



SAABE TIMES

A publication of the San Antonio Association of Building Engineers

October 2006

Mark Your Calendar—

JOIN US FOR OUR OCTOBER LUNCHEON

The next General Membership Meeting of the San Antonio Association of Building Engineers is set for 11:30 am Wednesday, October 18 at the Alamo Cafe on 281 (just north of Bitters). This month's program will be announced soon; check www.saabe.org for updates. You won't want to miss this chance to network with other building engineers and vendors!

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, October 17. **PLEASE RSVP** so we can be sure to have enough meals on hand!

We hope to see you there! ❖

Education Corner

SAABE BOMI Discussion/Action Group

- Every first and second Thursday at One Oak Park (1020 NE Loop 410), 11:30am–1:00pm
- Led by Tom Lasater.
- Free to SAABE members. Bring a sack lunch.

2006 Hotel Motel Engineer Association Trade Show

- October 20–22, Municipal Auditorium
- Cost: \$10 per person
- Features training seminars, demonstrations, and exhibit booths.

National Electrical Code Grounding and Bonding

- October 23–27, Austin
- Gain practical knowledge to apply the latest provisions with confidence.
- To register, call 800-922-2820. Use promotion code 88875.
- Sponsored by National Technology Transfer, Inc.

Basic Electricity for the Non-Electrician

- November 13–14
- Specifically designed for maintenance technicians working in commercial buildings.
- Cost: \$890, use promotion code M24 9402 1
- Sponsored by American Trainco.

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



SAABE Seeks Nominees for 2007 Board of Directors

Every December, SAABE members elect four directors to serve a two-year term on the board. This year, the membership will be electing candidates for the following positions:

- President
- 1st Vice-President
- Treasurer
- Vendor Representative

If you're interested in serving on the SAABE board, contact any board member or Association Manager Laura Bray. We'd be happy to explain the time commitments and duties. It's a great way to get involved and keep your association vibrant and growing! ❖

A Message from the President

by Bob Beal

Well, it is almost time for your current President to ride off into the sunset. My second term is coming to an unavoidable end. By January's meeting there will be a new President holding the reins. At the December luncheon you will be asked to vote on the lucky nominees. I really would like you to think about who you would like to lead you through the next couple of years. It is not really a hard job for someone who has a vision, people skills, and the skills to lead the Board during trying and difficult times. Please try to make the next three luncheons, because a lot is on the agenda (including BEOTY).

What SAABE Has Meant To Me

If you know me you also know that I have lived a very busy life. In the past I have not only been an engineer but I am also a working musician (sometimes four nights a week). I own a Harley Davidson, I have a recording studio, I am a father, and I am into what ever the hobby of the month may be. As an American male I can say I have experienced a fulfilling life. I am a new father, and that has turned out to be number one to this date. Being nominated and elected as President of SAABE has been a close second or third. I would not have been up to the task if this had been the 90s. I have always been humbled by the knowledge of my fellow engineers, and sometimes, I was a little nervous even being in their presence. When I was nominated for the Presidency I was not sure if I was qualified to serve. I said if was going to do it, I was going to dedicate what ever time I needed to be as good as I could be.

With the overwhelming support of the board and the members I took it on and am glad to say that it has been the pinnacle of my working life. SAABE has taught me to be less of a pessimist and more of an optimist when it came to the so-called day-in and day-out problems. SAABE helped me land the job I have now. My relationship with my vendors is better then ever, and most of them will help me out with info any time I call on them. My confidence in solving maintenance issues is 100 % improved because I have 200 members to call and ask a stupid question. I was able to get involved with code change issues in San Antonio and learned a great deal about city politics. I have been able to help others with their careers and have helped people find jobs. I have become a better listener and have been a better person all together.

