

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING
ENGINEERS, INC.
1791 Tullie Circle, N.E./Atlanta, GA 30329
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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. 7.7 DATE June 24, 2013
 TC/TG/MTG/TRG TITLE Testing and Balancing
 DATE OF MEETING June 24, 2013 LOCATION Denver, CO

MEMBERS PRESENT	YEAR APPTD	MEMBERS ABSENT	YEAR APPTD	EX-OFFICIO MEMBERS AND ADDITIONAL ATTENDANCE
Tom Cappellin**	09	Richard Rose	11	Byron Hagan
Don Prather	09			Justin Garner
John Hamilton	10			Tom Schlachter
Fred Lorch	10			David Bornside
Mark Hegberg	11			Jim Hocter
Gerry Kettler	11			Kent Anderson
Gaylon Richardson	11			Terry Beck
Jack Stegall	11			David Kandel
Gus Faris	12			Rick Mohammed
Frank Spevak	12			Erik Emblem
				Bob Linder
				Lloyd Le
				Curtis Peters

** left meeting early

DISTRIBUTION

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

TAC Section Head:	Ms. Adrienne G. Thomle
TAC Chair:	Mr. William F. McQuade, PE, LEED AP
All Committee Liaisons As Shown On TC/TG/MTG/TRG Rosters:	Mr. Phillip Haves (Research Liason) Mr. Francis A. Mills (Special Pubs) Mr. Donald L. Brandt (ALI / PDC) Ms. Debra H. Kennoy (Standards Liason) Mr. Chad E Moore, PE (Chapter Technology Transfer Chair)
Manager Of Standards	Ms. Stephanie Reiniche
Manager Of Research & Technical Services	Mr. Michael R. Vaughn

**Minutes for
TC 7.7 Testing and Balancing
Annual Meeting
Denver Colorado**

DATE OF MEETING: **Monday, June 24, 2013 2:15-4:15 PM**

LOCATION: **Beverly TT**

Program/Handbook Subcommittee: Saturday, June 22, 2013 1:00-3:00p Pearl1(H2)

Research Subcommittee: Monday, June 24, 2013 1:30p; Beverly TT

1. Call to Order

Gaylon Richardson

Attendance: 10/11 Voting Members – Quorum Present

Tom Cappelin was present at the start, but left early; Kettler arrived late; Hegberg arrived late

2. Introductions – Roundtable Introduction

3. Approve minutes of Dallas Meeting

Motion by Faris, Second by Prather 8-0-0 Chair Voting

4. Recognize Liaisons – None present

5. Discuss issues from TC Breakfast

1. 13-14 Roster Access and Distribution

Remember, the 2012-2013 Roster is in effect until after the Denver meeting. The new rosters for 2013-2014 will go into effect on July 1, 2013 based upon the update information that each TC turned into their section head last January.

By now, each TC chair should have received a PDF & MS-Excel file of their 2013-2014 roster from staff for distribution to the TC membership. In addition, each member can view all of the rosters of their committees on the ASHRAE Website. Go to www.ashrae.org, click on the "Membership" tab in the header, click on "Manage Your Membership" text in the left sidebar, and log in (if you have not logged in lately, you might need to set up a new username and password). Click on the "Biographical Record System" link. Now, you should see your current "bio info". Click on "My Committees" on the left sidebar; all of the committees you are a member of will appear. Click on the "blue" roster text at the left hand side of a committee to reveal the roster with linked contact information. Make sure everyone on your committee also knows how to access the roster.

2. TC/TG/TRG Chair's Training Workshop Reminder

Sunday June 23 9:45-10:45a in the Governor's Square 14 Room – Concourse Level – Plaza Building – Sheraton Denver Hotel. As with the Breakfast meeting, both the Chair and Vice-Chair are expected to attend; attendance will be tracked so that we can assess who has been trained. Bring questions - if you need an answer, it's quite

likely others also need the same answer. This session will focus on general TC operations and the role of your Section Head. An “On the Horizon” slide will mention a new Section Head Tool and Activity forms for use in Denver. A few slides will also provide a listing of informational resources for the TC Chairs which includes updated ASHRAE website links.

