



# SAABE TIMES

A publication of the San Antonio Association of Building Engineers

September 2005

Mark Your Calendar—

## JOIN US FOR OUR SEPTEMBER LUNCHEON

The next General Membership Meeting of the San Antonio Association of Building Engineers is set for 11:30 am on Wednesday, September 21 at the Alamo Cafe on 281 (just north of Bitters). This month's speaker is Eddie Wilcut, a conservation planner for the San Antonio Water System (SAWS). Mr. Wilcut will tell you everything you need to know about new conservation regulations going into effect January 2006. He will also be available to answer your questions.

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, September 20. PLEASE RSVP so we can be sure to have enough meals on hand!

We hope to see you there! ❖

## From the Front Lines

by Charles Gilbert

*SAABE Member Charles Gilbert took a leave of absence from his position at Brandt Engineering and is now serving with a contractor (KBR) in Afghanistan. SAABE Times is happy to share his periodic progress reports. — ed.*

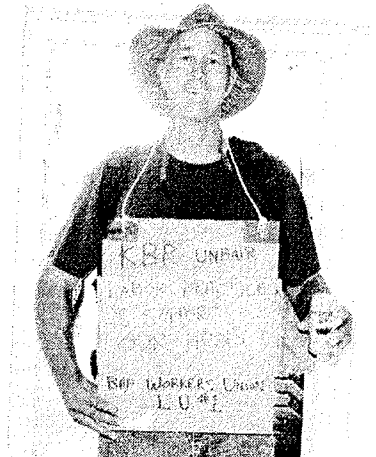
Greetings fellow engineers! I wanted to lighten up on this article a little bit and just do some FYI stuff. I haven't been able to get on the computer much lately because our base is getting crowded. The elections are coming up on September 18, and it's getting real interesting over here. We are being flooded with additional soldiers to support the election sites. Plus there have been problems in Uzbekistan at our main support base, K2. We also have had runway problems at all the bases and fighting in the East towards Pakistan has delayed fuel for our R&R flights. All of these things have contributed to the overcrowding. In addition to that if you factor in 110 degree heat and wind every day up to about 35–40 mph and blowing dust, it's not the best place to be.

The dust blows into our B-hut, which is a 16' by 32' plywood building that is sub-divided into eight sections for living quarters. My section that I sleep in is about 8' by 7'. And the dust gets every where! We do have an electrical outlet and A/C. The air conditioning keeps the hut about 95 during the day and about 80 or so at night. Since we have no indoor plumbing in our hut, we must shower and potty at various places around the camp, the closest being 40 yards away and the farthest being about 150 yards away.

We recently have experienced riots outside the gates as well as a four-man escape, which had us in a lock-down for about two days. The dining facility (DFAC) was closed after the escape so we had to eat MRE's (meals ready-to-eat, or "meals rejected by Ethiopians") for a few days. During the Amber Alert after the escape, we realized how much we depend on the locals to do a lot of work on the base. The work they do is mostly menial, and they do it for \$6 a day.

Most of us stay pretty busy spending your hard-earned tax dollars helping support the troops. This twelve hours a day, seven days a week has been hard to get used to, but it's getting easier. Now I get in bed about 10 p.m., I am up at 4:30 a.m., and it really doesn't bother me or anybody else too much. I have had two days off since May 4, and I really have enjoyed them. For about the last month or so, it's really been just the same old, same old.

This place makes you realize the things that are important and the things you need to let roll off your back. Over here there is very little pretense; we all dress the same and live in the same type quarters. None of us have nice clothes, cars or houses. I have developed close friendships in a matter of weeks. It has also made me value even more the friendships I left behind. ❖



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## A Message from the President

by Bob Beal

### Good Time at the Lake

I have to say I was a little worried about the picnic when we asked for a show of hands of those that were planning to attend. But as it turned out, it was a great time for all. A great deal of thanks goes out to the non-members who helped put icing on the cake. A big thanks goes to Billy Kotara who provided the awnings, tables, and the Texas flag grill. Billy, the "Charlie," and Mike Halvorsen spent the night preparing some of the best brisket and sausage I have ever eaten. In fact I took a big piece of brisket home with me and enjoyed it throughout the week. A lot of brisket, some sauce, a little mayo, some sweet onion, a little cheese, smashed between a toasted poor-boy bun. Do I need to say more? I think Billy was the master chef, but you know that Charlie and Mike put a few logs on the fire! Plus the side dishes were great. Also thanks to Audie Howel for bringing his high-speed rowboat. I really need to say thanks to the vendors that supplied money, food and door (field) prizes.

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I would like to also like to thank my girlfriend Shannon Adams for organizing the events for the kids. She spent a lot of her time during the week putting together the piñatas and buying the toys. In any event, if the kids do not have fun, neither do the parents. Also thanks to Kim Webb of Transwestern Commercial Services for helping out with door prizes.

