

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS,
INC.**

**1791 Tullie Circle, N.E./Atlanta, GA 30329
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TC/TG/TRG MINUTES COVER SHEET

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

TC/TG/TRG NO TC 5.1 DATE July 23, 2007

TC/TG/TRG TITLE Fans

DATE OF MEETING Monday June 25, 2007 LOCATION Long Beach, CA

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Joe Brooks	2006	L.Z. Zeng	2005	Paul Heitzmann
John Cermak	2003	Tim Mathson	2004	Zhiping Wang
Charles W. Coward	2006	Rad Ganesh	2003	Franco Cincotti
Brian Reynolds	2006			Kim Osborn
George Gamble	2003			Mark Fly
David Carroll	2004			Ted Carnes
Brent Fullerton	2006			Armin Haner
John Murphy	2005			Josh Schubert
				Asesh Raychaudhuri
				Steve Idem
				Tom Sobeiski
				Sriram Somasundaram
				Fred Kohless – Part Time
				Gaylon Richardson – Part Time

DISTRIBUTION

<i>All Members of TC/TG/TRG plus the following:</i>	
TAC Section Head: <u>Gaylon Richardson</u>	
TAC Chair: <u>Patricia T. Graef</u>	
All Committee Liaisons As Shown On TC/TG/TRG Rosters:	Handbook - E. Fitts, Professional Development - G. Holness, Research - F. Kohloss, Program - R. Pappar, Special Publications - H. Sachs, Technology Transfer - D. Shugars, Standards - B. Subherwal
Manager Of Standards Manager Of Research & Technical Services	Claire Ramspeck Mike Vaughn

**ASHRAE TC 5.1 FANS
MEETING MINUTES
Monday, June 25, 2007**

Renaissance Long Beach Hotel

Long Beach, California

1. CALL TO ORDER

Chairman Joe Brooks called the meeting to order at 4:30 P.M.

2. ROLL CALL

Members

- | | |
|---|--|
| <input checked="" type="checkbox"/> Joe Brooks - Chairman | <input checked="" type="checkbox"/> George Gamble – Vice Chair - Secretary |
| <input type="checkbox"/> L.Z. Zeng | <input type="checkbox"/> Rad Ganesh |
| <input checked="" type="checkbox"/> John Cermak – Long Range Planning | <input checked="" type="checkbox"/> David Carroll – Research |
| <input checked="" type="checkbox"/> Charles W. Coward | <input checked="" type="checkbox"/> Brent Fullerton - Webmaster |
| <input type="checkbox"/> Tim Mathson | <input checked="" type="checkbox"/> John Murphy - Standards |
| <input checked="" type="checkbox"/> Brian Reynolds - Handbook | |

Corresponding Members & Guests

Paul Heitzmann	Zhiping Wang	Franco Cincotti
Gaylon Richardson	Kim Osborn	Mark Fly
Ted Carnes	Armin Haner	Josh Schubert
Asesh Raychaudhuri – Programs	Steve Idem	Tom Sobieski
Fred Kohless	Sriram Somasundaram	

Eight (8) of eleven (11) voting members were present. A quorum was formed.

3. ADOPTION OF AGENDA

The meeting agenda was adopted by consensus.

4. APPROVAL OF MINUTES

John Murphy made a motion to approve the revised minutes of the meeting held on Monday, January 29, 2007 in Dallas, Texas. John Cermak seconded the motion. The revised minutes were approved by a vote of 8 to 0.

5. ITEMS OF BUSINESS

TC 5.0 SECTION HEAD REPORT

No Report

TC 5.1 LIAISON REPORTS

1. **RAC Research** – No report
2. **Handbook** – No report
3. **Program** – No report
4. **Journal** – No report
5. **Standards** – No report

CHAIRMAN REPORT – Joe Brooks

- John Cermak, Charles W. Coward, George Gamble, Rad Ganesh will roll off the roster as of July 1, 2007
- Anthony Radspieler, Walter Ziemann, L Z Zeng resigned as voting members
- Michael Brendel, Franco Cincotti, Asesh Raychaudhuri, Greg Sanchez, Tom Sobieski will be added to the roster as of July 1, 2007
- Section 5 had the highest number of presentations uploaded (27 of 28) into the meeting CD system than any other section.
- Uploading presentations into the CD system will be mandatory for the New York, New York meeting. Presentations not uploaded twenty-four (24) hours in advance of the presentation will not be allowed to participate in the transaction or seminar.
- Twenty (20) programs (ten new and ten repeats) have been approved for Professional Development Hour credit for the New York, New York meeting
- A sign-up sheet was distributed to the committee members for anyone that wanted to request ASHRAE to send a “Thank You” letter to their employer

- The ASHRAE research fund had a \$200,000 surplus for the year. The surplus will be added to the research reserve fund that now has a balance of over \$6,000,000. The message from ASHRAE is to promote additional research projects.
- ASHRAE will provide a web site automation “Wizard” soon for use by the technical committees
- Nominations for the George B. Hightower Award” are being solicited

6. STANDARDS SUBCOMMITTEE – John Murphy

6.1 SPC 87.1 Method of Testing Fan Vibration and Critical Speeds

The ASHRAE Standards Reaffirmation Sub-committee (SRS) submitted the standard for “Public Review for Withdrawal”. TC 5.1 has no interest in revising the standard and will take no action at this time. There is no change to the status of the standard.

