



SAABE TIMES

A publication of the San Antonio Association of Building Engineers

March 2006

Mark Your Calendar—

JOIN US FOR OUR MARCH LUNCHEON

The next General Membership Meeting of the San Antonio Association of Building Engineers is set for 11:30 am on Wednesday, March 15 at the Alamo Cafe on 281 (just north of Bitters). This month, our speaker is Ray Martinez, Chief Electrical Inspector for the City of San Antonio. He will be reviewing the city electrical code and state licensing rules. There will be plenty of time for Q&A. Mr. Martinez has been with the city since 1995 and was appointed Interim Chief in February 2004. He officially assumed his new position in December 2004. As Chief Electrical Inspector, Mr. Martinez ensures the safe application of the electrical code for all construction projects in the city.

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 do not leave valuables in your vehicle, as members have reported attempted break-ins in the restaurant parking lot.

Please RSVP to (210) 408-1699 by Tuesday, March 14. PLEASE RSVP so we can be sure to have enough meals on hand!

We hope to see you there! ❖

BOMI Discussion/Action Group

by Tom Lasater

We now have six members of our group; therefore, we have gone from a three-wheel mode of transportation to a six-wheel truck with a diesel-powered Cummings. Our meetings are the first and second Thursdays of the month, which leaves our members free to attend our regular SAABE luncheons on the third Wednesday and the training seminars on the last Thursday. We have two textbooks with our members, two on order, and two pending. Once all our members have textbooks, we will begin the actual course study at our individual pace.

We gather at One Oak Park (1020 NE Loop 410, labeled "Chase Bank" on outside) from 11:30am–1:00pm, and we've been meeting since November 2005. Our time together has not been wasted since we had access to the BOMI textbook on Refrigeration Systems and Accessories. We have covered the refrigeration cycle; sensible and latent heat; superheat and sub-cooling; and the function and operation of compressors, metering devices, evaporators, condensers, dirt on coils, and air in the Freon system.

Our purpose is to provide a meeting where questions can be asked and answered, areas not fully understood can be explained, and where we can have a look at hands-on refrigeration systems with gauges, thermometers, amp and volt meters. We encourage everyone from assistants to building engineers to join us to increase their knowledge of air conditioning systems, how they function, and how to measure them.

We meet every month (bring your own lunch). Come and gain additional knowledge about our trade and interact with fellow engineers.

For any additional information or questions, call Tom Lasater (210-771-5824) or Doug Graves (210-828-7712, Senior Engineer for Hines at One Oak Park). ❖

Education Corner

Troubleshooting Mechanical and Rotating Equipment

- April 26–27, San Antonio; May 3–4, Austin
- A practical course designed for building facility maintenance technicians.
- Cost: \$895

Understand Air Conditioning and Refrigeration Systems

- March 22–23, McAllen; March 29–30, San Antonio
- Principles, components, systems, troubleshooting and maintenance.
- Cost: \$790

Math & Measurement for Maintenance, Repair and Operations

- April 24–25, San Antonio; May 1–2, Austin
- Learn how to measure, what to measure, and the calculations to help make it all make sense.
- Cost: \$795

All above classes are offered by American Trainco. To register, visit their website at www.americantrainco.com, or call 877-97-TRAIN.

Contact Laura Bray (408-1699) if you know of other courses or events. ❖

A Message from the President

by Bob Beal

Never Send an E-Mail You Don't Want the Whole World to See

When I first received an e-mail address, it was forced on me by my employer. I did not complain too much and like most first-timers, I immediately went to town. And like most first-timers, I quickly learned the hard way the do's and don'ts of sending e-mails. We all send them, and I am not about to lecture anyone about sending e-mails. After all, they can be fun and can be a great networking tool. Funny pictures and jokes come with the territory. Written words, however, come with a little more firepower. Most spoken words (unless recorded) are gone with the wind. Spoken words also come with emotion and definition. They are immediately defensible. We all have sent e-mails complaining or angrily expressing an opinion. I have often read an e-mail of my own a few days later and wished I had never sent it. It is not easy expressing yourself on a keyboard, and people read their e-mails in different frames of mind. Timing is not always good. Instant impressions are formed, and those impressions can be re-confirmed any time the e-mail is reopened. You also can count on it being forwarded around. E-mails can be forever, so use common sense and watch what you write.

Pedernales Electric Co-Op

As mentioned before, I am working for Pedernales Electric Co-op. We are a non-profit organization and are very enthusiastic about providing services and events to our customers/members when possible. I know that some SAABE members get their electrical service through PEC. If this is you, I would like to know who you are. Please email me at www.beal44@hotmail.com or call me at 210-658-4463.