Along with others I have taken a vision of what I felt SAABE should be and made it reality by streamlining and refurbishing the vision of past leaders. I have now a great deal of respect for the people whose time and effort may have been taken for granted in the past. A few that come to mind are Charlie for his "Tech Talk" articles, Laura Bray's organizational skills, and Doug Graves and Tom Lasater for their "never say die" attitude when it comes to the programs they are involved with. I will dearly miss being President but I am looking forward in taking my SAABE involvement to the next level. God bless SAABE and all its members.❖

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Keith Garrett

Welcome New Members

Please add the following names to your membership directory:

Chris Hughes

Voss Lighting
5670 Randolph Blvd.
San Antonio, TX 78233
210-967-8766
chris.hughes@vosslighting.com

Steven Stewart

Clifford Power Systems
4918 Burleson Rd.
Austin, TX 78744
512-535-8474
sstewart@cliffordpower.com

Updated Contact Info for Current Members:

Mark Rybczynski, CBE-M

MSG Management
13750 San Pedro, Ste 600
San Antonio, TX 78232
210-490-7272
mrybczynski@msgmanagement.com

JR Uresti

Live Oak Group
16500 San Pedro, Ste 290
San Antonio, TX 78232
210-496-7400
andrewuresti@yahoo.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. ❖



Apply for the SAABE Scholarship/Educational Assistance Program

SAABE now offers a program to provide scholarships and educational assistance to SAABE members for participation in courses related to property maintenance (especially SMT/SMA* programs offered by the BOMI Institute).

Applicants must be regular members of SAABE and hold a position in the field of building maintenance. The place of business must be within the San Antonio geographical area. Applicants must have long-term career plans in building engineering/maintenance and must have at least two years of experience in the field. Applicants are responsible for a portion of the cost of any course.

For full details, rules, and an application, visit the SAABE website at www.saabe.org. ❖

* Systems Maintenance Technician and Systems Maintenance Administrator

September Meeting Summary by Kendal Langenberg

All who attended the September SAABE general membership luncheon were treated to some great food at the Alamo Cafe! The fajitas were top notch! For all who missed the lunch, don't let your stomach down again by missing the next luncheon. ☺

To satisfy our educational hunger, we had a very informative presentation from Greg Cunningham of Custom Pest Control. Greg covered the ever-present property problem of nuisance bird control. Be sure to get with Greg if you missed the presentation so that you can be brought up to speed on all the ins and outs of this issue, especially since there are some new developments in dealing with this problem. Thanks again, Greg, for your sponsorship of the luncheon...and for keeping us laughing with those humorous slides!

Don't forget that we need YOU to be available to help with the ongoing development of our wonderful, growing organization! We have several immediate gaps to fill, like an overseer for the student mentoring program, or assisting with the BEOTY award committee. These are real needs, so if you have a desire to help, please don't be bashful. See Laura or any of the board members to volunteer or to get more details.

Remember to attend the Thursday BOMI discussion group if you can make it. This is an excellent FREE way to get more education on various aspects of the trade. Also, if you are interested in attending classes outside of SAABE that you have to pay for, be sure to inquire about the availability of funds in the scholarship program. We are all about the educational well-being of our members!

Make plans now to attend our next luncheon on Wednesday, October 18. Should be another exciting time of visiting with one another and gaining more info to make us more dangerous in the trade, er, I mean, to make us more effective. ❖



SAABE Financial Reports Available Upon Request

The SAABE Association Manager and Treasurer present a summary annual financial report at the December meeting. However, SAABE members are entitled to review SAABE's financial statements at any time. Please contact Laura Bray, SAABE's Association Manager, for more information (210-408-1699). ❖

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Tech Talk #110: Capacity Control 101

by The Charlie

The cooling load of a typical air conditioning system is continually varying, and the system normally requires maximum cooling only a few consecutive hours during the cooling season. If the system is properly designed to provide the maximum cooling, it will have to operate at partial load much of the time. Ideally, the compressor should be able to adjust its capacity to match the load, and the horsepower required to drive the compressor should be decreased proportionally as the load decreases.

The simplest way to control compressor capacity (as in your residential unit) is to periodically turn the compressor on and off. This can be done with your basic thermostat, and this method is suitable for small systems, household refrigerators, window units, etc. This method of control is satisfactory for small compressors where the load is fairly constant and very light loads are not encountered. It is usually unsatisfactory to start/stop large compressors due to the current draw, which causes a drop in voltage, which leads to other issues. Moreover, it is not good to start/stop any compressor frequently for this puts a mechanical strain on the compressor parts and the motor receives a burst of heat from the starting current each time it starts. Therefore, although on-off control is inexpensive and suitable for some small systems, better methods of capacity control must be used for larger equipment.

