



**MINUTES**

**DRAFT**

**TECHNICAL COMMITTEE 5.1**

**2022 Summer Meeting**

**June 27<sup>th</sup>, 2022**

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



**Fans**  
ASHRAE Technical Committee 5.1

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

TC/TG/MTG/TRG No. TC 5.1 July 22, 2022

TC/TG/MTG/TRG TITLE Fans

DATE OF MEETING June 27<sup>th</sup>, 2022 LOCATION Hybrid (Toronto, ON and Virtual)

Attendees				
Name	Affiliation	Status	YEA	Notes & Subcommittee(s) of Interest
Wang, Zhiping	Morrison Products	Voting	No	TC Chair
Reynolds, Brian	Trane	Voting	No	Research Sub Comm Chair
Osborn, Kim	Nortek Air Solutions	Voting	No	
Fullerton, Brent	Loren Cook	Voting	No	
Dubensky, Harold	Johnson Controls Inc.	Voting	No	Webmaster
Raychaudhuri, Asesh	US Dept of Veterans Affairs	Voting	No	
Sterne, Adam	ACME Eng. & Manu. Corporation	Voting	No	
Ganesh, Rad	Twin City Fan	Voting	No	MNQ
Chinoda, Patrick	Revcor	Voting	No	Handbook Sub Comm Chair
VanderKooy, Mark	Greenheck	CM	Yes	TC Secretary
Kuntz, Ken	Greenheck	CM	No	
Lyda, Michael	Advanced Energy	CM	Yes	
Kauffmann, Matt	Daikin Applied	CM	Yes	Standards, Handbook
Wray, Craig	Consulting Engineer	CM	No	
Brooks, Joe	AMCA International	CM	No	Standards Sub Comm Chair
Yeh, Jaime	AHRI	CM	Yes	
Sanchez, Greg	TYLiu	CM	No	
Miller, Jane	Twin City Clarage	CM	No	
Gebke, Kevin	DuctSox Corp.	CM	No	
Wang, Gang	University of Miami	CM	No	
Ross, Douglas	M.K. Plastics	CM	No	
Bissler, Robert	Morrison Products	PCM	Yes	
Dunbar, Nicky	NEEA	PCM	No	
Jenkins, Andrew	Trane	Guest	No	
Nowak, David	AMCA International	Guest	Yes	
Mohsina, Nazme	2050 Partners, Inc.	Guest	No	
Paas-O'Brock, Marelle	Infinitum Electric	Guest	Yes	
Trimble, Steve	Regal Rexnord	Guest	No	
Gross, Greg	CPP Wind Engineering	Guest	No	
Marple, Kevin	Benz Air	Ex Officio	No	Section 5 Head
Smith, Larry	Linx Industries	Ex Officio	No	TAC Chair

Absent Voting Members				
Mathson, Tim	AMCA International	Voting	No	TC Vice Chair
Stauter, Rich	Carrier	Voting	No	Program Sub Comm Chair
Johar, Chait	Aaon	Voting	Yes	MNQ
Bade, John	California Investor-Owned Utilities	Voting	No	

CM: Corresponding Member; PCM: Provisional Corresponding Member; MNQ: Member Non-Quorum.

<b>DISTRIBUTION: All Members of TC plus the following:</b>	
TAC Section Head:	<a href="mailto:SH5@ashrae.net">SH5@ashrae.net</a>
All Committee Liaisons, such as Research, Standards, Handbook, Staff, etc.	See ASHRAE email alias list for needed addresses.
Mike Vaughn, Manager Of Research & Technical Services	<a href="mailto:MORTS@ashrae.net">MORTS@ashrae.net</a>

## ASHRAE TC 5.1 Fans

### Minutes of the Hybrid Meeting (In person in Toronto, ON, and Virtual)

Monday June 27<sup>th</sup>, 2022

#### 1. Call to Order at 2:50 pm EDT

Meeting was called to order at 2:50 pm ET. Due to poor internet connection at the conference center, the meeting started as in-person only, but switched to hybrid format part way through the meeting via a member's cell phone.

