



# SAABE TIMES

A publication of the San Antonio Association of Building Engineers

November 2005

Mark Your Calendar—

## JOIN US FOR OUR NOVEMBER LUNCHEON

The next General Membership Meeting of the San Antonio Association of Building Engineers is set for 11:30 am on Wednesday, November 16 at the Alamo Cafe on 281 (just north of Bitters). This month's meeting is sponsored by Mechanical Reps/Acutherm and features speaker David Trisko of Acutherm.

With multi-room zones, either people are uncomfortable or energy is wasted. When the multi-room zone thermostat is in an unoccupied office, energy is used over-supplying empty offices. And when the office with the thermostat is empty, the people in the occupied offices will be uncomfortable. Averaging is unsatisfactory. VAV modules are ceiling diffusers with the thermostat and VAV terminal built in. No electronic or pneumatic controls, but a built in sensor working independently within the diffuser which controls air flow to precisely match the comfort requirements of the room or portion of the room served. Come learn more about it.

The meeting will be held in the first floor Travis/Bowie rooms, to the right of the entrance. There is plenty of parking at the back of the restaurant. **Please make sure to check in at the front desk when you arrive.**

Please RSVP to (210) 408-1699 by Tuesday, November 15. PLEASE RSVP so we can be sure to have enough meals on hand!

We hope to see you there! ❖

## Upcoming SAABE Events

### Construct-A-Kids Christmas

For the third year, SAABE will participate in the Construct-A-Kids Christmas Toy Drive, sponsored by *Construction News*. Please bring a new, unwrapped toy to the November SAABE meeting, and we'll deliver SAABE's donations on Friday, December 9. We recommend purchasing items in the \$10-\$25 price range, for all ages (up to 18 years old). All donations benefit abused or neglected children in Bexar County.

### SAABE Holiday Social

Mark your calendars now for the SAABE Holiday Social on **Friday, December 16** from 3-6pm at Dave & Buster's (at Crossroads Mall). We'll have some good food to eat, a cash bar, and there will be some pool tables available (as well as the nearby arcade). Stop by and enjoy some good food and camaraderie with your fellow SAABE members.

### BOMI Study Session

If you're studying for BOMI, SAABE will help you study two times a month at One Oak Park's building conference room on the 5th floor (1020 NE Loop 410). Sessions are the first and third Thursday of each month from 11:30am-1:00pm. Bring your own lunch.

Please RSVP to Doug Graves at 828-7712 if you will be attending, since space is limited.

The meeting will open with a 20-30 minute question and answer session. We then will break up into smaller groups that are studying the same topics. ❖

CELEBRATING  
**20 YEARS**  
OF EXCELLENCE IN  
BUILDING ENGINEERING

## A Message from the President

by Bob Beal

### My Absence

Thanks to Mike Halvorsen for covering the luncheon for the last two months. I had a couple of unavoidable events that needed my presence. I do not know about you folks, but to me, as you get older, time becomes more of a valuable commodity.

### Change of Season

I can remember when I was growing up, it seemed the seasons were more timely here in Texas. It seemed it actually started getting colder earlier in October, real cold in December, and warmer in March. I guess I really never paid much attention to the actual dates. Since I have been in the building maintenance trade, they have become some of the most important annual events on my calendar. The problem in San Antonio is that it can be 90 degrees today, 49 tomorrow, and 90 again by the end of the week.

It is time again to get out the squeeze bulb and your pneumatic gauges. I have a pretty good EMS system, but even the best systems need tweaking during the so-called season changes we have here in Texas. In my building I have just the minimum of outside air and suites like Xerox have a pretty good load in their Demo room. 90% of the suites in my building do not actually need chilled water to cool when it is below 50 or 55 degrees, but the other 10% get a little stuffy. How often does it get below 50 degrees all day in San Antonio? In the fall and winter months, I have to change the start times of our AHUs one or two times a week. In summer, I stagger them starting at 3:00am and do not have to mess with them until fall.