The horseshoe tournament turned out to be a handful, but because of our engineer mentality, we turned it in to the best part of the picnic. Mike Halverson and Julie Koenning won 1<sup>st</sup> place, Shay Koenning and his son won 2<sup>nd</sup> place, and Alfred Medina and Ray won 3<sup>rd</sup>. I want to send out a special

thanks to the Koennings (including their son) because Shay donated his \$150 2<sup>nd</sup> place horseshoe prize back in to the pot. He wanted an engineer to have it, so we raffled it back to an engineer. Door prize winners were Zach Turov, Jeff Turov, Dylan Medina, Isaac Marin, Joe Mungia, Charlene Mikolajczyk, Charles Mikolajczyk III, Mike Halvorsen, David Webb, and Rachele Heedum.

I learned three things from all this. First is that August is too hot to have a picnic, and second, if you're not sure what to do for the kids, just buy WATER BALLOONS. At first the kids were a little shy with each other. Then we gave them the water balloons, and they were off and running, never to look back. I think the girls had the most fun with the balloons. We also had fun with the water balloon launcher, just in case we needed to take down some enemy aircraft or blast party crashers. This thing will send a water balloon to the moon. So you know we engineers had to test it out before we could release it to the kids. My third lesson was this mathematical equation:  $BBQ / BEER * FIRE EXTINGUISHER = \text{Charlie Mikolajczyk}$ . I received this email from Charlie:

(Continued on page 4)

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**Tech Talk #97: Cooling Tower/Water Treatment 101**

by The Charlie

*Everything you wanted to know but never asked! Part 2*

**DENITRIFYING ORGANISMS** convert nitrite or nitrate back to ammonia, are common in closed loop systems, and are anaerobic.

**DISPERSANT** is a chemical that causes particulates in a water system to remain in or be placed into suspension (makes it easier to get the particulates out during blowdown).

**DRIFT** is water lost from a cooling tower as liquid droplets entrained in the exhaust air. It is independent of water lost by evaporation. Units may be in lbs./hr. or percentage of circulating water flow. Drift eliminators control this loss from the tower (not a bad thing).

**EVAPORATION LOSS** is water evaporated from the circulating water into the atmosphere by the cooling process (also effected by humidity)

**EVAPORATION RATE** is the rate at which a liquid turns into gas and leaves a system (also decreases as humidity increases).

**FERROBACILLUS** is a type of iron-reducing bacteria (not a good thing to have).

**FLOCCULATION** is the process of agglomerating coagulated particles into settleable flocs, usually of a gelatinous nature (makes particles stick together and fall to the bottom so you can vacuum them out).

**GALVANIC ATTACK** is corrosion behavior caused by the current generated when one metal type is in contact with a different metal type (use die-electric unions and don't worry).

**HARDNESS (calcium)** is the calcium compounds dissolved in water, usually expressed as calcium carbonate (not a good thing).

**HARDNESS (carbonate/temporary)** is the calcium and magnesium carbonate and bicarbonate dissolved in water, expressed as calcium carbonate. Other metallic cations such as ferrous iron, barium, zinc and manganous ions are also included.

**HARDNESS (magnesium)** is magnesium compounds dissolved in water, expressed as calcium carbonate.

**HARDNESS (non-carbonate/permanent)** is the difference between the total hardness and the total alkalinity of a water sample.

**HARDNESS (total)** is the sum of the calcium and the magnesium hardness. Also the sum of the permanent hardness and temporary hardness. The U.S. Geological Survey hardness criteria for potable water are: soft water 0-60 ppm, moderately hard water 61-120 ppm, hard water 121-180 ppm, very hard water >180 ppm (soft water is a good thing when to have belly flopping in a pool)!

**HEAT EXCHANGER** is a device for transferring heat from one substance to another. Heat transfer can be by direct

contact, as in a cooling tower, or indirect, as in a shell and tube condenser. Can also be the tube or fin tube bundles in a wet/dry tower.

**HEAT LOAD** is heat removed from the circulating water within the tower. It may be calculated from the range and the circulating water flow.

**IRON BACTERIA** is oxidative bacteria that cause taste, staining, and odor problems in water. The precipitation of iron by the bacteria can build up in piping and heat exchangers to restrict water flow. Although they are not a direct cause of corrosion, differential aeration cells will form under deposits and localized corrosion will appear (don't taste the condenser water)!

**ISOTHIAZOLONE** is a biocide that reacts with cytoplasm thiol groups. Targets aerobic and anaerobic bacteria, fungi, and algae. This chemical is also a sensitizer, which can cause irreversible tissue damage to humans)

**GLUTARALDEHYDE** is another biocide, which targets both types of bacteria, but the speed of kill is accelerated over Isothiazolone. Great care should also be given when handling this substance as well.

**MAKEUP** is the water added to the circulating water system to replace water lost from the system by evaporation, drift, blowdown, and leakage.

**NONOXIDIZING BIOCIDES** is a biocide whose effectiveness depends on some property other than its ability to oxidize organic material (poisons).

**pH** is the logarithm of the reciprocal of the hydrogen ion concentration. Water with a pH of 7 is neutral at room temperature. A pH greater than 7 indicates alkaline water. A pH less than 7 indicates acidic water.