3. Useful TC/TG/TRG/MTG Chair Information and forms on ASHRAE website

Information for TC/TG/TRG and MTG chairs can be found on the Technical Committee page of the ASHRAE website at the following link: <http://www.ashrae.org/standards-research--technology/technical-committees>

The TC/TG/TRG Manual of Procedures (MOP) has been revised to include a new committee type, Multidisciplinary Task Groups (MTGs). MTGs are different from TCs, TGs, and TRGs. The objective of the MTG is to first try to better coordinate and focus the activities of the affiliated TC and non-TC groups (EHC, REF, SSPCs, outside groups, etc) that make-up the MTG on the task for which the MTG was created without duplicating the functions of a TC or TG so that the task can be completed as efficiently as possible. In special cases, MTGs may also be authorized by TAC to assume some TC/TG functions, such as research, if it is deemed necessary to better complete their task assignment. Since the need, purpose, and progress of each MTG is reassessed and reaffirmed by TAC each year, there are no term limits for the MTG Chair, Vice Chair, Members and Alternates.

4. 2013-2014 Hightower Award Nomination Process and Deadline

Nominations for the 2013-2014 George B. Hightower Technical Achievement Award are due to you Section Head by **September 1, 2013**. The award recognizes outstanding technical leadership and contributions on a TC/TG/TRG during the past Society year, excluding research and standards activities. Please go to the Technical Committee page of the ASHRAE website at the following link under the “Procedures and Forms...” heading: <http://www.ashrae.org/standards-research--technology/technical-committees>

2013-2014 Service to ASHRAE Research Award Nomination Process and Deadline

Nominations for the 2013-2014 Service to ASHRAE Research Award for TC volunteer efforts in research are due to RAC research liaison by **September 30, 2013**. Please go to the Research page of the ASHRAE website at the following link under the “Research Grants and Awards” heading: <http://www.ashrae.org/standards-research--technology/research>

5. New TAC Presentation template for TC members to use with local Chapter

The new presentation template that allows TC members, without a lot of effort, to give a presentation to their local chapter on TAC and the TCs in general and to also customize a few slides with information specific to their own TC or TCs is now available. The template is posted on the Technical Committee page of the ASHRAE website for download <http://www.ashrae.org/standards-research--technology/technical-committees>

6. New MTGs that have been formed

TAC approved the formation of the following new Multidisciplinary Task Group

(MTG):

MTG.CCDG, Cold Climate Design Guide

Scope: MTG.CCDG will coordinate TC/TG/TRG technical activities to help support the technical basis, development, and publication of a “Cold Climate Design Guide” in conjunction with REHVA and SCANVAC. Responsibilities include the development of supporting research, presentations, and content for the “Cold Climate Design Guide” special publication.

The chair and vice chair of the MTG are Frank Mills and Bjarne Olesen, respectively.

For more information on this MTG and the six other MTGs, please go to the MTG section on the following web page: <http://www.ashrae.org/standards-research--technology/technical-committees>

If your TC would like to have a voting representative on a particular MTG, please contact the ASHRAE Manager of Research and Technical Services, Mike Vaughn, at MORTS@ashrae.net.

MTG.EAS suggestions to improve AHU systems. Reduced OA, tighter ductwork, sustainability of system, control verification, system design; discussed damper problems in installation and testing; building envelope; identification of components; ECM and direct drive fans (<2 HP)

7. Employment Discipline added to ASHRAE BIO Online Input Form

A new input field titled Employment Discipline has been added to the ASHRAE online member (BIO) graphical input form and **TAC would like ALL TC members to self-declare their employment discipline prior to the start of the new Society year on July 1, 2013** by going to the Members Only section (<https://eweb.ashrae.org/eweb/DynamicPage.aspx?Site=ASHRAE&WebKey=8396a37a-9fc2-4f50-9332-5eebebe73494>) and entering their employment discipline information. The link should take you directly to the screen, which is located under demographics.

You will need your login and password to enter. Employment Discipline is located in the third section.



Employment Discipline	
category:	Government and Organizations
discipline:	Not-for-Profit Organization (USGBC, Habitat, etc.)