Joe Brooks will contact ASHRAE Standards Committee to determine the status of the public review.

6.2 SPC 87.2 In-situ Method of Testing propeller Fans for Reliability

David Carroll is the SPC Chairman and will be joined by John Murphy, Franco Cincotti, Joe Brooks, and Terry Bickley. The committee has been approved by ASHRAE.

7.3 SPC 51-99/AMCA 210 Laboratory Method of Testing Fans For Aerodynamic Performance Rating

No change in the status.

7. HANDBOOK – Brian Reynolds

Brian Reynolds is the new Handbook Subcommittee Chairman. Brian provided the revised handbook chapter to the committee members for review prior to the meeting and requested comments. John Cermak made a motion to approve the revised chapter without any additional revisions, Brent Fullerton seconded the motion. The motion was approved by a vote of 8 to 0.

Cindy Callaway will provide the committee a form to submit to ASHRAE headquarters that will formally record the committee vote to approve the chapter revisions. Cindy will also provide a schedule identifying a time line for the 2012 handbook revision.

Committee Members were requested to recommend any interactive or supplemental tools and features that may be appropriate to be included in the ASHRAE Handbook CD+. Guidelines for TC’s on the ASHRAE Handbook CD+ are included on the ASHRAE web site.

The ASHRAE Handbook Committee review of handbook chapters is conducted by the College of Fellows. If the TC committee desires any additional reviews by other organizations they must work through the ASHRAE Handbook Committee to coordinate the review.

Brian requested comments regarding suggestions for revisions to the 2012 edition of the chapter. Chuck Coward began the discussion. He recommended that the chapter include comments regarding selecting the highest efficiency fans to meet the requirements of ASHRAE Standard 90.1, Energy Standard for Buildings Except Low Rise Residential Buildings. Other comments were suggested regarding increasing fan efficiency including replacing the concept of evaluating fan static pressure with the concept of fan total pressure. The discussion concluded with the following points:

- Efforts must be conducted to begin the education of the design community regarding the possibilities to increase fan efficiency
- The efforts should include transaction papers, seminars, and forums at future ASHRAE Meetings
- Consider including comments in the ASHRAE Handbook CD+
- **Future committee handbook sub-committee meetings will be conducted on Sunday for one hour starting at 2 PM followed by the regular sub-committee meetings beginning at 3 PM to 5 PM**

Brian requested all committee members to send suggestions by email to his attention between meetings.

8. RESEARCH – David Carroll

David Carroll replaces L.Z. Zeng as the sub-committee chairman

8.1 Research Workshop

David attended the workshop and noted the following:

- ASHRAE requested technical committees submit additional work statements and RTAR's.
- The ASHRAE research reserve account balance is \$6 million.

8.2 RP 1126 Optimization of Sampling Tube for Induct Sound Testing

Peter Baade has not yet completed the research report. John Murphy commented that it is not necessary to submit a no-cost extension for one year.

8.3 WS 1216 Inlet Installation Effects, Air and Sound on Centrifugal Fans

Rad Ganesh submitted a revised work statement. It isn't known if the statement has been approved.

8.4 RP 1223 Installation Effects on Small Propeller Fans, Air and Sound

Results of the testing for the first fan type were presented at a seminar conducted by Dr. Steve Idem. The remaining work scope of the project is two-thirds complete. The final research report is scheduled to be submitted to the committee in December 2007 for review at the meeting in New York.

A transaction session to present the research results is planned for the Chicago meeting in January 2009.

8.5 RP 1272 Inlet Installation Effects on Forward Curved centrifugal fans, Air and Sound

The preliminary results of the air flow tests have been completed and submitted to the PMS by AMCA. Testing inlet effects on sound, the remaining portion of the project, is scheduled for completion by the end of September, 2007.

The complete results of the research may provide the basis of a new standard and presentation during a transaction session at the Chicago meeting in January, 2009.

8.6 WS 1420 Installation Effects on Plenum Fans

The work statement was not completed. Dave will contact Rad Ganesh to determine the status work statement.

8.7 URP 1076 Propeller Fan Vibration Analysis

David Carroll submitted the appropriate disposition of research forms to the ASHRAE RAC Research Liaison, Fred Kohloss..

