



# SAABE TIMES

A Publication of the San Antonio Association of Building Engineers

July, 2000

## Mark Your Calendar —

### Electrical Preventive Maintenance

Wayne Katz with Nathan Alterman Electrical Co., Ltd., will explain how to reduce your insurance and utility costs as well as how to decrease electrical down-time. Wayne is the TEEG Service representative for Nathan Alterman Electrical Co. and has 22 years experience in the electrical construction industry in both supply and contracting.

### Year 2000 SAABE Membership Drive Prize Sponsorship

The success of our Year 2000 membership drive stems from motivation. If your company is interested in sponsoring a prize, or would like to contribute a portion of the first and second place prizes, valued respectively at \$500.00 and \$300.00, please contact one of the following people on the SAABE Membership Drive Committee:

- **Tim Young**, Munters Moisture Control  
Mobile: (210) 601-2563
- **David Webb**, Cram Roofing  
Mobile: (210) 286-3549
- **Perry Wornat**, Cite Corporation  
Mobile: (210) 559-5084
- **Mary Parker**, Five Star Electric Motors  
Mobile: (210) 240-3029

For a partial prize sponsorship, please make your check payable to the San Antonio Association of Building Engineers, referencing the "Membership Drive Prize Sponsorship", and mail to Lynn Forester at the membership office. All companies making donations will receive an honorable mention in our upcoming newsletter articles.

So far, our thanks goes out to **CRAM ROOFING** who has supported our organization with a donation of a \$100.00 gift certificate to Ruth's Chris Steakhouse.

## Education Corner

By Mike Lusk

**Update from Diana at I.E.C. – Journeyman's exam prep course:** Monday's (6-9 p.m.) July 31<sup>st</sup> – October 9<sup>th</sup>, 2000. Member cost is \$150.00 w/workbook. Non-members \$175.00. 30 hours of classroom instruction. City test date is October 16, 2000. Call Diana @ 736-4567.

**Comprehensive Five-day Training Program for Energy Managers.** The Association of Energy Engineers. Lake Tahoe, July 17-21; Atlantic City, NJ, Aug. 7-11; Minneapolis, MN, Oct. 9-13; Nashville, TN, Dec. 4-8. Members \$1250.00; Non-members \$1495.00. Call (770) 925-9633. If you need a copy of the brochure, please call Mike Lusk at 340-2533.

**"How to Supervise People"** Fred Pryor Seminars; San Antonio, July 18 and 19; one day seminar. \$179.00. 1-800-821-3919.

**"The Basics of Facilities Management"**, Keye Productivity Center; San Antonio, July 31. \$169.00. Call 1-800-821-3919.

**"How to Get Compliant With OSHA's Proposed Safety and Health Program Standards"**, Keye Productivity Center; Dallas, July 26-27; Houston, July 24-25. \$495.00. 1-800-821-3919.

**"Managing Construction Projects"**; Aug. 7-8 or Nov. 6-7, 2000. \$1095.00. **"Controlling Construction Costs"**; Aug. 9-11 or Nov. 8-10, 2000. \$1295.00 (Both classes conducted by the University of Wisconsin, Madison. Classes are located in Madison, WI. Get both courses for \$1895.00. 1-800-348-8964.)

**"Troubleshooting, Fixing and Upgrading PCs for Non-techies"**, San Antonio; Aug. 28-29, 2000. Comped. 1-800-258-7246.

**"Uniform Plumbing Code"**, NTT San Antonio; Aug. 16-17. \$695.00. 1-800-922-2820.

**Water Treatment Seminar**, CITE Corporation; Austin, TX; July 26, 2000. \$180.00. Call Perry Wornat at (210) 967-6777 for more information.

Again, with most of the above listings, I can fax you a copy of the brochure if you need more information. Just give me a call at 340-2533.

## C/T'S...Don't Have Summer Without It /Them!

It/they sit atop your building or off to one side removing thousands of BTUs per hour into the atmosphere with standing wind blown dirt, leaves, etc.; rain with much of the same; high temperatures; and are feed water high in pH – they also need our undivided attention and daily checkups. A cooling tower is similar in needs to a swimming pool in that the water needs to be in balance and regular cleaning is required.

Water in balance is keeping three major parameters in range: pH, TA, and CaH. The major component of these three is pH which is a measure of the degree of acidic status ( 0 ) or the degree of basic status of the water ( 14 ) , with 7 as neutral. As the pH moves toward 0, metals tend to corrode and fiberglass will blister. As it moves toward 14, scale forms and sanitation becomes a problem. With city feed water at a pH of 7.4 to 7.8, acid is added to the cold water basin to maintain pH in the range of 6.8 to 7.2 and to compensate for other factors such as dirt, pollen, mold, and leaves that also affect pH. As an example of pH shift, I checked our towers on Friday afternoon and recorded a 6.8 and 7.2, but by Monday morning one tower registered 9.4 due to a loose feed hose connection and loss of prime on the acid feed pump.