A whole lot of money can be saved on utilities during cooler months if you pay attention to events in your building that you take for granted in summer months. You can kind of make up for some of the dollars you spent in the summer if you pay attention to your building. The problem is that these events usually occur in the early hours of the morning. I can often get-by by starting my AHUs about 5:00am or 6:00am at this time of the year because I do not have to get the heat out of all the concrete and furniture. But if it is 80 degrees in the day and only about 70 at night, I may have to change that back a little. Get to know your building, learn its construction, log how many times your chiller stops and starts every day, check your chilled water supply and return then adjust when needed, keep a good head pressure by PAYING ATTENTION TO YOUR COOLING TOWER, lower the static pressure set point on your AHUs, and do not forget that a lot of power is wasted by your fan powered heating VAV boxes. Its one of the more time consuming annual preventive maintenance items so CHECK AND CALIBRATE YOUR HEATING VAV BOXES ANNUALLY. We are referred to as "engineers" for a reason. It is a Chief Engineer's responsibility to see that this happens,

and it is the Operating Engineer's responsibility to learn about this. Some managers may not know all that it takes to run an efficient building; other folks may think we just watch computer screens, change lights, and unplug toilets. They know that things need to be done but may not know all that you do to get it done. But I guarantee they notice when your electric bill goes down.

### BEOTY

Howard Newsome is our first 2005 BEOTY nominee. Way to go, Howard! We need more, so lets get going. See page 5 for full details. Any questions on how and when, please call Mike Halvorsen or myself. ❖

The Higher Standard Since 1948

**COMMERCIAL CLEANING, SERVICE & RESTORATION**

With over 55 years of **EXPERIENCE**, the  
**PROFESSIONALS at BLACKMON MOORING**  
know a thing or two about **SERVICE.**



- Carpet
- Air Duct
- Furniture
- Tile & Grout
- Heating
- Air Conditioning
- Plumbing
- Fire & Smoke
- Water
- Mold

**BLACKMON MOORING** **STEAMATIC**  
Toll Free - 24 Hours  
**1.877.730.1948**  
www.blackmonmooring.com  
**24 Hour Emergency Response**

Daryl "Monse" Johnston - Pro Football Champion & FOX Sportscaster

San Antonio :: Austin :: Dallas/Fort Worth :: Houston :: Lubbock :: Midland/Odessa :: Oklahoma City



## Tech Talk #99: Refrigeration/Air Conditioning—The Basics

Part 2 of 4

by The Charlie

### Three States of Matter/Change of State

All matter is considered to exist in one of three forms or states: **solid** (glass, iron, ice, etc.), **liquid** (gasoline, alcohol, water, etc.), and **gas or vapor** (oxygen, hydrogen, water vapor, etc.). Many substances can exist in any one of the three states, depending upon their temperature and the pressure they are subjected to. *The change that occurs when a substance changes from a solid to a liquid, and from a liquid to a vapor, or vice versa, is called a change of state.* Changes of state work both ways, depending on whether heat is being added or removed (i.e. the removal of heat from steam will condense to a liquid, the removal of heat from water will change it to ice).

### Sensible Heat/Specific Heat

*The heat which, when added to or removed from a substance will change the temperature of the substance, without change of state is called sensible heat.* It is so called because it can be detected by the sense of touch, or with a thermometer. When water is heated from 32°F to 212°F, an increase in sensible heat occurs. One Btu will change the temperature of one pound of water one degree Fahrenheit. However, for substances other than water, the amount of heat, which must be added or removed from one pound of substance to cause a temperature change of one degree, will not necessarily be one Btu. It will probably be less than one Btu, but its actual value will vary from one substance to another.

*The amount of heat (in BTU) required, to change the temperature of one pound of a substance one degree Fahrenheit is called specific heat.* The specific heat of water is 1.0 and the specific heat of other substances is expressed as percentages of the specific heat of water. For example, the specific heat of fresh apples is 0.86. Therefore, 0.86 Btu will cause a one degree F change in the temperature of one pound of apples. Cast iron has a specific heat of 0.12 and if one Btu is added to one pound of cast iron, its temperature will be changed 8.33 degrees ( $1 \div 0.12$ ).

### Latent Heat

*The amount of heat to be added or removed to cause a change of state is called latent heat.* The word latent means hidden or unseen because it cannot be detected by sense of touch, or by a thermometer. Heat must be added to a solid to cause a change of state to a liquid and heat must be added to a liquid to cause a change of state to a vapor. On the other hand, heat removal is required to change a vapor to a liquid or a liquid to a solid.