#### 2. Roll Call

##### TC 5.1 voting members:

Ziping Wang – Chair  
Z. Patrick Chinoda – Handbook S/C Chair  
Brian Reynolds – Research S/C Chair  
Dr. Rad Ganesh - MNQ  
Harold Dubensky - Webmaster  
Brent Fullerton  
Kim Osborn  
Aresh Raychaudhuri  
Adam Sterne

##### Non-Voting S/C Chairs:

Mark VanderKooy – Secretary  
Joseph Brooks – Standards S/C Chair

9 (out of 13 total) voting members were present, and a quorum was established. All attendees were asked to report their attendance using either the in-person or online sign-in sheet.

##### TC 5.1 Leadership and Voting Members for next society year (07/01/2022-06/30/2023):

Tim Mathson – Chair  
Harold Dubensky – Vice Chair  
Brian Reynolds – Research S/C Chair  
Dr. Rich Stauter – Program S/C Chair  
Dr. Rad Ganesh  
Chaitanya Johar  
John Bade  
Kim Osborn  
Aresh Raychaudhuri  
Eric Tinglof  
Jay Eldridge  
Greg Wagner  
Jaime Yeh

##### Non-Voting S/C Chairs:

Mark VanderKooy – Secretary  
Z. Patrick Chinoda – Handbook S/C Chair  
Joseph Brooks – Standards S/C Chair  
Brandon Diaz – Webmaster

#### 3. Adoption of Agenda

The draft agenda was posted to the TC 5.1 Basecamp (<https://3.basecamp.com/3106353/buckets/8415694/uploads/4980952209>) and website (<http://tc0501.ashraetcs.org/>) prior to the meeting.

The agenda was adopted by consensus.

#### 4. Approval of the Previous Meeting Minutes

The last meeting of this committee was held on January 31<sup>st</sup>, 2022 in Las Vegas and virtually. After the meeting, the draft minutes were posted on TC 5.1 basecamp (<https://3.basecamp.com/3106353/buckets/8415694/uploads/4746395378>) and website (<http://tc0501.ashraetcs.org/>) on March 17<sup>th</sup>, 2022.

**Motion 1:** To approve the minutes from the previous meeting as written.

**Moved by:** Patrick Chinoda

**Seconded by:** Brent Fullerton

**Motion Passed Unanimously**

#### 5. Items of Business

##### 5.1. ASHRAE Code of Ethics

In this and all other ASHRAE meetings, the ASHRAE Code of Conduct requires us to act with honesty, fairness, courtesy, competence, integrity, and respect for others, and that *“we shall avoid all real or perceived conflicts of interest whenever possible”*. (See full Code of Ethics: <https://www.ashrae.org/about/governance/code-of-ethics.>)

##### 5.2. Chair's Report - Zhiping Wang

###### 5.2.1. TC Membership Report

There are currently 100 members on the TC 5.1 roster. The TC membership consists of 11 regular voting members, 2 non-quorum voting members, 61 corresponding members, and 26 provisional corresponding members. We currently have 27 YEA members. We have added 9 new members since the last meeting. The TC will have a leadership and voting membership change effective on July 1, 2022.

###### 5.2.2. Functional Group Evaluation Workbook (FGEW) Review/Discussion

According to the recently updated FG MOP, discussion and confirmation of the FG status will be an annual activity and an agenda item at the Winter meeting. Since we didn't do it at the 2022 winter meeting, the FGEW for TC 5.1 prepared by the chair was reviewed at this meeting. The FGEW will be uploaded to Basecamp for members to review and/or comment. Please note the FGEW is a subjective evaluation with the items in the FGEW being color coded (green, yellow, and red) to provide a visual indication of how the TC is performing. Overall, this TC has been performing fairly well with the majority of the items being green.

The chair also asked that TC members consider how we might act on those inactive members. It was recommended that the TC work to re-engage them, or that they be removed from the TC roster.

