



The Razorback Report

Arkansas Chapter #062, Region VIII

American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc.

www.arkansasashrae.org

Volume XVI, Issue IV, December 2004

The President's Message

By John Carter, P.E., Arkansas ASHRAE Chapter President

Boy, the holidays are fast approaching! I love this time of year; its cool turning colder, the leaves are turning, the kids are getting excited; we can hunt, fish, camp and sometimes play golf! It is also a time to start winding down the calendar year and making plans and goals for the upcoming year. Please put ASHRAE on your agenda and schedules for 2005! Make it a goal to serve on a committee or help a committee leader plan an event. I know of several including Eddie Finley, Social Committee Chair, who need volunteers. Eddie is trying to set-up some fun events for ASHRAE like **paintball** or a **couples-night-out** or **bowling** or **other** - *How would you like to splatter paint on the front of he or she who cost you to spend more time on that job reviewing submittals?* Well, how about taking the opportunity and help Eddie with organizing that event.

For those that missed the November meeting in Little Rock and Springdale - you really missed some great presentations. **I want to thank James McKinnie** for asking Kwatsi Alibaruho to educate us on Space Station life support and thermal control systems. Kwatsi was very articulate and really had a tremendous grasp on the technology and I personally learned several things. In addition, Murl Meredith did a great job of organizing the Northwest meeting. We had almost 40 in attendance at our NW section in November and many faces that I have never met. **Thanks to Bill Sharp** for putting together an excellent tour of Concorde Elementary School in the Rogers School District. That school is a very good example of effectively using combination dedicated outside air systems and split system heat pumps.

One society related issue that I want to bring to your attention is how ASHRAE will develop Standards in the future. This is a core issue for our Society, as it affects how ASHRAE related standards will be worded and developed. Questions like: *"Should ASHRAE be developing standards intended for code use?"; "Should Non Code Intended Standards be written in mandatory language?"; "Should ASHRAE write separate standards requiring different levels of performance?"; "Should the scope of Standards responsibilities be expanded to include Design Guides?"* These are root issues for our industry and your feedback is very much needed. Current ASHRAE President, Ron Vallort, has sent you an email requesting you complete a survey on this issue. Please take the time to do this. The results of this survey will be scrutinized heavily for the future of ASHRAE. Visit <http://www.kerr-downs.com/websurvey/ASHRAE/Mem2/> if you did not get the email. Thanks for your input.

December looks to be a great meeting! Hugh Crowther will speak on **Optimizing Chillers & Towers** - *Do you know how to get the best bang for your owner's buck? It is more than just first cost? If it is; how do you get there?* - It is our job to educate our customer into looking at the life of the investment. Sure, there are always going to be those that make the

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December Meeting

PROGRAM

"Optimizing Chillers & Towers"

Presented by Hugh Crowther, P.E.

Technical Session

Cooling Tower Selection for Optimal Performance

Presented by Dan Kelly

Central Arkansas

Date: WEDNESDAY, DECEMBER 1st

Location: WHOLE HOG CAFÉ

Cost: \$15.00 / person

Time: 10:30 am Board Meeting

11:30 am Technical Session

12:00 pm Buffet Lunch

12:15 - 1:00 pm PROGRAM

Northwest Arkansas

Date: THURSDAY, DECEMBER 2nd

Location: AQ CHICKEN - Springdale

Cost: \$12.00 / person

Time: 5:30 pm Tech Session

6:00 pm Business / Dinner

6:30 - 7:15 pm PROGRAM

Please fax your reservation today.

NORTHWEST CORNER

by Murl Meredith, NW Liason

The NW Section has been trying to exceed 40 in attendance - please attend the December 2nd meeting and help us set a new record. Two (2) Razorback Basketball tickets will be given away as a door prize and will be drawn after dinner.

The November meeting was attended by 38 members and guests. Hugh McMillan gave a Region VIII update and Bill Sharp gave a walk through talk on the ventilation system at the new Concord Elementary School of Rogers. Jim White of the Rogers School district and John Mack of Perry Butcher Architects (designer of school) were also present to help with the walk through. Little Rock attendees included John Carter, John Hodoway, and Chance Hollingsworth.

Board Meeting of November 6, 2004**1. Officers and Board Members Present**

John Carter, President
 Chance Hollingsworth, President Elect/Technology

Chair

John Hodoway, Secretary
 Steve Titus, Treasurer
 Tracy Hayes, BOG Member, Newsletter Editor
 Rick Sellers, CRC Alternate, Resource Promotion

Chair

2. Committee Chairs Present

Kim Koch, Student Activities Chair
 James McKinnie, Historian
 Eddie Finley, Social Chair
 Shawn Wilson, Reception Chair

3. Members Present None

4. Meeting Minutes - President John Carter call the meeting to order at 10:39 AM. Previous board meeting minutes were amended to correct the last name of the accountant hired to prepare tax returns for the chapter to "Pittman". Minutes were approved as amended.