Total alkalinity is a measure of the water's ability to resist (buffer) changes in pH, with a range of 60 to 180 ppm reasonable. Low TA will result in pH bounce and high TA makes changing pH very difficult. CaH is calcium hardness and represents water's ability to keep calcium ions dissolved and in solution. Also affecting calcium in solution is water temperature. High temperatures tend to allow calcium to drop out of solution and form calcium carbonate — a white-gray type scale. TH, or total hardness, is a combination of about 66% calcium 33% magnesium. Another characteristic of water is TDS or the total amount of minerals dissolved in the water and when above 2000 ppm requires a drain and refill to refresh the tower.

Another factor in water chemistry is inhibitor addition to fight against corrosion and scale build-up and is measured in mmhos in the range of 1700 to 2000. All the other measurements are in ppm, or parts per million, which is about 1 pound of chemical in 120,000 gallons of water. The other aspect of the inhibitor electronic controller is blow-down or bleeding of water to maintain set points. All these ranges given so far and the blow-down rate (cycles)

are approximate and it is best always to consult with your tower's representative and the company handling your controllers and chemicals for your specifications.

Now that we have all these numbers and letters that should be measured and recorded at least monthly by your chemical rep, what does that mean to us? Without having knowledge of the status of our water we could be on the road to disaster and not know it! Measurement of pH and conductivity (inhibitor activity) should be recorded twice daily (AM and PM) since a correction of an 8 hour problem generally requires a smaller adjustment and keeps your water in balance without large swings. The weekends should be covered also to insure no problems due to Murphy's Law — and don't forget to check proper blow-down operation. Your chemical rep can supply you with the equipment for measurement and pool test kits can provide a degree of accuracy. Your attention to chemical balance can provide efficiency and longevity to your equipment.

The next leg of a solid program for tower care is mechanical and requires regular cleaning of the unit. The cold water basin, by design, will hold water and everything else the fans and wind will deposit: leaves, mold, dirt, bugs, etc. This layer of trash can effectively isolate that beautiful galvanized coating from your balanced water and allow electrolysis to begin changing beautiful to disfigured and destroy that coating. Another problem with debris is how it affects pH, since large quantities of debris with a pH of its own will tend to change the tower pH and use additional acid to return to its set range. Also, debris collecting in your tower will promote biological growth, along with corrosion and deposit formation. As you can tell, trash in the basin is up to no good and should be removed regularly. For those of you already performing this maintenance task you know how rapidly it builds up – high winds and heavy rain add to it quickly.

Another aspect of maintenance is the visual inspection of equipment: belt alignment and tension, drive shaft alignment, gearbox oil level, and bearing lubrication. If you are still using extended lines for lubrication, count the number of hand pumps for new grease to travel the length of the line, and you get an idea of the age of grease you are feeding the bearing. A zerk fitting is still the shortest distance between grease and bearing. Also remember with

*continued on page 3*

## Tio SAABE

continued from page 2

cooler weather and the cycling of equipment, motors require a run time of 10 or more minutes of running to dissipate startup heat—4 cycles/hour or at most 6 if possible. These suggestions concerning maintenance of your tower were submitted by some of the technicians who are happy to collect payment for repairs and replacement when these items are neglected.

The third and final leg of tower care to give stability to this tripod of knowledge and recommendations is about biological growth, which is in opposition to chemical balance. Chemical balance and a clean system will certainly restrict bacteria, but in no way will completely inhibit growth. Depend upon your chemical rep to test for and recommend treatment. Although we may not hear much about Legionella Disease, there are over 10,000 cases per year reported in the U. S. alone. The cooling tower evaporation process can aerosolize the organisms and individual cases have been traced to cooling towers. As you can see, our responsibility as building engineers extends not only to our tenants and owners, but also to those living around our buildings.

We would like to express our thanks to the following persons who have contributed to this article:

- Butch Montgomery with Midland Research Laboratories, Inc.
- Charles H. Mikclajczyk Jr. CBE with the Forum
- Ted Metcalf with Enviro-Tex

### Just for Laughs —

## Climbing the Stairs

Bill, Jim & Scott were at a convention together and were sharing a large suite on the top of a 75-story skyscraper.

After a long day of meetings, they were shocked to hear that the elevators in their hotel were broken & they would have to climb 75 flights of stairs to get to their room.

Bill said to Jim & Scott, "Let's break the monotony of this unpleasant task by concentrating on something interesting. I'll tell jokes for 25 flights, Jim can sing songs for the next 25 flights and Scott can tell sad stories for the rest of the way."