Multi-speed Compressor Motors

Since the capacity of a compressor is proportional to the compressor speed, on way of regulating capacity is to vary the speed of the compressor. One method of varying the speed of an electric motor is to use a two-speed motor, two low-pressure switches, and a two-speed magnetic starter. At high suction pressure, indicating a heavy load, the compressor is operated at high speed. As the load decreases and the suction pressure falls, one of the low pressure switches opens and changes the speed from high to low. Further decrease in load and suction pressure to a minimum setting causes the second low-pressure switch to open and stop the compressor.

Variable Speed Compressors

Another method of capacity control can be achieved by electronically varying the speed of compressor motors. Electronic motor controllers, known as variable frequency drives or motor inverter drives, are able to regulate motor speed by electronically regulating the frequency of the motor's supply voltage.

Multiple Compressors

Capacity control can also be obtained by using more than one compressor. As an example, if a required capacity of 90 tons was split into three compressors each of 30 tons, two compressors could run and have 67% capacity, or only one at 33% capacity. When multiple compressors are started in sequence, the draw of starting current is less than it would be to start one large compressor. This advantage also allows the use of

smaller electrical wiring avoiding interruption to electrical power systems, which can occur when motors are started.

A tandem compressor offers multiple compressor operation in that it has two hermetic compressors, which can be operated independently of each other. They have an interconnecting housing which replaces the motor end covers of the two machines. Since the crankcases are connected to each other through the housing, pressures are always equalized, and lubrication problems are reduced.

Compressor Cylinder Unloading

A common method of controlling the capacity of a reciprocating compressor is to regulate the operation of one or more of its cylinders. Although the pistons continue to move up and down, they do not pump refrigerant vapor out into the condenser. This results in a reduction in the quantity of refrigerant circulated in the system and reduces capacity.

One method of cylinder unloading the suction valves are held open by some mechanical means controlled by an automatic control device. The lifting of suction valves is a very popular method of unloading and details vary from one manufacturer to another but the mechanical principle is still the same. In addition, when compressors can be started unloaded, less effort is needed to turn the compressors as compared to starting them loaded. This makes it possible to use normal starting torque motors instead of the more expensive high starting torque motors. This also reduces the amount of inrush of starting current and should result in fewer disturbances to the electrical power system.

The second method of unloading is to bypass a portion of the discharge gas back into the suction chamber of the compressor. This control method is adaptable to smaller compressors that have valve plates rather than ring-plate valves.

Effects of Cylinder Unloading on Hermetic Compressor Motor Cooling

An important consideration of cylinder unloading on hermetic compressors is that less refrigerant is pumped under reduced capacity conditions. This results in a reduction in the amount of suction vapor available to cool the motor. The operating range of the compressors having unloaders must therefore be restricted, and operation beyond suction and discharge limits can cause compressor overheating.

Next Month: Hot Gas Bypass 101

CHARLIE'S LAW: If you have a bad cough, take a large dose of laxatives...then you'll be too afraid to cough!

JUSTA MAINTENANCE MAN ❖



Communications Check-Up®

by Laura Bray

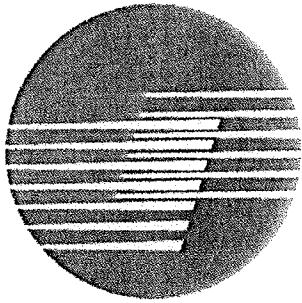
Effective PowerPoint Presentations

Microsoft's PowerPoint is a terrific tool for making presentations. Follow these guidelines for the most effective slides:

- *Limit Fonts and Colors:* Resist the temptation to use multiple fonts and colors. Choose a color scheme/theme (PowerPoint has several templates already loaded), and stick with it. Multiple fonts and colors just give your audience a headache.
- *Careful with the Animation:* While it may be fun to watch your bullet points fade in, zoom in from the side, or dissolve out, keep the animations to a minimum, and keep them consistent (see aforementioned point about headaches).
- *Keep Your Slides Readable:* Typically, you can fit about six bullet points on a slide. Any more than that, and the print will be too small to read. Use slides to make your major points, then expand on the topic as you speak. Don't try to put everything on the slide.
- *Animation and Sound Slow Things Down:* Animated cartoons and interesting sounds might be fun, but they can slow your presentation to a crawl. Only use them if absolutely necessary.
- *Will Your Audience Take Notes?* Consider if your audience will be taking notes during your presentation. If so, provide them with copies of the slides with room on the side for those notes. PowerPoint has several available "notes pages" on the Print menu.

Next month: Improving Your Writing Skills ❖

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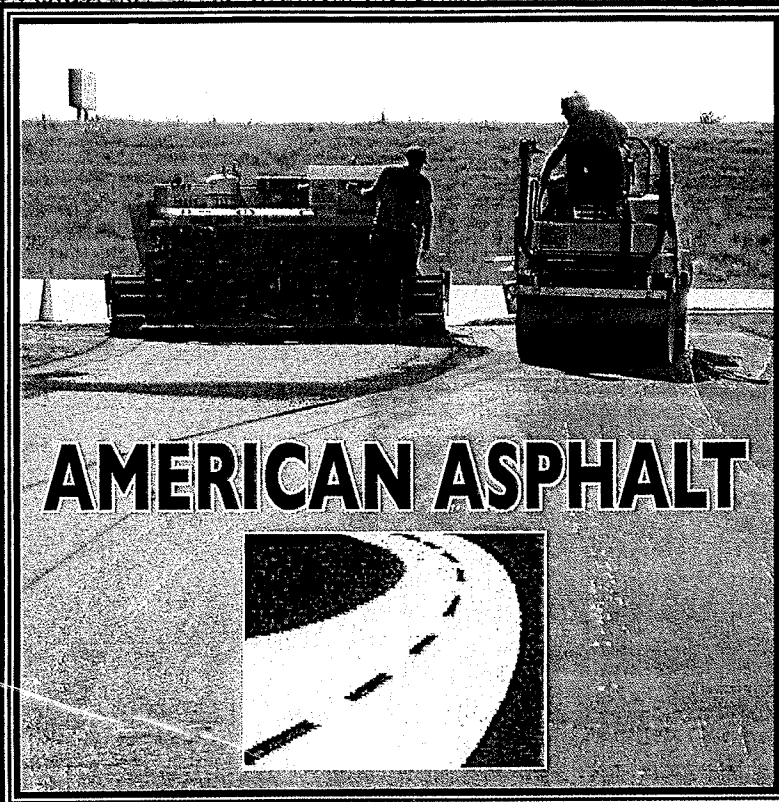
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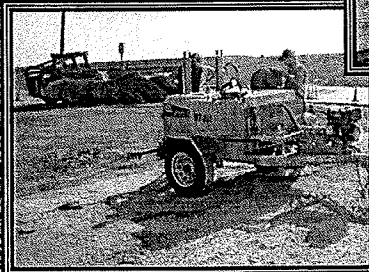
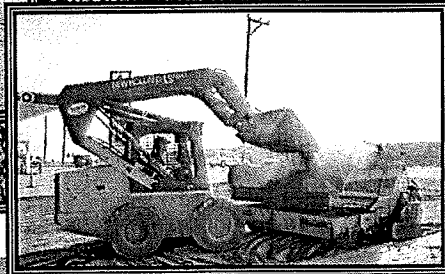
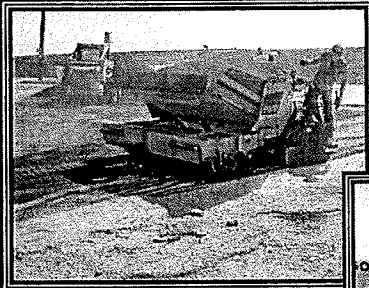
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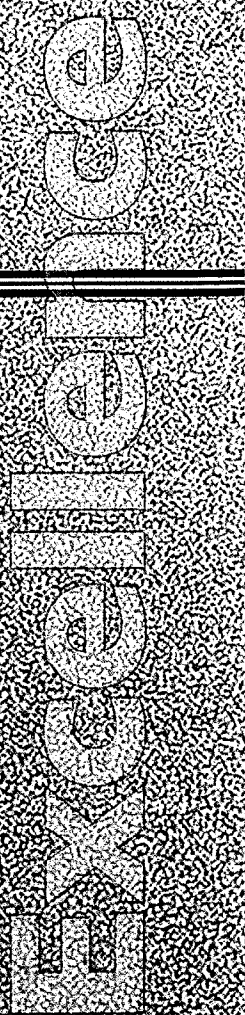