Old Business - John reminded the board that several committee chairs have not turned in MBOs and Co-Chair names. He also announced that a 3-month extension request has been filed with the IRS to allow chapter records to be presented in the form needed. Approval of the 03-04 end of year treasurers report will be delayed until the remaining outstanding invoices have been collected.

Programs Chair Chance Hollingsworth announced that the December 1, 2004 meeting will be at the Whole Hog Café with a technical session on cooling tower performance and a program on chiller plant optimization.

Treasurer Steve Titus reported that uncollected 03-04 invoices have been reduced to \$253.00. He and Shawn Wilson will work out the Carrier invoices and John Hodoway will collect the balance.

New Business - President John Carter reported that on-line PAOE reporting has gone well. He encouraged everyone to register early for the San Antonio CRC because of other events in San Antonio. Rick Sellers reported that he had been able to save \$10.00 per night at the headquarters hotel

by booking on-line rather than calling and asking for the ASHRAE group rate.

Technology Chair Chance Hollingsworth reported that the satellite broadcast on Mold will be hosted at Trane Arkansas on April 13th, 2005.

The monthly treasury report was presented by Treasurer Steve Titus. Rick Sellers moved to approve it with the outstanding invoices stated on it. Second by Kim Koch. Motion passed.

Resource Promotion Chair Rick sellers asked for Extended Full Circle contributions to be given to him by the December 1st meeting.

Newsletter Editor Tracy Hayes announced that the newsletter deadline for the December issue will be November 17th. She also asked approval to establish a Chapter account at Kinko's. Approval by consensus.

Student Activities Chair Kim Koch reported on an IAQ project by a 6th grade class at Mountain Pine and asked for \$100 from Student Activities in the budget be used to help with the project. Motion to approve by Tracy Hayes. Second by Eddie Finley. Motion passed.

President John Carter moved that the Chapter pay student adviser meals at the Chapter meetings. Second by Tracy Hayes. Motion passed.

Social Chair Eddie Finley reported that we had a successful golf tournament. He also reported that he is looking into activities that might be called "ASHRAE after hours" that would get members together in relaxed social activities. President John Carter offered a preview of the meeting announcements.

Meeting was adjourned at 11:32 AM.

Action Items - 1. Shawn Wilson/Steve Titus to resolve past due Carrier meal invoices; 2. John Hodoway to collect remaining outstanding meal invoices; 3. Board and Committee Chairs to make Honor Roll (\$100 minimum) contributions to ASHRAE Research and get them to Rick Sellers by the December meeting. This will allow the chapter to qualify for Extended Full Circle.

*Submitted by John Hodoway, Secretary
 2004-2005 Arkansas ASHRAE Chapter #042*

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decision based on first cost for various possible reasons. However, we need to make sure they make an educated decision. Come and hear some ideas that will help you educate your clients. For the technical session, Dan Kelly will discuss **Cooling Tower Selections for Optimal Performance** - *What impacts how a cooling tower is selected? Is it noise? Is it energy use? Is it physical space? Is it all of the above or another reason?* - Well, you have to be present to hear the answers. So, come and eat some Bar-B-Q in Little Rock or Springdale and be ready for a raffle item at both locations!

Membership Meeting of November, 2004

The Technical Session began at 11:42 AM

President John Carter thanked everyone who had contributed to ASHRAE Research in 2003-2004 and reported that the Arkansas Chapter was tops in the Society for dollars contributed. He introduced Rick Sellers, 2004-2005 Resource Promotion Chair. Rick paid tribute to Randy Moore, 2003-2004 Resource Promotion Chair, who was absent from the meeting. The Arkansas chapter raised \$37,082. This was the highest total for any chapter in the Society. The Arkansas Chapter was second in Society with an average \$157.80 contributed per member. Our 2003-2004 performance was \$5,661 over goal, but in the best traditions of Society, our goal has been raised substantially for this year. Randy will be taken by Society to the ASHRAE Winter Meeting in Orlando to receive his Society Award for this outstanding performance. Rick then presented awards to all Honor Roll (\$100 individual, \$150 company) and above donors. The complete list of donors was published in the November Razorback Report.

President John Carter welcomed the 38 members and 4 guests that were in attendance at the meeting. Social Chair Eddie Finley made a brief report on the Fall Golf Tournament and announced plans to set up activities for "ASHRAE After Hours". President John Carter announced the Northwest Section Meeting in Springdale on November 11th and encouraged members to attend. Hugh McMillan, Regional DRC, will speak; and there will be a tour of a new school that has an innovative system for HVAC and IAQ. John also reminded those present about the Mold broadcast on April 13, 2005. Student Activities Chair Kim Koch reported on the IAQ project of the 6th grade at Mountain Pine and promised a report on the project by some of the students at a future meeting.