At the 26th floor, Bill stopped telling jokes and Jim began to sing. At the 51st floor Jim stopped singing and Scott began to tell sad stories.

"I will tell my saddest story first," he said. "I left the room key in the car!!!"

## SAABE Mixer

Join us for an informal get-together after work on Thursday, July 20th. We'll be meeting at Mama's on Nacogdoches Road, starting at 5:00 p.m. Hope to see you there!

## Building Tour

On Wednesday, August 9, 2000 at 5:00 p.m., we will have a tour of the Forum Building with Charles Mikolajczyk as our host. We will meet at the cooling tower prior to the start of the tour. The Forum Building Complex is located off IH-10 at Callaghan Road. See you all there!

## Building Engineer Needed

Growing Real Estate firm in San Antonio seeking experienced Building Engineer. Must have experience in HVAC, electrical, plumbing, irrigation and communicating with tenants as well as vendors. Please fax resume and salary requirements to: Koontz-McCombs Realty Services, Inc., Attn: Property Manager at (210) 826-9633.

## Heard It Through the Grapevine



- **Lone Star Fire & First Aid** is now located at 449 Culebra, San Antonio, Texas 78201. Their new phone number is (210) 731-8000.
- **Bruce Goodman** is now the building engineer at Cypress Tower.
- **Voss Lighting** has a new fax number: (210) 599-0497.

## Common Code Issues in Office Buildings!

Office buildings are often considered a basic type of occupancy when it comes to complying with various life safety codes, particularly the following egress issues:

### Egress from elevator lobbies and stairwells

The Life Safety Code (NFPA 101), requires that every elevator lobby in a building must have access to at least one exit by path of travel that does not require a key, tool, special knowledge, or special effort to operate. While this generally is not a problem, a tenant or leasing agent doesn't want to lose the rentable square footage necessary for an exit access corridor. Nor does the tenant want visitors who might get on the floor by elevator to have access to work areas.

One common solution is to provide a secure separation between the elevator lobby and the work areas. However, if this results in a locked exit from the elevator lobby, the landlord has not met the requirement for access to at least one exit without any impediments. A quick cure for this scenario is to provide electronically controlled devices to the doors which release upon fire alarm or are fail safe upon power failure.

Although existing buildings are exempted from this code, the Life Safety Code requires that each stairway door in a new building over four stories allow re-entry from the stairway to the interior of the building. The code does not allow the automatic release of all locked stairwell doors and re-entry on certain identified floors. As with the elevator lobbies, compliance with this requirement is generally more difficult on single tenant floors.

### Access to exits

The Life Safety Code also requires that exit corridors provide access to at least two exits that don't have to be reached by passing through any rooms other than a corridor, or spaces leading to a corridor. Compliance of this issue is generally found on multi tenant floors.

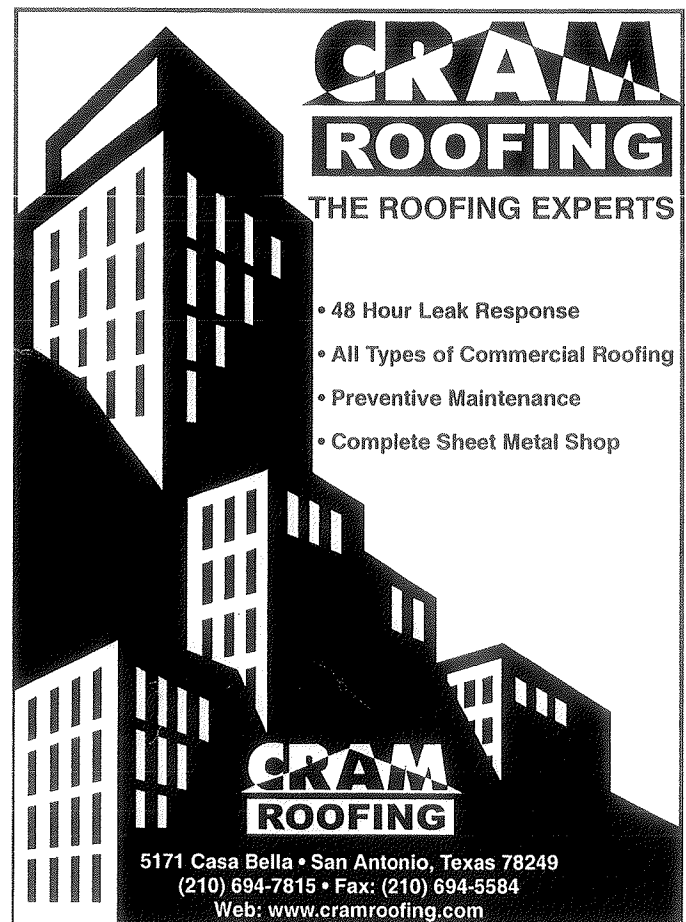
When a tenant leases a considerable amount of space on a floor, the space and exit access corridor are often found to be separated by a cross corridor wall and door. Once this is done, the corridor does not lead directly to at least two exits, unless there are more than two exits on the floor. However, there is an exception permitting the AHJ (Authority Having Jurisdiction), to accept the existing egress arrangements.