8.8 Suggested Research Topics

Two future research projects under consideration are:

1. Research to improve the method currently included in AMCA 301 to convert tested fan sound data into accurate data for fans of different size and speed. Joe Brooks will contact Pennsylvania State University to determine their interest in submitting an Unsolicited Research Project (URP) request to ASHRAE.
2. Research to develop criteria for improving the design of flow settling means utilized in multi-nozzle chamber performance testing defined in AMCA Standard 210. John Murphy and John Cermak volunteered to prepare a RTAR for review at the next meeting.
3. Research has never been conducted to prove the accuracy of AMCA testing standards 210 and 300 and if the evaluation of testing uncertainties included in the standards is correct. Utilizing a statistical method to demonstrate the accuracy of the standards and the uncertainty evaluation may be an appropriate method to provide proof. The statistical research would be conducted by testing the same fan in as many AMCA accredited laboratories as possible. John Cermak and John Murphy will write a RTAR for evaluation at the New York meeting.

9. PROGRAM – Asech Raychaudhuri

More than forty people attended the TC 5.1 Seminar 36 “Inlet Installation Effects on Small Propeller Fans, Air & Sound”

New York Program

Forum – John Cermak will lead a forum regarding how fan selection relates to achieving the optimum sustainable design.

Seminar – The objective of the seminar will be to begin an effort to convince the ASHRAE community to consider total costs of a ventilation system, including energy, in lieu of only considering the initial cost. The papers will include

- Chuck Coward – “Is it feasible to comply with Standard 90.1?”
- Rad Ganesh – Selecting the optimum type of fan for a particular system
- John Murphy – “Pay me now so you don’t pay me later”

Note that the formal titles of the seminar papers are required to be submitted by August 3rd.

Salt Lake City Program

Forum – John Cermak will lead a forum regarding sustainable design considering the entire life cycle of a fan from raw materials through fan selection for a particular application.

10. LONG TERM PLANNING – John Cermak

No report.

11. FAQ

No report. No questions have been forwarded from ASHRAE staff.

12. WEBSITE REPORT – Brent Fullerton

- Brent has just completed rewriting the code for all the pages of the web site
- A blind email address can be used to send inquiries to “Frequently Asked Questions” but the actual address the inquiry was sent will appear in the senders “sent” items file
- Power point presentation can be posted on the web but presentations used for ASHRAE seminars or transactions are not permitted to be posted
- Photographs can be posted on the web site
- The minutes of the meetings will be posted on the web site in the future
- An entire list of the standards that are the responsibility of the committee will be posted on the web site in the future. John Murphy will supply Brent the list of standards.
- A note regarding each research project will be posted on the web site in the future

13. OTHER BUSINESS

The next edition of the ASHRAE “Members First Newsletter” will include a summary of the activities of each technical committee. TC 5.1 adopted the following summary:

Members First! Input from TC 5.1

TC 5.1 Fans is sponsoring research on systems effects that waste energy. The TC is responsible for and revising Chapter 18 of the Equipment Volume of the ASHRAE Handbook to include tools for optimizing the efficiency of fan systems.

The Chairman requested each committee member to begin considering how the committee will incorporate the requirements of Standard 90.1 into the handbook and committee standards. In addition, we must also begin to determine what the committee intends to do to achieve the goal of sustainability as it relates to the responsibilities of the committee.

The ASSHRAE TC Manual of Procedures (MOP) requires that each committee member be assigned to or volunteers to be an active member of a sub-committee. Members will be requested to submit their ideas regarding which sub-committee they want to join.

John Murphy volunteered to be the new committee secretary.

The request from ASHRAE to participate in the canvass review of the proposed revision to AMCA Standard 230, Laboratory Methods of Testing Air Circulating Fans for Rating and Certification, was brought before the committee. After a discussion of the standard John Cermak made a motion to recommend approval of the standard with two editorial comments. John Murphy seconded the motion. The motion passed 7 – 0.

The two editorial comments were:

- In Table 1, remove the line with the description "Ambient air density." Reason is because the previous line with the description 'Atmospheric air density' is adequate (only one ρ_0 variable is required or needed).
- In Section 9.3, Equation 9.5, change the label for ρ_0 to 'Atmospheric air density instead of 'Ambient air density'. The reason is the same as above."

14. TIME AND PLACE OF THE NEXT MEETING

The next meeting of the committee is scheduled to be held in New York, New York on Monday, January 21st, 2007.

15. ADJOURNMENT

John Murphy made a motion to adjourn the meeting at 6:33 PM. John Cermak seconded the motion. The motion passed 8 to 0.

Minutes recorded by

George Gamble

Secretary, ASHRAE TC 5.1 FANS