Meeting adjourned for Lunch at 12:06 PM

Programs Chair Chance Hollingsworth reconvened the meeting at 12:22 PM and called on Chapter Historian, James McKinnie to introduce the speaker. James introduced Kwatsi Alibaruho from NASA in Houston to present the program "International Space Station Life Support and Thermal Control Systems". Mr. Alibaruho is the Manager of Life Support Systems in the Missions Operations Directorate at the Johnson Space Center in Houston. Mr. Alibaruho said that he wanted to give us an overview of five areas related to Life Support and Thermal Control. Those areas are 1. Atmosphere; 2. Ventilation, Temperature and Humidity; 3. Water Management; 4. Hygiene and Sanitation; and 5. Fire Suppression. The International Space Station consists of several modules built in both the US and in Russia and launched by both countries for assembly in space. Currently the stations Russian and American components join at only one place. Because of national pride and political pressures in both countries, the systems for each of the five areas are duplicated in each set of modules, but they are different and

frequently incompatible. The condition of microgravity while in earth orbit makes things that we take for granted on the surface items of concern while in orbit. There are no convection currents of air, no settling of pockets of denser gases, and water doesn't go in any direction by itself are two examples of this. This means that much attention must be paid to small things that pretty much follow the pull of gravity on the surface. Oxygen must be produced in orbit or shipped up in tanks. Electrolysis of water to hydrogen and oxygen is the principal method of providing breathing oxygen to the crew. Carbon dioxide must be collected and disposed of in order to prevent toxic reactions by the crew. The carbon dioxide is captured in a compound called zeolite which is then baked in a vacuum to offgas the carbon dioxide. Zeolite also has an affinity for water, so preventing water loss in scrubbing the carbon dioxide is also a problem. Lithium hydroxide is also used to scrub carbon dioxide, but it cannot be regenerated in orbit like the zeolite and is mainly a backup system. Additionally, certain other gases must be monitored and controlled. They include hydrogen, water vapor, nitrogen, methane, and carbon monoxide. The International Space Station is about 175 feet long, averages 15 feet in diameter, and contains 13,361 cubic feet of volume. Russian air conditioning systems use conventional refrigerants, Triol (an alcohol), and Ammonia. The US air conditioning systems use water, to which a small amount of sodium hydroxide is added for microbial control. The PH of the fluid is almost neutral. Air is circulated among the modules at 100 to 122 FPM. HEPA filters are used and changed every 90 days. Heat rejection is only by radiation to deep space and the large radiators that are used dump heat more slowly than heat rejection equipment on the surface that can use air or water as a heat sink. The US system exchanges heat from the water loop to the pure ammonia loop that runs through the radiators. The Russian and American potable water system are incompatible because of the different biocides that are used. Russia uses a silver-based system and the US uses an iodine system. If mixed, the two biocides combine into a salt that doesn't bother microbes. A two-man crew needs about 10 liters of water per day. A crew mission does not currently exceed six months because of physiological effect of longer periods of microgravity. The station has a design life of 15 years although an extension to 20 years is under consideration. The major stress on the station is the temperature gradient from sun side to space side that varies from four degrees Kelvin on the space side to 250 degrees Fahrenheit on the sun side.

Program Chair Chance Hollingsworth announced that the next Meeting is December 1st at 11:30 AM at the Whole Hog Café with a technical session on cooling tower performance and a program on chiller plant optimization.

The meeting adjourned at 1:25 PM

*Submitted by John Hodoway, Secretary
2004-2005 Arkansas ASHRAE Chapter #042*



American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

Arkansas Chapter Meeting RSVP Form

Company Name: _____
 Phone #: _____ Fax #: _____ - _____
 Signed: _____ E-mail: _____

ROUTING

For reservations to the Central Arkansas Chapter meeting fax this form by **Monday, November 29th** to 501.370.9298 *Attn: Chance Hollingsworth*

For reservations to the Northwest Arkansas Chapter meeting fax this form by **Tuesday, November 30th** to 479.443.0580 *Attn: Murl Meredith*

MEMBER NAME (Please Print)	CENTRAL Dec 1st	NW ARK Dec 2nd	EATING (Y or N)

NOTES: The meal is no cost to student members, however an RSVP is necessary - All "no shows" will be responsible for the cost of their meal - **In order to provide you with the best service for your Chapter's money, it is necessary to RSVP for each meeting.**

DECEMBER PROGRAM - CENTRAL & NORTHWEST ARKANSAS

"Optimizing Chillers & Towers"

Presented by Hugh Crowther, P.E.

How a system operates at design conditions is not always a good indicator of its overall annual performance. This program emphasizes control logic and design conditions and how they can be used to optimize chiller, cooling tower and condenser pump system performance throughout the year.

