Request)
- Proceed with RTAR format for now and convert to PTAR if/when that becomes available.

13. WS 1835 (Brad Cochran) - Characterizing the Performance of Entrained Flow Stacks from TC 9.1, PES has volunteers from TC 5.1. Craig Wray will be on PMS.

- Subcommittee is not opposed to approval of the WS.
- WS was distributed to the TC 5.1
- The S/C recommended a TC vote to approve at main meeting.

14. Co-sponsoring of RTAR-1626 with TC2.4 (Particulate Air Contaminants and Particulate Contaminant Removal Equipment), Energy Implications of Air Filtration in Commercial Buildings –

- Discussed in Long Beach (Brent Stephens)
- Requesting help to rework the RTAR
- Co-sponsorship requires someone from TC 5.1 needs to be on the PMS.
- Did not have time for discussion at the subcommittee meeting.

15. **Are there any ideas, suggestions for Fan Research topics?**

- A call for Fan Research suggestions and RTAR authors went out before Atlanta was and also posted in Basecamp.
- Houston - Load profile (real world) information – John Bade, Gus (AHRI), Dustin, Craig. Design point vs. actual operating point.

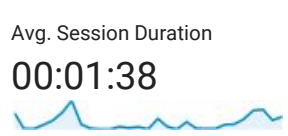
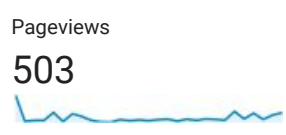
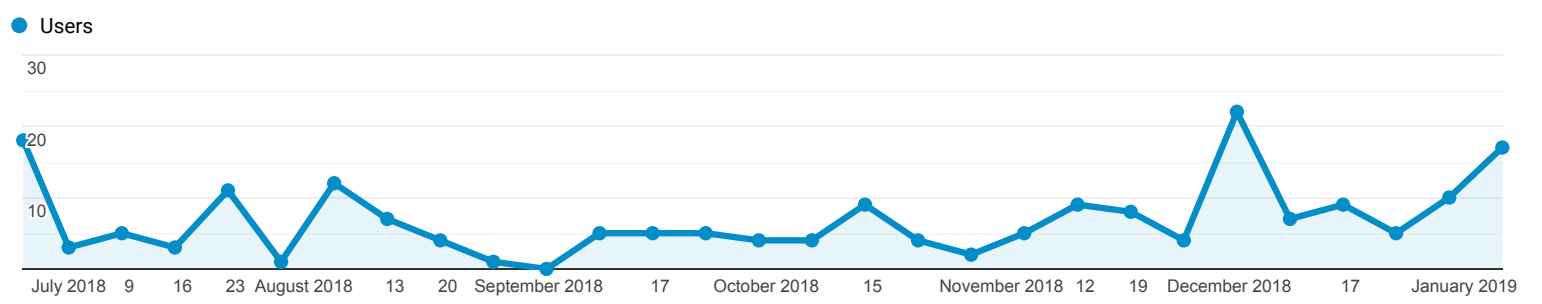


### Audience Overview

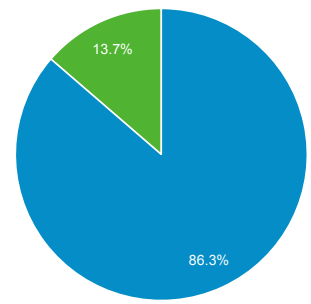
Jun 25, 2018 - Jan 12, 2019

All Users  
100.00% Users

#### Overview



■ New Visitor ■ Returning Visitor



Country	Users	% Users
1. United States	112	64.37%
2. India	5	2.87%
3. Canada	4	2.30%
4. Egypt	4	2.30%
5. Philippines	4	2.30%
6. Brazil	3	1.72%
7. South Korea	3	1.72%
8. Saudi Arabia	3	1.72%
9. Singapore	3	1.72%
10. United Arab Emirates	2	1.15%