The latent heat, which is added or removed to cause a change of state from a solid to a liquid, or a liquid to a solid, is called the *latent heat fusion*. The latent heat in a change of state from a liquid to a vapor, or vice versa, is called the latent heat of vaporization. It may also be called the latent heat of melting, or the latent heat of freezing.

The latent heat in a change of state from a liquid to a vapor, and vice versa, is called *the latent heat of vaporization*. It may also be called the latent heat of evaporation. The latent heat of evaporation also varies with the substance, and is subject to some variation depending on the pressure of the substance. For water at sea level, a pound of water will absorb 970 Btu as it changed to a vapor, vice versa, 970 Btu must be removed to cause it to condense to liquid water.

### Sublimation

Water and other common substances normally pass through a liquid state when undergoing a phase change from a solid to a vapor (ice/water/evaporation), and vice versa. However, substances as water may also change directly from a solid to a vapor state (i.e. dry ice). *Sublimation is the transformation of a solid into a vapor without passing through the liquid state.*

Products such as meat and ice cream, which are frozen, may experience dehydration (freezer burn) if not protected by a wrapper or other protective container, which surrounds the product with a vapor barrier. The heat involved in such a change of state is called *the latent heat of sublimation*, and is equal to the sum of the latent heat of fusion and the latent heat of vaporization.

### Vapor and Gas

There is a tendency to use the terms *vapor* and **gas** interchangeably and for practical refrigeration work it makes little difference which term is used but if you are even cornered: it can be said that when a substance changes state by boiling, or by evaporation (which is considered to be the same change of state but only slower), it changes from a liquid to a vapor. If heat is added to a vapor so that its temperature rises significantly above its boiling point it is then considered to be a gas. However, in the normal applications of refrigeration, the temperature of the evaporated, or boiled liquid, never gets high enough above the boiling point for it to be classified as a gas, so it is properly called a vapor.

**Next Month:** Pressure and Head

**CHARLIE'S LAW:** Ever notice how one careless match can start a forest fire but it takes a whole box of them to get the barbecue pit going?

JUSTA MAINTENANCE MAN ❖

## Get Ready for the 2005 SAABE Membership Directory!

The new SAABE Membership Directory will be published this fall. Regular members—if your contact information has changed recently, make sure to let Laura know (her email address/phone number is on the back page). Vendors—don't miss your chance to reach over 150 SAABE members with an ad in the directory.

### Prices:

Cover (limited availability):

Back outside: \$329

Front inside: \$274

Back inside: \$219

Full page: \$164

Business card: \$109

See the SAABE website ([www.saabe.org](http://www.saabe.org)) for ad dimensions and an insertion order

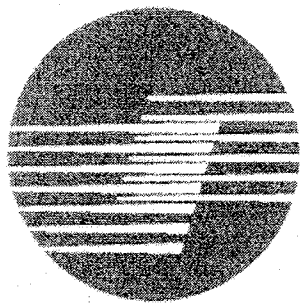
Send ad copy (in JPG, GIF, or TIF formats; black/white/gray tones only) and payment to SAABE, PO Box 780785, San Antonio, TX 78278, or email to [laurabray@braycommunications.com](mailto:laurabray@braycommunications.com) ❖

## City of San Antonio Board Openings

City Councilman Chip Haass is seeking applicants to fill the following board and commission vacancies: Mechanical Board of Appeals (Licensed Mechanical Tech); Plumbing Appeals and Advisory Board (Mechanical Engineer); Historic and Design Review Commission (Landscape Architect). Those interested in getting involved in their community and making recommendations for improvements are encouraged to submit a current resume and completed application.

To obtain an application or for further information, applicants may stop by the district field office located at 1802 N.E. Loop 410, Suite 102. Applications may also be obtained by visiting <http://www.sanantonio.gov/clerk/boards>. Current resumes and completed applications must be received no later than November 30, 2005.

