

**ASHRAE TC 5.1 FANS  
MEETING MINUTES  
Monday, June 26, 2006**

Delta Hotel

Quebec City, Quebec

**1. CALL TO ORDER**

Chairman Brian Reynolds called the meeting to order at 4:30 P.M.

**2. ROLL CALL**

Members

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

Corresponding Members & Guests

Paul Heitzmann	Peter Danos	Wes Davis
Corinne Darvennes	Mike Brendel	Tom Sobieski
Tom Paige	Kim Osborn	Douglas Reynolds
Mark Fly	Dustin Meredith	Jerry Lilly
Asesh Raychaudhuri – Programs	Pat Marks	Jim Shick

**3. ADOPTION OF AGENDA**

John Cermak suggested that the agenda include a discussion of the recent activities of ISO Technical Committee 117, "Industrial Fans". The revised agenda was adopted by consensus.

**4. APPROVAL OF MINUTES**

John Cermak made a motion to approve the minutes of the meeting held on Monday, January 23, 2006 in Chicago, Illinois. Brent Fullerton seconded the motion. The minutes were approved by a vote of 10 to 0.

**5. ITEMS OF BUSINESS**

**TC 5.0 SECTION HEAD REPORT**

The Section Head, Gaylon Richardson, was not present at the beginning of the meeting. Gaylon stopped in later to present Brian Reynolds, TC 5.1 Chairman, a "Certificate of Appreciation" for his service as Chairman. No formal report was presented.

**TC 5.1 LIAISON REPORTS**

1. **RAC Research** – No report
2. **Handbook** – No report
3. **Program** – No report
4. **Journal** – No report
5. **Standards** – Jim Woods was not present at the beginning of the meeting but did attend later to discuss SPC 87.1 and SPC 87.2 as noted below:
  - SPC 87.1** – Jim requested the committee to prepare a work plan to update, reaffirm, or eliminate the standard. Members presented Jim the minutes of the TC 5.1 meeting in Chicago, January 23, 2006, that confirmed the committee vote of 12-0 to reaffirm the standard. Jim will present the minutes to the ASHRAE Standards Project Liaison Committee meeting to take place Tuesday, June 27<sup>th</sup>.
  - SPC 87.2** - Jim requested the committee appoint a chairman for the SPC. David Carroll volunteered to act as chairman. The committee approved David as chairman by a vote of 10 – 0. David will organize the committee.

**CHAIRMAN REPORT - Brian Reynolds**

- ASHRAE is cosponsoring Clima 2007 in Helsinki, Finland June 10 – 14.
- Headquarters reminded all members to update their biographies and not to include technical committee rosters on the committee websites. Only committee member names are to be included.
- The ASHRAE Journal is requesting members to submit articles regarding fans for a future edition. John Cermak volunteered to author an article for the Journal. Tim Mathson said Greenheck could contribute an article titled 'Do High Plume Dilution Blowers Work?; Testing and Verification of Stated Manufacturers Performance.'
- ASHRAE stressed the desire for each technical committee to strive to eliminate all paper associated with the meetings. Agendas, minutes, and other correspondence should be transmitted by electronic methods.
- Joe Brooks attended a meeting Sunday evening, June 25, hosted by TC 9.2 and 5.8. The purpose of the meeting was to begin a dialogue regarding protection of hazardous locations that include operating fan equipment. The decisions determined at the meeting include:
  - a. TC 5.8 will be the lead committee
  - b. The committee will develop a scope and mission statement
  - c. A forum in Dallas may be scheduled to solicit input and assist defining the problemTask Group BCBRR may also be interested in participating in the discussion.  
John Murphy volunteered to represent TC 5.1 if a Task Group is formed.

**6. STANDARDS SUBCOMMITTEE – John Murphy**

**6.1 SPC 87.1 Method of Testing Fan Vibration and Critical Speeds**

Reaffirmed at the Chicago meeting

**6.2 SPC 51-99/AMCA 210 Laboratory Method Of Testing Fans For Aerodynamic Performance Rating**

The review process is complete. Several comments have been received and will be discussed by the committee via a conference call scheduled for July 12<sup>th</sup>.

AMCA members will vote on the final draft of the revised standard.

**6.3 SPC 68-86R Laboratory Method Of Testing To Determine The Sound Power In A Duct**

Joe Brooks remarked that ASHRAE has requested AMCA to take the lead regarding Standard 68. AMCA has agreed and will adopt ISO 5136 to replace Standard 68.