Once you have made the necessary updates, save the changes and logout.

Employment Disciplines:

Academic

Academic - Professor/Staff

Academic – Student

Government and Organizations

Government - Federal (e.g., DOE, EPA, USDA)

Government - National Lab (e.g., ORNL, NIST)

Government - Local (e.g., city or state governments)

Not-for-Profit Organization (USGBC, Habitat for Humanity, etc.)

Trade Association (ACCA, SMACNA, etc.)

Building Industry

Architect

Building Owner / Management Firm

Consultant

Contractor

Designer

Engineer

Facilities Manager/Operator

Manufacturing Industry

R&D

Design & Construction

Sales

Mfg. Representative

Other

Model Code Organization

Retired

Utility

Other

8. E&P Beta Test #4 TC meetings being Held in Denver

The 4th beta test of Electronic and Present (E&P) meetings, which allows some TC members to participate in the TC meeting from a remote location electronically, will occur in Denver and the following TCs have agreed to participate in this test: TCs 1.5, 1.8, 2.2, 2.8, 5.8, 7.9, 8.8, 8.12, and 9.3 (PMS RP-1603). The chairs of those TCs participating should provide to their Section Head with feedback on their E&P meeting experience before TAC meets on Wednesday morning, 6/26.

9. TC Volunteers willing to Support Content Development and Quality Control for Society Technical Program at Society Meetings

Provide to your Section Head after each Society meeting a list of qualified volunteers from your TC that are potential Technical Session chairs and reviewers of session papers that are related to TC's scope for use by the Conferences & Exhibitions Committee (CEC) in developing technical content for future technical programs.

Passed around sign-in sheet for volunteers.

10. CEC proposed or recently implemented technical program changes

TC Program Subcommittee Chair Training in Denver

Please notify your program subcommittee chair that CEC will be offering training to them as follows in Denver: Tuesday, 6/25, 11:15 a.m. – Noon, Plaza Court 3 room (Concourse Level) – Plaza Building – Sheraton Denver Hotel

Program Focus on Research Going Forward at Each Annual Meeting

Starting at the Denver Conference, the Society's annual conference program will have a special emphasis on research.

TBD in Denver TAC/CEC interface meeting

11. Report on TC/TG/TRG websites in Section (SHs need to report to TCs which sites are not up to date.)

Is your committee website up to date? If not, please ask your webmaster to at least post the latest minutes and the Denver meeting times and agenda. If your website has been neglected, add an action item for this meeting to appoint a responsible member of the TC/TG/TRG who will bring it back to life. This form of communication is critical to the efficient operation of your committee, and for attracting new members.

Bob Linder will remain the webmaster for TC 7.7

TAC and the Electronic Communications Committee (ECC) recently posted a webinar recording on how to set-up and maintain a basic TC website using the ASHRAE server and TC website template at the following link: <http://media.ashrae.biz/webinar/TrainingWebinar.wmv>

12. Thank You Letters to Employers

ASHRAE President – Tom Watson – has offered to send letters to the employers of TC volunteers this year thanking them for supporting their employee's service on an ASHRAE TC during Society year 2012-2013. If requested by the volunteer, the letter will be sent to his/her employer by the end of July or early August and the volunteer will receive a copy.

Please let your committee members know that they will be receiving an email about employer thank you letters in early July with details on how to request a thank you letter.

13. Option for TC Subcommittee Meetings via Conference Calls and Web Meetings

More and more TCs are taking advantage of a new Society service that allows TCs to hold subcommittee meetings by phone and/or web. Many TCs are finding this to be a more efficient way for them to conduct subcommittee business and it also allows TC members that can't travel to meetings on a regular basis a way to still contribute to the TC. Such a change can also eliminate potential conflicts with the TC's program sessions at Society meetings. Please pass your conference call/web meeting/webinar requests on to the Manager of Research and Technical Services, Mike Vaughn, at mvaughn@ashrae.org or MORTS@ashrae.net

14. Upcoming Program Dates

New York Meeting – January 18-22, 2014

- Conference Site Live: June 3, 2013
- Web Site Opens for Seminar and Forum proposals – June 3, 2013