For more information call 824-7355 or 207-7063. ❖



# TRANE®

*It's Hard To Stop A Trane.®*

3650 Highpoint Drive, San Antonio, Texas 78217  
PH – (210) 657-0901 FX – (210) 657-0627

San Antonio: TACLA004724C

<http://www.trane.com>

Scott Meyerkord [sameyerkord@trane.com](mailto:sameyerkord@trane.com)

Ken Dixon [krdixon@trane.com](mailto:krdixon@trane.com)

Jeff McCombs [jbmccombs@trane.com](mailto:jbmccombs@trane.com)

Jeff Turov, [jturov@trane.com](mailto:jturov@trane.com)

*Equipment Systems*

*Controls*

*Parts*

*Services*

*Training*

*Contracting*

*Cooling Towers*

*Rental Equipment*

## Nominations Open for 2005 Building Engineer of the Year

The San Antonio Association of Building Engineers invites you to nominate your/a Building Engineer for the 2005 SAABE BEOTY Award. This prestigious award exemplifies an engineer's achievements and dedication during the past 12-to-16-month period as related to the building industry.

To nominate a Building Engineer, simply send a letter with your name and contact information, the candidate's name and contact information, and what contributions he/she has made during the past 12-to-16 months that makes this candidate deserving of the award. You can also include information such as training or award certificates, tenant letters, or other materials to support the nomination. The individual must be a member in good standing with SAABE. We encourage you to nominate outstanding assistant engineers for this award, also. Some of the evaluation criteria include:

- Participation in SAABE events and meetings
- Continuing education (in the past 12-16 months)
- Major projects in the past 12-16 months
- Employee training
- Tenant & owner/manager evaluation letters
- Safety record
- Community participation

Send nominations to SAABE (address on page 8). Please call the SAABE office if you have any questions.

**DON'T MISS THE  
DEADLINE FOR NOMINATIONS:  
THURSDAY, DECEMBER 1, 2005 ❖**

**Don't Wait... For an  
Emergency to get  
your BACK-UP Generator  
installed or serviced!**

Our factory-trained technicians can service any make & model generator set or automatic transfer switch. We also provide preventative maintenance and customer support agreements. We can even sell or rent you a new or additional set or switch.

Sales: Ed Moseley      Service: Todd Moseley

**(210) 648-8407**

**HOLT** **CAT**

**THANK YOU to these vendors, who  
have provided Last-Thursday Training  
Seminars this year:**

- Southpro Restoration
- Stephen and Stephenson
- Bolin Plumbing
- Blackmon Mooring Steamatic
  - Curaflo
- Gerloff Company ❖

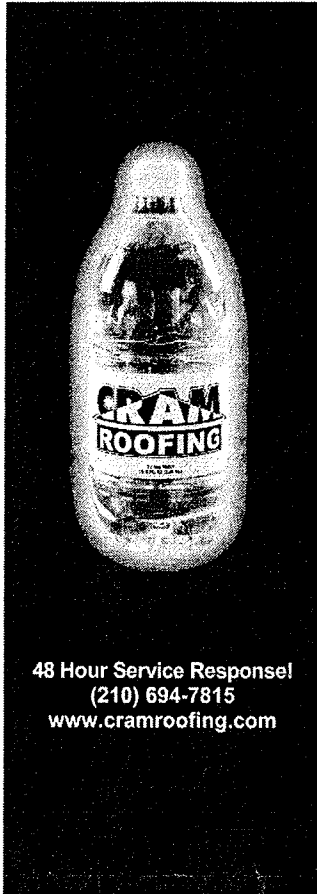


**Moore Lighting  
& Electrical Services**

**Paul Moore**

PO Box 1499  
Houston, TX 77002

Fax 210-695-9248  
210-695-9242



48 Hour Service Response!  
(210) 694-7815  
www.cramroofing.com

## BRANDT ENGINEERING CO.

11111 Iota  
San Antonio, Texas 78217  
Phone 210-599-6120  
Fax 210-599-7921  
Email [tshamer@brandteng.com](mailto:tshamer@brandteng.com)  
[diefel@brandteng.com](mailto:diefel@brandteng.com)

### Total HVAC Services

- ✓ Preventative Maintenance
- ✓ System Upgrades & Retrofits
- ✓ Engineering / Design
- ✓ 24 Hours Emergency Service
- ✓ Building Automation

(210) 599-6120

Ronnie Shaner

David Felts

## Welcome New Members

### Paul Ingram

Pavecon  
18680 Marbach  
San Antonio, TX 78266  
(210) 798-1111  
[pauli@pavecon.com](mailto:pauli@pavecon.com)