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SAABE Second Annual Picnic

Just another reminder about our second annual picnic on Saturday, May 6 at Joe's Marina at Medina Lake. Don't forget that we will be able to camp and swim this year. The entry fee is \$5 per person. Camping and fishing are available; check www.joesmarina.com for details on fees. There will be great food, stuff for the kids, and of course the horseshoe tournament. Please mark your calendar and talk to Jeff Turov (657-0901, ext. 160) for details or if you'd like to donate a door prize. ❖

Welcome New Members

Tony Bejarano
Healthcare Realty/Medical Center Towers
210-616-0404

John Kuennen
Dimensions Contracting
210-421-8139
john@dimensionscontracting.com

Carl Michaud
Bolin Plumbing
210-688-3177

John Esley
JOBS Building Services
210-684-0843
jesley@JOBS-AMST.com

Jose Flores
REOC Partners/Lincoln Center
210-377-1122

Mark Freemeyer
Argus Environmental Consultants, Inc.
210-493-2560
mark@argusenvironmental.com

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



Tech Talk #103: Basic Refrigeration Methods

by The Charlie

Part 2 of 2

The Elementary Vapor Compression Cycle of Refrigerant

There are several principles or cycles of refrigeration in use (such as the absorbers and steam jet systems), but the most common one is the *vapor compression cycle* (also referred to as the *mechanical compression cycle*). Because of the importance of this cycle, it is necessary to again point out the following principles.

1. Heat flows from a warmer to a cooler substance.
2. Heat is required to cause a liquid to boil, and the latent heat of vaporization is carried away in the vapor.
3. The temperature at which a liquid will boil of condense depends on its pressure.
4. Depending on the substance and the pressure to which it is subjected to, the boiling point of a liquid can be low enough for it to be considered cold.

There are five major components of a compression cycle of refrigerant. These are the pump (compressor), the condensing chamber (condenser), the restricting device (orifice or valve), the evaporator, and a substance to be pumped (refrigerant). The theory of this cycle is that this sequence can pump vapor through a system causing a change of state and then back to a vapor to be cycled once again due to the facts that; as refrigerant vapor is pumped into the condensing chamber, the removal of heat cools the refrigerant, the refrigerant condenses to a liquid. This liquid can then flow from the condensing chamber, through a valve and back to the evaporator and then to the pump to repeat the process.

The substance which is being pumped and being changed from a liquid to a vapor and back is called the *refrigerant*. The pump is called the *compressor* because it compresses the vapor. The condensing chamber is called the *condenser*, and the place where the liquid evaporates into a vapor is called the *evaporator*. For efficiency of heat transfer, the condenser and evaporator are usually made of pipe or tubing normally with fins. If a valve is used for the restriction, it is called an expansion valve because, at this point, the pressure of the refrigerant changes from a higher to a lower pressure. As this happens, the refrigerant expands so that some of the liquid expands into vapor.

The portion of the system where lower pressure exists (from the restriction of the expansion device, through the evaporator, to the suction side of the compressor) is called the low side. The portion of the system where higher pressure exists (from the discharge of the compressor, through the condenser and up to the expansion valve) is called the high side. Theoretically, the same amount of pressure is present throughout the low side, and the pressure is uniform as well throughout the high side. However, pressures will vary somewhat within each side because of pressure drops due to friction or refrigerant flowing through the evaporator or condenser, or through the piping used to connect the system.

Other terms that should be recognized are condensing temperature and condensing pressure. When a liquid and a vapor exist together, any addition of heat will cause more of the liquid to evaporate, and any removal of heat will cause some of the vapor to condense. The boiling point of a liquid and the condensing temperature of the vapor are exactly the same at any one pressure. Evaporation (boiling) or condensation depends entirely on the heat being added or removed. Heat is added to the refrigerant in the evaporator, so there is concern with the boiling point. In this application, the temperature is referred to as *evaporator temperature*. Heat is removed in the condenser, so there is concern with *condensing temperature*. The important thing to remember is that, because of the expansion device, there are two different pressures in the system. As an example, if the condenser pressure on a R-11 system is 9.6 psig (which is the condensing pressure), the corresponding boiling point is 102°F. This amount is the condensing temperature or the point where condensation will occur, when enough heat has been removed from the refrigerant to lower it to 102°F. These are elementary examples and other items such as saturated vapor and superheat may be an article at a later date.

Next Month: Refrigerants (An In-Depth Look)

CHARLIE'S LAW: Why do doctors refer to what they do as practice?

JUSTA MAINTENANCE MAN ❖

San Antonio Ravens Football Team

Minor League Pro Football has come to San Antonio! The San Antonio Ravens (of the Gulf Coast Football Association) play the Dallas Warriors on Saturday, March 18 at 7pm at Alamo Stadium.

SAABE's own Art Martinez is on the coaching staff and will bring tickets to the March meeting. So send in your RSVP today!