### After hour egress

While applying means of egress to an office building is generally easier than it is for other occupancies, designers and property managers make several common mistakes when it comes to securing public access doors after hours. The majority of the buildings in San Antonio meet the same requirement where they contain two stairways. Of these two stairways, one must discharge at or near an exit, the other must discharge directly to the outside. Many times, especially when a building has multiple level entrance/exits, the stairwell which empties into the lowest level or main lobby, does not lead to an exit which is electronically controlled by the fire alarm. Instead, it leads to exit doors which are key locked. Thus causing great confusion and probably loss of life in the event of a fire.

**Charlie's Law:** If at first you don't succeed, maybe skydiving is not for you!

*"Just a Maintenance Man"*



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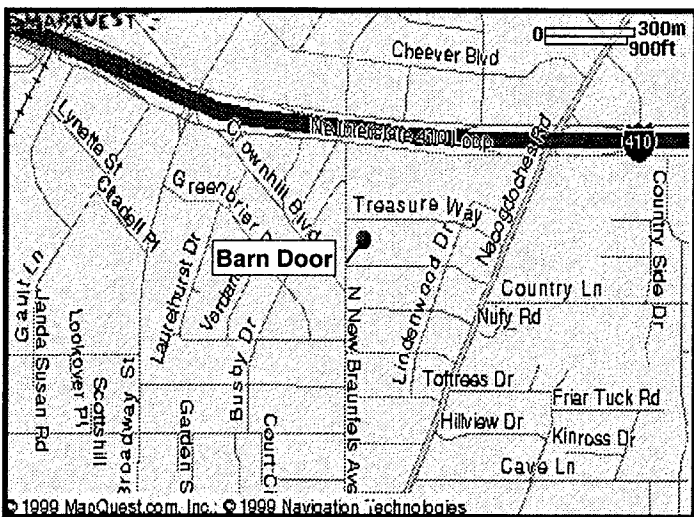
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# NEW Luncheon Location!

SAABE's monthly general membership luncheon meetings will now be held at the **Barn Door Restaurant**, 8400 N. New Braunfels Avenue.



## It Pays to Advertise!

Dimensions	1 Issue	3 Issues	1 Year
Full page (7.25" w x 9.5" h)	\$110.	\$280.	\$1,000.
Half page (7.25" w x 4.35" h)	60.	150.	575.
Half page (3.5" w x 9.5" h)	60.	150.	575.
Quarter page (3.5" w x 4.75" h)	30.	75.	280.
Business Card (3.5" w x 2" h)	20.	50.	190.

Send ad copy (camera-ready b/w or b/w velox) and payment to SAABE, PO Box 691861, San Antonio, TX 78269.

## Odds & Ends

Anyone desiring audio cards or parts from an Edwards 3800 fire alarm system, please call Elena at 255-6794.

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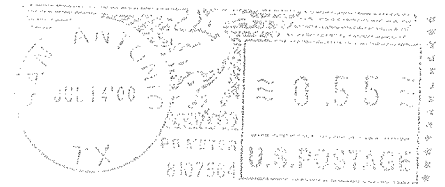
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**SAABE TIMES**  
**July Issue**

**Reminder —**

**The monthly General Membership Meetings  
are now held at the Barn Door Restaurant.**

**2000 Board of Directors**

Paul Thompson, SMA <i>President</i>	524-9285
Elena Castillo <i>1st Vice President</i>	341-0064
Tom Lasater <i>2nd Vice President</i>	828-9829
Bill Blackford <i>Secretary</i>	967-8766
VACANT <i>Treasurer</i>	
Mike Lusk <i>Education Director</i>	340-2533
Mike Alvarez <i>Vendor Representative</i>	824-9581

Lynn Forester (830) 981-5223  
*Association Coordinator*

**Membership Luncheon**  
**July 19, 2000**

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

**Location:** Barn Door Restaurant

**Topic:** How to reduce your  
insurance and utility costs

**Speaker:** Wayne Katz of Nathan Alterman Electric

**Sponsor:** Nathan Alterman Electric

**Upcoming Luncheon August 16:**

SAPD Bomb Squad

**Sponsor:** Amcon Controls

The SAABE Times is produced monthly for the San Antonio  
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