### **5.2.3. TC's Recommendation to TAC (Continue as a TC, Merge with another TC/TG/TRG, or Dissolve the TC?) – Need Motion and Vote**

**Motion 2:** For TC 5.1 to continue to operate as an independent TC.

**Moved by:** Rad Ganesh

**Seconded by:** Patrick Chinoda

**Motion passed unanimously.**

## **5.3. Liaison Reports**

Kevin Marple – Section Head 5 report:

- Leadership tutorials are available on TAC's website. All TC members are encouraged to view the tutorials.
- Former TC MOP has been split/changed to Functional Group (FG) MOP and Multidisciplinary Task Group (MTG) MOP.
- ASHRAE Ventilation 2022 conference was held the week prior to ASHRAE. The next ASHRAE Ventilation Conference will be held in 2025. The conference typically consists of conference papers, technical papers, seminars, and forums. TC 5.1 was encouraged to engage in the ASHRAE Ventilation 2025 conference due to the TC's pertinence to ventilation.

## **5.4. Old Business**

### **5.4.1. Follow-up on Mentoring Program for YEA Members**

A notice was sent out to YEA members informing them to reach out to the chair if they would like help getting involved in the TC and/or would like to be paired with a mentor. Brent Fullerton will continue leading the mentorship program for our TC.

## **5.5. New Business**

The US Department of Energy (DOE) has pre-published a Notice of Proposed Rulemaking (NPR) of a test procedure for commercial and industrial fans and blowers. Some members thought the TC should consider doing a forum during the next conference, and/or have a discussion during the next TC meeting regarding this NPR. The DOE will hold an informative webinar on the NPR on August 2<sup>nd</sup>, 2023.

## **6. Subcommittee Reports**

The combined subcommittee (Handbook, Research, Standards, Program, and Long Range Planning) virtual meeting was held on June 23<sup>rd</sup>, 2022.

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

The website is up to date, but we lost the website tracking since Feb. 2022. Thus, no analytics report available for this meeting. The tracking has been restored and we now have tracking going forward from July 2022. Brandon Diaz will assume the webmaster role starting July 1, 2022.

### **6.2. Standards Subcommittee – Joe Brooks**

Since January new standards of interest to this TC that have been approved include:

- AMCA 250: Laboratory Method of Testing Jet Fans for Performance
- AMCA 240: Laboratory Methods of Testing Positive Pressure Ventilators for Aerodynamic Performance Rating

AMCA and ASHRAE revised their joint agreement for AMCA 210/ASHRAE 51, Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating. A solicitation of committee members will be distributed soon.

CSA is working on a Benchmark Energy Factor (BEF) for industrial air movement systems

The updated standards document will be uploaded to our basecamp.

### **6.3. Handbook Content Development Subcommittee – Patrick Chinoda**

The handbook subcommittee meeting was held on June 23, 2022. Several terms were reviewed and revised and sent back to the WG for review. A subcommittee meeting will be held to review the revised terms.

A list of FAQs is being developed with the objective of posting them to the TC website. The TC will need to vote on the proposed answers to each FAQ. They can be voted on at any time and don't need to align with the handbook review cycle.

[asktac@ashrae.net](mailto:asktac@ashrae.net) has been implemented as an alternative to FAQs. Rather than FAQs, this email can be used so questions are channeled through the appropriate TC.

**Action Item:** Brandon Diaz to post this email address to the website (under FAQs) indicating that general questions can be sent to this email.

### **6.4. Program Development Subcommittee – Rich Stauter**

TC 5.1 cosponsored a seminar with TC 2.6 at the Toronto conference. The topic was fan acoustics and how to optimize in various applications and Rad Ganesh was one of the speakers.

TC 5.1 is planning to develop a seminar to cover current belt drive efficiency research project for the next winter conference in Atlanta. We may reach out to TC 1.11 to ask them to co-sponsor and even have a motor expert to discuss motor/drive efficiency.

TC 5.1 is working with AMCA to hold a short course on fan fundamental at the ASHRAE conference.

Seminar abstracts are due in early August for Atlanta conference.

#### **6.5. Research Subcommittee – Brian Reynolds**

Subcommittee meeting was held on June 23, 2022. Belt drive research project is in process. Data collection is complete and data analysis and report are in process. Project should be complete in the next few months. Tracking towards reviewing final report on July 14, 2022. TC members should see a letter ballot from the PMS in August.