John Cermak provided the following report on the April meeting of the ISO Technical Committee 117 – Industrial Fans.

- The committee is reviewing the title and scope and is considering to change the title to “Fans” and expanding the scope to include all fans except fans used in household applications
- Voted to reaffirm ISO 5802 Industrial Fans – Performance Testing in Situ
- Revision to ISO 5801 Industrial Fans – Performance Testing Using Standardized Airways is almost complete
- ISO 13348 Industrial Fans – Tolerances, Methods of Conversion, and Technical Data Presentation has been approved and published. A minor change may be made to it.

**7. HANDBOOK – Walter Ziemann**

**7.1 Handbook Workshop**

The new handbook liaison is Cindy Callaway.

Two points were presented at the workshop meeting:

- Revisions to the handbook should be written with the intent of making the handbook more useable and readable
- The handbook chapters should be revised to include material regarding “Sustainability” and “Security Issues”

### **7.2 Handbook Review Input**

Walt revised the chapter by including references to other chapters in the handbook where required and added a reference to “system effect” at the end of the first paragraph.

The development of technical information regarding variable frequency drives was delayed and will be considered for the next edition of the handbook.

Regarding the concepts of “Sustainability” and “Security Issues” and other topics for the 2012 edition the following ideas were suggested as potential topics:

- Sustainability
  1. Chuck Coward suggested bearing and shaft size selection
  2. Asesh Raychaudhuri suggested energy savings
- Security Issues
  1. Protecting the fan inlet
  2. Fans necessary for safety such as mine ventilation fans
- Effects of altitude on horsepower
- Series operation of fans
- System effect calculation examples

### **7.3 Handbook Schedule**

The revisions to the handbook were not submitted to ASHRAE by April 6<sup>th</sup>.

John Murphy made a motion that the revisions made to the chapter be sent by email to the members for review and approval. David Carroll seconded the motion. The motion passed by a vote of 10 – 0. Walt agreed to email the members the revisions within two (2) weeks of the meeting.

## **8. RESEARCH – L. Z. Zeng (Reported by David Carroll)**

### **8.1 Research Workshop**

- Met with Fred Kohloss and received six (6) handouts including outline of presentation covering the 2006 ASHRAE Strategic Plan and ASHRAE Research Strategic Plan, how they are linked, the acceptance criterion/prioritization system for WS's & RTAR's. The indications are that RTAR's and WS's that are tied to the goals outlined in the plans will be weighted more heavily.
- RAC now reviews RTAR's and WS's at all (3) meetings per year: Winter (December 15<sup>th</sup> submission deadline), Annual (May 15<sup>th</sup> submission deadline) and fall (August 15<sup>th</sup> submission deadline).
- Process Flow Map for Research Project Prioritization included (handout 2 of 6).
- Routine Deadlines (handout 3 of 6).
- Research Project Closeout: Disposition of ASHRAE Sponsored Research Results Form & Completion Procedures (handout 4 of 6).
- Procedure for Service to ASHRAE Research Award (handout 5 of 6). September 30<sup>th</sup> submittal deadline.
- Research Activity Reminder generated by Mike Vaughn (handout 6 of 6).

### **8.2 URP 1126 Optimization of Sampling Tube for Induct Sound Testing**

ASHRAE Research Committee cannot approve the committee recommendation to close the project because a payment (\$4,800) balance is still due to Peter Baade. The committee has the following two options:

- Prepare a written recommendation to terminate the project without payment of the outstanding balance
- Peter Baade prepares a final report for review and approval of the committee and the outstanding balance is paid

John Murphy agreed to contact Peter Baade to discuss the options and report to the committee the outcome of the discussion.

### **8.3 TRP 1216 Inlet Installation Effects, Air and Sound on Centrifugal Fans**

Zhiping Wang and Rad Ganesh prepared a revised work statement that reduced the scope of work. The statement was sent to committee members for review via email June 20, 2006. John Cermak made a motion to accept the revised work statement. John Murphy seconded the motion. The motion passed by a vote of 10 – 0. The statement must be submitted to the RAC by August 15<sup>th</sup>.

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

- PMS visited PI in late March and several recommendations were made including airflow settling means, auxiliary fan background noise concerns, and airflow straightener ahead of the duct traverse station. Follow-up meeting to review test data was to occur in late-May/early-June, but that meeting did not occur.
- PowerPoint presentation including an airflow test plot was recently submitted by Dr. Idem who was not able to attend the Quebec meeting.
- Possible visit by members of the PMS in late-July, and/or late-Aug.
- There is concern that the requested Dec-06 extension will not be enough time to finish all the testing and finalize the project. A request was made for an outline that includes all remaining equipment setup/calibration issues and a test plan with estimated milestone dates.