Based on the July 2004 Article Published in the ASHRAE Journal Titled "*Optimizing Chillers & Towers*".

Program Speaker, Hugh Crowther, has served as a Director and Regional Chair for Region II, RVC Refrigeration, a voting member of the Refrigeration Committee and as a member of TC 8.3. He also chaired the Ozone Depleting Substance PP/S committee. He is currently a member of the Board Planning Committee, Standards Committee and Chair of Standards Appeals. Hugh has written articles for the ASHRAE Journal, HPAC Engineering and Engineered Systems as well as numerous application guides on a wide range of HVAC topics.

DECEMBER MEETING SPONSOR



Jack T. Carter Co., Inc.

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Membership Promotion

By James Dayer, *Membership Promotion Chair*

ASHRAE is seeking younger members through a new member grade. The new "Affiliate Grade" will help ASHRAE broaden its appeal and remain vibrant by reaching out to younger members. This new grade is being implemented to hopefully bridge the gap between Student members and the traditional Associate Grade member.

Affiliate Grade is open to new members under the age of 30 and can be held for up to three cumulative years. The annual dues for the Affiliate Grade is only \$40 per year plus Chapter Dues. Affiliate Grade members will have access to member-only pages of the ASHRAE.ORG website; will receive the ASHRAE journal, ASHRAE insights and newsletters; and will receive a 20% discount on most ASHRAE publications, ASHRAE Learning institute courses, and meeting registrations.

If you know of someone meeting the "Affiliate Grade" criteria please invite them to a meeting and pass this information along. Please feel free to contact me at jdayer@fluidsolutionsinc.com or 501.663.8886 for more information.

Student Activities

By Kim Koch, *Committee Chair*

Several exciting activities are happening in the student segment this month. Chris Ahne traveled to Arkansas Tech University where he conveyed a great message of what ASHRAE is and how it can help the students in their studies and future careers. I would like to thank Chris for volunteering his time to speak to these students.

Another exciting event happening in student activities is our involvement with the robotics team of Mountain Pine Elementary School. Our chapter is helping to sponsor the sixth grade robotics team. This year they are focusing on how technology can help children in schools with illnesses and disabilities. The class has decided to present a report concerning how technology can help the many students with asthma and other respiratory illnesses by improving the air quality in their school. We are looking forward to our February meeting where the team is going to present their report and demonstrate their robot. These students are truly inspiring.

I am continuing to receive resumes from graduating students. If you are interested in obtaining copies of the resumes you can contact me at kkoch@tmecorp.com.

This Month in Arkansas ASHRAE History...

By James McKinnie, *Chapter Historian*

1 Dec 1972 – The chapter held its annual Christmas party at the Cadillac Club in the Magnolia Inn in Little Rock.

3 Dec 1982 – The chapter held its annual Christmas party at the North Hills Country Club.

13 Dec 1989 – The board met at St. Vincent's Infirmary Medical Center at 4:30pm to discuss the treasurer's report, with 52 members having yet to pay their national dues. Also discussed was a sell-out of advertising space in the monthly newsletter and the upcoming Christmas party. John Jaco made the technical presentation on non-overloading pumps. After the meal, Alex Weimerscheimer of Alfa-Laval presented a history, parts breakdown and the future of plate heat exchangers.

Thank You to all the ASHRAE FALL GOLF TOURNAMENT SPONSORS!

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Corporate Sponsors contributed
\$250.00 with proceeds going to
Arkansas ASHRAE Research*



**Arkansas ASHRAE
Research FALL
GOLF TOURNAMENT
Results:**

1st Place - Eddie Finley, Wayne Kellar,
Bret Woods & Mike Davis

2nd Place - Ronnie Garrett, Chris Yarberry,
Donnie Yarberry & Barry Henderson

3rd Place - Tad Hankins, Bud Summers,
Mike Sadler & John Jaco

Long Drive - Chris Yarberry
Closet to Pin - Brian Langley

***Thank you to all who participated
and to our Sponsors!***

(See a complete list of Sponsors on page 5)

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<u>Treasurer</u> Steve Titus	501.375.1181	sctitus@aristotle.net

Board of Governors

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Tom Hanlon	501.661.0621	tjhanlon@trane.com
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Randy Moore (Delegate)	501.280.0404	rmoores@airetechcorp.com
Rick Sellers (Alternate)	501.374.3731	rsellers@pettitinc.com

Committee Chairs

Membership	James Dayer	501.663.8886
Student Activities	Kim Koch	501.666.6776
Technology Transfer	Chance Hollingsworth	501.374.5420
Historian	James McKinnie	501.987.7666
Refrigeration	Chris Ahne	501.661.0621
Resource Promotion	Rick Sellers	501.374.3731
Honors & Awards	Randy Moore	501.280.0404
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NW Section	Murl Meredith	479.443.0571
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The Razorback Report

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