### John Gargotta and Scott Nabb

Service Mechanical Group  
2543 Boardwalk  
San Antonio, TX 78217  
(210) 821-6990  
[smgjohn@satx.rr.com](mailto:smgjohn@satx.rr.com) or [smgscott@satx.rr.com](mailto:smgscott@satx.rr.com)

### Dave Goeke

Mechanical Reps, Inc.  
4710 Perrin Creek, Ste 300  
San Antonio, TX 78217  
(210) 650-9005  
[daveg@mechreps.com](mailto:daveg@mechreps.com)

### Brooke Havard

Gillette Air Conditioning  
1215 San Francisco  
San Antonio, TX 78201  
(210) 735-9235  
[bah@gillette-ac.com](mailto:bah@gillette-ac.com)

### Todd Wilburn

Filter Technology Co., Inc.  
4911 Augusta Sq.  
San Antonio, TX 78247  
(210) 491-0200  
[toddfg@evl.net](mailto:toddfg@evl.net)

### Tom Ready

Reata Properties/Court Building  
219 E. Houston, Ste 250  
San Antonio, TX 78205  
(210) 222-2100  
[tready@reatares.com](mailto:tready@reatares.com)

If you know someone who'd like to join SAABE, have them visit our web site at [www.saabe.org](http://www.saabe.org) to obtain a membership application. ❖

# The Daily Chronicle

## Choose York International for HVAC Needs!

Are you receiving San Antonio's finest HVAC services? We are the local service of York International, a manufacturer of

*"Let me show you how York San Antonio Service can get the most out of your HVAC dollars!"*

**Chris Finger,**  
Service Sales Representative  
(210) 496-6631, Ext. 602

### Our People Make the Difference!



### What We Offer:

- Quick response 24 hours a day, 7 days a week
- Factory trained technicians
- Experience with all major brands of equipment
- Maintenance Agreements for all your service needs
- Increased reliability through planned maintenance
- Energy Cost Savings
- Engineered enhancements to your equipment
- Solutions to your CFC refrigerant problems
- Chiller manufacturing plant located in San Antonio
- Turnkey equipment replacements

*Call today!*

**YORK**

INTERNATIONAL

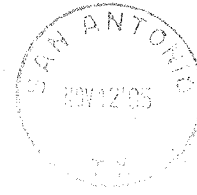
**(210) 496-6631**

5692 E. Houston St. Suite 101  
San Antonio, TX 78220

**...and much more!**



San Antonio Association of Building Engineers  
 PO Box 780785  
 San Antonio, TX 78278



U.S. POSTAGE

0037

METER 170200

Charles Mikolajczyk, Jr., CBE-M  
 Endeavor Real Estate Group  
 8000 IH 10 W, Suite 250  
 San Antonio, TX 78230

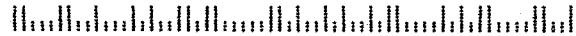
RECEIVED NOV 14 2005

## SAABE TIMES November Issue

### *Final Thought:*

“A hard heart is no infallible protection against a soft head.” — *C.S. Lewis*

78230+3880-30 C025



### 2005 Board of Directors

Bob Beal President	377-2626
Tom Lasater 1st Vice President	403-8241
Mike Halvorsen 2nd Vice President	979-8002
Kendal Langenberg Secretary	885-5194
JR Uresti Treasurer/SABOMA Representative	495-2195
Jock Tilghman Education Director	681-2494
Allen Mangrum Vendor Representative	824-7683
Elena Castillo Past President	822-8570
<hr/>	
Laura Bray Association Manager (laurabray@braycommunications.com)	408-1699

### Membership Luncheon

**November 16, 2005**

**Time: 11:30 a.m.**

**Location: Alamo Cafe on 281**

**VAV Modules**

**Sponsored by Mechanical Reps/Acutherm**

**Upcoming Programs:**

**Friday, December 16**

**Holiday Social**

**Wednesday, December 21**

**Annual Board Elections and Business Meeting**

The *SAABE Times* is edited by Laura Bray and printed monthly for the San Antonio Association of Building Engineers by:



210-340-5454

email: inkspotink@sbcglobal.net