#### **8.5 WS 1272 Work Statement on FC Centrifugal Fans, Air & Sound Installation Effects**

Latest revision was approved by RAC but did not make it to the spring bid because of insufficient funds from ASHRAE. It remains a first priority and will be next in line for bid.

#### **8.6 RTAR 1420 Installation Effects on Plenum Fans**

RAC approved the RTAR with comments. Rad Ganesh will review the comments, incorporate as necessary, and distribute the revised RTAR via email for discussion in Dallas.

Rad will also begin preparing the work statement.

#### **8.7 Co-sponsor Research with TC 5.12 Occupant Response to Residential Ventilation Fans**

TC 5.12 has requested TC 5.1 to co-sponsor research regarding noise of residential ventilation fans. The requested was discussed and the committee determined that TC 2.6 would be the appropriate committee to sponsor the project.

John Cermak made a motion to decline the request. The motion was seconded by David Carroll. The motion passed by a vote of 10 – 0.

#### **8.8 Suggested Research Topics**

Two future research projects under consideration are:

1. Research to develop criteria for improving the design of flow settling means utilized in multi-nozzle chamber performance testing defined in AMCA Standard 210.
2. 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.

At this time the committee is not prepared to begin the formal preparation of the project work statements.

SPC 4.12 expressed interest in co-sponsoring the research to improve the design of the settling means.

#### **8.9 URP 1076 Propeller Fan Vibration Analysis**

Dr. Douglas Reynolds submitted a final draft copy to Paul Heitzmann on June 25<sup>th</sup>. A copy will be sent via email to the PMS and Peter Baade for review

### **9.0 PROGRAM - Asesh Raychaudhuri**

#### **9.1 Quebec City Program**

Forty-two people attended seminar 36 entitled “Advances in Fan Analysis and Design Methods” Seminar 53 entitled “Fan Application Fundamentals” will be held later this week.

#### **9.2 Dallas Program**

Chuck Coward agreed to act as a forum moderator leading a discussion regarding compliance with ASHRAE Standard 90.1 Energy Standard for Buildings Except Low-Rise Residential Buildings.

A seminar regarding fan vibration is also planned. Dr. Douglas Reynolds will prepare a paper based on the research conducted during the project investigating propeller fan vibration. John Murphy also will prepare a paper on centrifugal fan stiffening. Rad Ganesh may also prepare a paper.

### **9.3 Long Beach**

John Cermak suggested a forum for Long Beach to discuss system effect, how to estimate system effect, and how to select fans for optimum efficiency.

In addition, the possibility to conduct a seminar based on the results of the research conducted for RP 1223, Installation Effects on Small Propeller Fans, Air and Sound, should also be considered.

### **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**

The TC 5.1 website has been redesigned and is up and running.

The site is divided into the “pages” as follows:

- Membership
- News – Brent will update as required
- Meetings
- Activities
  1. Programs
  2. Research – Send Brent work statements as they are prepared
  3. Handbook – Send Brent the revisions we are considering
  4. Standards and Codes
  5. Upcoming Activities
  6. Long Range Planning
- Published Content – If you publish an article send it to Brent
- Links – If there are any links that should be included, please notify Brent
- FAQ – There are technical problems associated with sending and receiving FAQ's. We will discuss at the Dallas meeting. A blind address is considered as a solution. John Murphy agreed to respond to questions sent to the address.

### **13. MEMBERSHIP REPORT - Brian Reynolds**

- Rollover roster goes into effect each July 1
- New members need Chair approval, up to date bio on file.
- Voting roster should come from corresponding members
- Roster changes for 2006-07
  - Joe Brooks (current Vice-Chair) to become Chair July 1, 2006
  - George Gamble to Vice-Chair, July 1, 2006

### **14. OTHER BUSINESS**

No new business was discussed.

### **15. TIME AND PLACE OF THE NEXT MEETING**

The next meeting of the committee is scheduled to be held in Dallas, Texas on Monday, January 29<sup>th</sup>, 2007.

### **16. ADJOURNMENT**

John Cermak made a motion to adjourn the meeting at 6:25 PM. Rad Ganesh seconded the motion. The motion passed 10 to 0.

Minutes recorded by  
George Gamble  
Secretary, ASHRAE TC 5.1 FANS