The application for research project on induced flow fans (RP-1835) is under review and should be voted on during the TC 9.10 meeting on June 28, 2022.

TC 5.1 has conducted six ASHRAE sponsored research projects over the last 20 years.

Due to the loss of revenue, ASHRAE has reduced research expenditures. Not looking at URPs for the time being. Only looking at funding existing projects where a contract is in place.

RAC reviewed 2 work statements, 2 RTARs, and awarded 8 research projects for bid.

ASHRAE is switching to a web-based process for managing research projects.

Reminder to the committee that PMS meetings are open to the public.

The Research Subcommittee Chair's Report is attached.

#### **6.6. Long Range Planning Subcommittee – Zhiping Wang**

Emphasis on developing short course(s) for ASHRAE and developing YEA mentoring program to better attract and engage YEA members. TC may consider having YEA subcommittee. Updated long range plan is posted to Basecamp (<https://3.basecamp.com/3106353/buckets/8415694/uploads/5081775559>) and will be posted to the TC website as well.

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

Coinciding with the 2023 ASHRAE winter conference in Atlanta. Conference scheduled for February 4<sup>th</sup> through 8<sup>th</sup>, 2023. Meeting format TBD.

#### **8. Adjournment – The committee adjourned at 4:26 pm EDT**

## TC 5.1 (Fans) Research Sub-Committee Report

June 27, 2022 (Toronto)

Brian Reynolds

The Research Subcommittee Chair Meeting was attended virtually on June 27.

- Due to the loss of AHR Expo income the last two years ASHRAE has had to cut back on our research project expenditures, and particularly on grants and awards. URP's will not be considered for now.
- The priority is to maintain the ability to fund ongoing projects where a current contract is in place.
- New RAC officers and members were announced.
- Annual 2022 Meeting

2 Work Statements

2 Research Topic Acceptance Requests

8 Research projects awarded for BID (pending)

- PMS and PES training modules are now complete.
- Proposal Evaluation Subcommittee training is now available on the public ASHRAE Web site.
- RAC and PubCom have now accepted the first PTAR and are working to create the first funded publications.
- RAC Initiative – Web-based process to track Research project documents
- Reminder that PMS meetings are open to the public. Invite Mike Vaughn and RL.

Research Liaison Report – Jin Wen (not present)

The TC 5.1 Research virtual subcommittee meeting was held on June 23, 2022.

Tim Mathson, AMCA provided an update for RP 1769 (Experimental Evaluation of the Efficiency of Belt Drives for Fans)

- Testing has been completed.
- A general model and specific model have been developed.
- The PMS will meet on July 14 to review the final report. The progress reports need to be up to date for payment.
- Then vote whether to recommend approval by the TC which would be by letter ballot probably in August.
- A program is tentatively scheduled for Atlanta.
- RP 1769 PMS members are Zhiping Wang, Eric Tinglof, Franco Cincotti, and Brian Reynolds (Chair)

## WS & RTAR's

TC 5.1 does not currently have and RTAR's or Work Statements in progress.

WS 1835 (Brad Cochran) - Characterizing the Performance of Entrained Flow Stacks from TC 9.1. TC 5.1 is co-sponsor. In Las Vegas it was reported that WS 1835 needs to go out for new bid. *Is there any update?*

Here is a link to the complete list of MTG.HPAS (formally called MTG.EAS) ideas and is publically available at:

[https://urldefense.com/v3/https://buildings.lbl.gov/publications/air-handling-system-modeling\\_!!LkoGuYl8\\_g!kYkZLB6HM-f3YNIUnn23Xo-w1cQmv90TKPekbYpALZkRQB6lqfwucOpyHOMDH94\\$](https://urldefense.com/v3/https://buildings.lbl.gov/publications/air-handling-system-modeling_!!LkoGuYl8_g!kYkZLB6HM-f3YNIUnn23Xo-w1cQmv90TKPekbYpALZkRQB6lqfwucOpyHOMDH94$)

The MTG list could be a source for fan research ideas.

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

A call for Fan Research suggestions and RTAR authors went out before Toronto and also posted in Basecamp. Fan research topics need to be more suitable for ASHRAE research than for manufacturer research.