- Final Conference Papers Submitted for Review – July 3, 2013
- Technical Papers final review due August 12, 2013
- New York Seminar and Forum Session Proposals are due August 12, 2013
- All presentation files (PPT) due online – January 3, 2013
- Conference Website: <http://www.ashrae.org/newyork/>

Seattle Meeting - June 28-July 2, 2014

2013

- Conference Paper Abstracts due September 23, 2013
- Technical Papers Due for Review – September 23, 2013
- Acceptance/Reject Notifications issued for Conf. paper abstracts – Oct. 7, 2013

2014

- Conference Site Live: January 6, 2014
- Web Site Opens for Seminar and Forum proposals – January 6, 2014
- Final Conference Papers Submitted for Review – January 9, 2014
- Seattle Seminar and Forum Session Proposals are due February 13, 2014
- Technical Papers final review due February 25, 2014
- All presentation files (PPT) due online – June 2, 2014
- Conference Website: <http://www.ashrae.org/seattle/>

The Conferences and Expositions Committee (CEC) oversees ASHRAE's annual and winter conferences and other specialty conferences and expositions globally. The CEC continually works to improve the conference experience for all attendees. To help keep a "pulse" on the technical issues facing professionals in the HVAC&R marketplace, the CEC seeks ideas for tracks for the Seattle and annual and winter conferences beyond as well as topics for specialty conferences from TC members.

Please submit your suggestions to ASHRAE Staff member Tony Giometti (Giometti@ashrae.org)

15. Upcoming Workshops and Conferences:

- **ECOS 2013**, July 16-19, 2013 - Guilin, China. Endorsed by ASHRAE. Contact ecos2013-china@iet.cn or <http://tinyurl.com/d6s3gnk>.
- **CIAR XX**, July 22-23, 2013 - Cartagena, Colombia. Endorsed by ASHRAE. Contact ciar2013@acaire.org or <http://tinyurl.com/CIAR2013>.
- **IBPSA 2013 (13th International Conference of the International Building Performance Simulation Association)**, Aug. 25-30, 2013 - Chambéry, France. Endorsed by ASHRAE. Contact: <http://www.bs2013.fr/>
- **AHR Expo-Mexico 2013**, Sep. 23-25, 2013 – Mexico City, Mexico. Endorsed by ASHRAE. Contact www.ahrepomex.com/eng
- **5th International Conference – Solar Air Conditioning**, Sep. 25-27, 2013 - Black Forest, Bad Krozingen, Germany. Endorsed by ASHRAE. Contact: <http://solaircon.com/>

- **7th CLIMAMED Mediterranean Congress of Climatization**, Oct. 3-4, 2013 - Istanbul. Endorsed by ASHRAE. Contact 90 3124194571, ttmd@ttmd.org.tr, or www.climamed.org.
- **ICEBO (13th Annual International Conference for Enhanced Building Operations)** Oct. 8-11, 2013 Montreal, QB, Canada. Contact <http://ietc.tamu.edu/home> or <http://icebo.tamu.edu/home>
- **IAQ 2013: Environmental Health in Low Energy Buildings**, Oct. 15-18, 2013 Vancouver, BC, Canada. Contact ASHRAE at 800-527-4723, ext. 1158, IAQ2013@ashrae.org, or www.ashrae.org/IAQ2013.
- **iMechE BIM Seminars: Manufacturing with BIM: Ensuring Cost-Effective Integration**, Oct. 17, 2013 Manchester, UK. Contact: <http://events.imeche.org/>
- **The 12th Asia Pacific Conference on the Built Environment**, Nov. 5-7, 2013 Shangri-la Hotel Makati, Manila, Philippines. Contact: <https://www.ashrae.org/membership--conferences/conferences/ashrae-endorsed-events/2013/12th-asia-pacific-conference-on-the-built-environment>
- **iMechE BIM Seminars: Manufacturing with BIM: Ensuring Cost-Effective Integration**, Nov. 7, 2013 London, UK. Contact: <http://events.imeche.org/>
- **1st International Conference on Energy and Indoor Environment for Hot Climates**, February 24-26, 2014, Doha, Qatar. Contact: www.iea-hpc2014.org or <http://ashraem.confex.com/ashraem/ihc14/cfp.cgi>
- **49th AiCARR International Conference of 2014**, February 26-28, 2014, Rome, Italy. Contact: <https://www.ashrae.org/membership--conferences/conferences/ashrae-endorsed-events/2014/49th-edition-of-aicarr-international-conference-of-2014>
- **2014 International Sorption heat Pump Conference (ISHPC2014)**, Mar. 31 – Apr. 3, 2014, College Park, MD, USA. Contact: <http://www.ceee.umd.edu/events/ISHPC2014/>
- **2014 ASHRAE High Performance Buildings Conference – San Francisco, CA USA**
- **2014 ASHRAE/IBPSA-USA Joint Building Simulation Conference – Atlanta, GA USA**
- **Efficient, High Performance Buildings for Developing Economies** — April 24 - 25, 2014 - Manila, Philippines Conference Paper Abstracts due July 12, 2013. <http://ashraem.confex.com/ashraem/dev14/cfp.cgi>
- **11th International Energy Agency (IEA) – Heat Pump Conference**, May 12-16, 2014, Montreal, Canada. Contact: www.iea-hpc2014.org. See attached call for