For ticket information, call 210-274-3476 or visit www.eteamz.active.com/sanantonioravens ❖



Communications Check-Up[®]

by Laura Bray

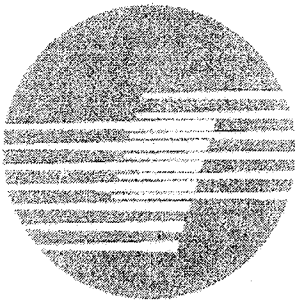
Listening Skills

Have you ever had a conversation with someone, then ten minutes later, couldn't remember what was said? It's embarrassing, and happens to me more times than I care to admit. Many people think listening is a passive activity; after all, you're just sitting there, not doing anything. But if you try and make listening an active skill, you'll remember much more about what was said.

- Stop what you're doing and direct your full attention to the speaker. In person, don't be checking your watch or looking at other people in the room. If on the phone, set aside your email or product catalogs or internet, and completely listen to the person on the other end of the line. Even on the phone, your caller can tell if you're not completely there. (Believe me, I know. My college-age son drives me completely bananas when I'm trying to have a phone conversation with him, and he's simultaneously trying to quietly type an online chat session. I "bust" him every time!)
- Resist the urge to interrupt or complete the other person's thoughts. First of all, it's rude, and secondly, you don't really know his thoughts and can't complete them accurately.
- At the end of the conversation, summarize what was said, especially if action items are involved. That way, both of you are clear as to what's expected.
- Ask questions. This shows the speaker that you're involved and paying attention to what he's saying.
- Consider taking notes. For more involved conversations, taking notes will help you remember important points or things to do.

Next month: Spell-Check is NOT Your Friend. ❖

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February Meeting Summary

by Kendal Langenberg

The February luncheon featured a “roundtable discussion.” Each table visited briefly to come up with something beneficial to share with the group—either a really good idea or a really sticky problem. Mike Halvorsen then led the entire group in revealing each table’s issue to share. It was truly an enlightening time, and we trust that everyone walked away with a useful piece of information to aid in building engineering excellence.

We had a special guest at the lunch, too—all the way from Afghanistan: Charles Gilbert! It was great to see Charles again, and we are so thankful for the safety he has had so far, as well as for his willingness to serve our country and defend our freedom!

Don’t forget all the “housekeeping reminders” that were made at the lunch: the SAABE picnic (May 6); the membership directory being prepared (get your corrections to Laura ASAP); Last Thursday Training each month; BOMI training going on; etc. It’s a busy time for our organization and there are many opportunities to dive in and be involved. Don’t be shy!

Be sure to make plans to be at this month’s luncheon (March 15) at the Alamo Café. A good time is always had by all. See you there! ❖

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Manager Highlight

Do you have an outstanding manager? Maybe one who provided exceptional assistance during a transition or difficult build-out, or support during budget-time, etc? Then nominate him/her for SAABE’s Manager Highlight! The SAABE Board will evaluate all applications and select those to be recognized. Winners will be recognized with an article in the newsletter and a certificate presentation at a SAABE meeting. We’ll also let SABOMA and IREM know!

You can find a nomination form on the SAABE website at www.saabe.org. Or call Laura Bray and she’ll fax one to you.

Nominate your outstanding manager today! ❖

Engineer Spotlight

by Jeff Turov

Robert Andrews, Jr., SMT, CBE-J

Concord Property Group
800 East Sonterra, #180
San Antonio, TX 78258
Phone: 210-822-8600
Fax: 210-822-1143
E-mail: randrews@concord-corp.com

- **How long have you been in the building engineer trade?**

Two years.

- **Any awards, recognition, or special training?**

Robert recently received his certification as a Certified Building Engineer-Journeyman (CBE-J), his Systems Maintenance Technician (SMT) certification, and is studying for his Systems Maintenance Administrator (SMA) certification. He has also attended several energy management controls system seminars.

- **Hobbies/what do you enjoy during off-hours?**

Robert and his wife recently bought a house in Live Oak that was built in 1967, and he spends most of his personal time renovating it.

- **Family?**

Robert has been married for one and a half years.

- **What do you enjoy about the building engineer trade?**

He enjoys the variety of tasks that it offers; he likes the fact that there is always a new challenge around the corner. Robert also enjoys being outside and appreciates the fact that a lot of his work requires him to be outside.

- **Advice you would share with those just entering or considering the trade?**

Be open to trying something different and to stay constantly aware of safer ways to do things. Never forget the importance of education, and do everything you can to obtain your certifications.

- **Any interesting stories from your years in the business?**

One of the properties that Robert maintains is the clubhouse at the Quarry Golf Club. He recently had the opportunity to replace the sixteen structural supports that are located at the front of the building. Robert did this work by himself and feels a great sense of accomplishment now that it is complete. ♦



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SAABE TIMES
March Issue

Final Thought:

"Behold the turtle. He makes progress only when he sticks his neck out." —
 James Bryant Conant

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Membership Luncheon

March 15, 2006

Time: 11:30 a.m.

Location: Alamo Cafe on 281

Ray Martinez

City Electrical Inspector

Upcoming Program:

Wednesday, April 20

Program to be Announced

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



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