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Engineer Spotlight

by Jeff Turov

Steve Padilla

Trammell Crow Company
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San Antonio, TX 78238
Phone: 210-509-9676
spadilla@trammellcrow.com

- **How long in the building engineer trade?**

Steve has been involved in the building engineering industry for approximately 15 years. He has worked as a subcontractor for the GSA at the San Antonio Federal Complex, the Adams Mark Hotel, La Mansion Hotel, and has currently worked for Trammell Crow for one year. He has been a member of SAABE for one year.



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

Over the years Steve has attended HVAC controls classes through Johnson Controls and Honeywell. He has also attended special seminars through Trammell Crow and holds the Electrical Technicians license for the City of San Antonio.

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

An active collector Steve enjoys his extensive collection of both coins and stamps. His most valuable coin is an 1878 Morgan silver dollar valued at around \$100. He also has an 1878

postage stamp. Did you know that if the postmark date is visible on the stamp it makes the stamp more valuable?

- **Family/children?**

Steve has been married to his wife for fifteen years. They have a twenty-one year old child.

- **What do you find most beneficial about being a SAABE member?**

The most beneficial aspect that Steve finds are attending the luncheons and being able to network with other engineers and discuss problems and solutions. He also enjoys the educational aspect of SAABE and the information that vendors bring to the table.

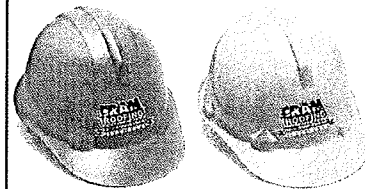
- **What would like to see SAABE focus on in the future?**

Steve would like to see SAABE continue to provide industry related information to building engineers through presentations, seminars, and publications. Keep up the activity and provide opportunities for engineers to stay involved.

- **Any personal plans for the future?**

To stay as up to date as possible on technological progress, take advantage of any educational opportunities, learn more efficient maintenance procedures, and excel in the engineering industry. ❖

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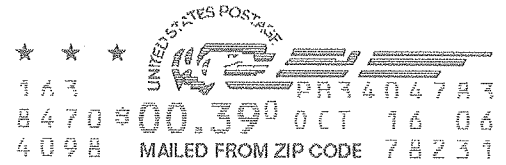
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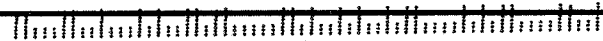
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SAABE TIMES
October Issue

Final Thought:

"I have always found that plans are useless, but planning is indispensable."—
 Dwight D. Eisenhower

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2006 Board of Directors

Bob Beal President	830-868-4749
Tom Lasater 1st Vice President	771-5824
Mike Halvorsen, CBE-M 2nd Vice President	979-8002
Kendal Langenberg Secretary	967-8766
JR Uresti Treasurer/SABOMA Representative	495-2195
Jock Tilghman, CBE-J Education Director	681-2494
Allen Mangrum Vendor Representative	412-1095
Elena Castillo Past President	822-8570
<hr/>	
Laura Bray Association Manager (laurabray@braycommunications.com)	408-1699

Membership Luncheon
Wednesday, October 18, 2006

Time: 11:30 a.m.

Location: Alamo Cafe on 281
Program to be Announced

Upcoming Program:
Wednesday, November 15
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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