papers pamphlet. Paper Abstracts due date extended to June 30 and if someone needs more time that will be ok too.

6. **Request from Jim Hctor** In Europe a standard has been developed and agreement reached, among the Pressure Independent Temperature Control Valve (PICV) manufacturers, on a Performance Standard on control and balancing through the use of these valves.

The popularity of PICV's in North American is becoming universal, due to the large amounts of Energy which may be saved by utilizing these valves in Part-Load Conditions; and by the continuous Dynamic Balancing of building systems to Building Loads. As a member of TC 7.7 (although non-voting), I am requesting we consider developing and adopting an ASHRAE Standard of Performance for PICV valves.

Project committee roster was approved for SPC208 at this meeting. Hegberg is chairman. It is written broadly to include all balancing devices. No governing body over the testing. Based upon an ISA standard. BISREA is not ANSI accredited. Cognizant committee is TC6.1 with TC7.7 as a co-sponsor.

7. **AMCA has been dealing with fan efficiencies.** A major problem exists when testing exhaust fans with back draft dampers, the manufactures do not indicate the loss from the damper and the loss from the duct downsizing.

Talk with TC5.1 about this issue. Faris discussed issues with DOE standardization of fan testing which has included fan powered equipment.

8. Subcommittee Reports

a. Handbook

Fred Lorch

Met at 1:30 Saturday (Hamilton, Schlachter, Lorch, Richardson); Lorch reviewed assignments for revisions to the Handbook chapter. Need volunteers for chilled beams, fan arrays, ERUs, ERVs, deadline is one year from today. All content ready for review by September, consolidation by Lorch in November and discussion in New York. Meeting from 1-5 PM on Saturday in New York.

b. Program

John Hamilton

Mark and Gaylon will present on balancing hydronic systems on Wednesday morning. Denied on PICV program in Denver, but may move to New York (Hegberg to verify). Dual duct systems in Seattle (conference paper by Richardson and Faris). Steam and steam condensate has gone to TC6.1. Field airflow measurement forum by Lorch in Seattle. Lab airflow systems (co-sponsored with TC9.10) in Seattle at the earliest.

Field testing of HVAC controls components (Kettler, Richardson) – Mark suggested more speakers and more detail.
Low airflow testing by Bornside; Review Dallas minutes for clarification.
Asked for volunteer for chair.

c. Membership

Mark Hegberg

Hegberg asked for bios to be updated.

d. Research

Frank Spevak

i. Research sub-committee chair breakfast report:

1. ASHRAE Service to Research Award nominations by TC/TG chair of a voting or corresponding member by September 30
 2. Current Projects - 58 active RP
 3. Total value of projects \$11 million
 4. Since July 2012 - 14 projects completed; 11 new projects started; 14 Tentative RP released for bid
 5. In Denver RAC evaluated 5 RTARs and conditionally accepted 2, returned 2 and rejected 1. RAC evaluated 2 WS and conditionally accepted 1 and returned 1. There are 7 TRP potentially ready for bid in fall.
 6. Innovative Research Grant - This year there were 18 pre-proposals and 3 were invited to provide full proposals. RAC making a recommendation at the end of the meeting in Denver.
 7. Low number of RTARs and WS. Would like more.
 8. Recommendations being proposed for the ASHRAE Research Manual to provide more guidance on the evaluation of proposals and contractor selection.
 9. New RTAR form to be used for all new research. Biggest item is the maximum of words per section. Summary is only 50 words, background at 300 words, research needs at 250 words, objectives at 150 words, relevance and benefits to ASHRAE at 350 words. Will start using the form within the next few weeks.
- ii. RP 1245- Effects of duct fittings on various traverse methods. Co-Sponsor 1.2 Ongoing, *papers will be forthcoming* Reduction of data taking and analysis?
Terry Beck is in progress on his papers and reported to sub-committee. Faris indicated to send a suggested list of reviewers and a chairman for the review.
- iii. RTAR from TC5.3- a Designers Guide for selection of air terminal units. Co-Sponsor TC7.7 ~~RTAR accepted working on WS~~.
1. RTAR was rejected and told to move to publications
- iv. RTAR for flow grid measurements – Spevak

- v. See previous minutes – get RTARs submitted by September 1
- vi. RTAR for pressure drop lost by Section 5

e. Journal

Hegberg asked if TC7.7 was asked to review articles for the journal. Hegberg discussed concerns.

f. Standards

Fred Lorch

- STD 111 Gaylon Richardson
Need expertise in steam balancing. Assignments are out with an aggressive schedule. Need a vote in Chicago. Transfer a lot of information to the handbook.
- GP 11 Tom Schlachter
Report by Schlachter. Application for membership was not approved, but should by October. Richardson is helping with coordination with STD 111. Completed and submitted work plan.
- STD 151
Standards rejected re-affirmation of STD 151. Asked for four members to convert to mandatory language and dual units. Hegberg will talk to Standards.

g. Education

Eli Howard

Eli is no longer chairman. Asked for volunteers.

h. Web master

Robert Linder

Updated after Dallas.

9. Liaison Reports from other TCs or Organizations

TC 1.2

Charles Wright

Report by Spevak; SSPC 41.3 will be sent for public review after committee vote.

TC 1.4

David Bornside

20 research projects that they are investigating. Controls and functional testing standard. Moving forward with a work statement on closed loops using live or trend data on a numeric 0-100 basis.

TC 5.3

Gus Faris

Working on handbook to add fcu, fpb, air curtains, and new subcommittee on UFAD. Research project for certified sound data criteria using 260 and 350 from AHRI. Faris explained the difference between fcu and blower coil units.

TC 6.1

Mark Hegberg

TC 7.9

Justin Garner

Guidelines and Standards from various organizations were reviewed. ICC code discussion governing commissioning providers.

TC 9.10

Fred Lorch

Std 110 will go to public review at this meeting. SF6 will be replaced as a tracer gas.

AABC

Gaylon Richardson

Revising stanards

NEBB

Bob Linder

Revising Standards

SMACNA

Eli Howard

ACCA

Don Prather

Manual J will be out later this year.

TABB

John Hamilton

Discussed re-accreditation of programs for technician certifications and new accreditations for programs for fire damper certifications.

10. Old Business

None

11. New Business New York City TAB in existing buildings every 10 years

Handbook and STD 111 will try to include existing building TAB. Guideline 0.2 for existing building Cx will be out for public review.

12. Kettler brought up a proposed SPG to discuss roles and responsibilities of testing controls and sequences between the TAB firms and Cx agents. Cappelin asked who it would report to? Would be assigned to Section 7 of TAC. A suggestion was presented to have a 1.5 hour special session in Seattle to discuss roles and responsibilities between the two parties.

13. Comments: Commended Richardson for his service.

14. Adjourn

NEXT MEETING: New York January, 2014 2:15 – 4:15 PM