**PHOTOSYNTHESIS** is the process by which plants use sunlight to produce energy by consuming CO<sub>2</sub> and releasing O<sub>2</sub> (wow)!

**SOLUBILITY** is the ability of one material (the solute) to dissolve in another (the solvent).

**SULFATE REDUCING BACTERIA** is group of anaerobic bacteria capable of reducing sulfates to sulfides, especially hydrogen sulfide, a very corrosive gas. (bad thing to have).

**SURFACTANT** is any molecule that modifies the interfacial tension of a liquid and the surface it contacts (make it stick to whatever)

**SUSPENDED SOLIDS** are insoluble particles suspended in water.

**TOTAL DISSOLVED SOLIDS** is the sum of the organic and inorganic materials dissolved in water.

*(Continued on page 5)*



## 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) ❖

## Message from the President (con'd from p. 2)

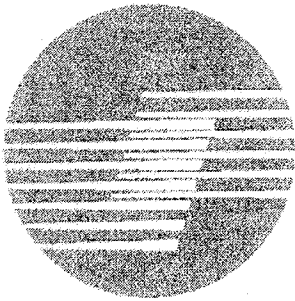
Dear Bob: ;-)

*In regards to the 1st Annual SAABE Picnic, I cannot think of another time/excursion this year when I have had so much fun...and trust me, I've been around! We had a great time and I'm sure all whom attended had a great time as well. Also, please extend our gratitude to those who came out Friday to help set-up, or stayed late Saturday to help tear down, and to those who did both!*

*My family and I had a great time and we are already looking forward to next year's event. – CM*

### Hurricane Katrina

By now so much has been said about the tragedy of hurricane Katrina that any comment I may make will probably be just gazed over. I will say this—Mother Nature has no sense of race or politics and has no conscience. So help those folks if you can, and pray for them any time you can. See you at the luncheon. ❖



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## SAABE Training Seminar

### Sloan Valves

Sponsored by SAABE and Offered by Stephen and Stephenson Manufacturing

- Thursday, September 29 in the first-floor café at One International Center (Jones Maltsberger and Loop 410).
- **FREE** for SAABE members.
- 11:00am–1:00pm, **lunch included**.
- RSVP required (participation limited to 20).
- Vendors: Contact Vendor Rep Allen Mangrum (contact info on back page) if you'd like to sponsor/host a seminar.

RSVP to Laura Bray at 408-1699. ❖

## Tech Talk (con'd from p. 3)

TUBERCULATION is a localized attack typified by the formation of inverted pliable conical structures. In water systems, tuberculation is more commonly associated with localized corrosion of iron and the conical structures are predominately made up of several oxidation states of iron (Fe<sub>2</sub>O<sub>3</sub>, Fe<sub>3</sub>O<sub>4</sub>, etc.). Pitting is normal result.

**Next Month:** Refrigeration/Air Conditioning (The Basics)

**CHARLIE'S LAW:** A clear conscience is usually the sign of a bad memory.

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

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## CBE Program Review

The SAABE Board of Directors conducted its semi-annual review of the Certified Building Engineer (CBE) program at its June 2005 meeting. The board is seeking ideas on how to encourage engineers to apply for the CBE program. The board is also working on a scholarship program whereby members can apply for funding to take relevant classes.

Before the next review, the board will work on a testing program so on-the-job training and knowledge can be evaluated. Input of current CBE-Ms will be sought on the contents of the test. The board is also considering changing the experience requirements for the apprentice-level CBE designation.

A subcommittee will work on these ideas and present ideas at the next review. Any members who have comments on any of these issues or the CBE program in general should contact SAABE President Bob Beal or Education Director Jock Tilghman.

### List of Applicants and Certifications Received (since June 2004):

- Art Martinez, certification under review
- Bruno Vera, CBE-J (USAA Realty)
- Andy Vivian, CBE-J (USAA Realty)
- Pat Tabor, CBE-J (Triple Net Properties)
- Jock Tilghman, Sr., CBE-J (Transwestern)
- Doug Graves, CBE-M (Hines Interests)
- Mark Rybczynski, CBE-J (Cambridge Healthcare Management)
- Justin "Rhondo" Jauer, CBE-M (Transwestern)

### Current List of CBEs:

- Mike Halvorsen, CBE-M (Sanchez Investment Properties)
- Charles Mikolajczyk, CBE-M (Endeavor Real Estate)
- Robert Andrews, Sr., CBE-M (REOC Partners)
- Phil Anderson, CBE (Valero North Campus)
- Jerry Lovell, CBE-J (Trammell Crow)
- Tom Parrish, CBE-J (South Texas Blood and Tissue Center) ♦

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**SAABE TIMES  
 September Issue**

**Final Thought:**

"Pick battles big enough to matter, small enough to win." — Jonathan Kozol

**2005 Board of Directors**

Bob Beal President	377-2626
Tom Lasater 1st Vice President	403-8241
Mike Halvorsen 2nd Vice President	979-8002
<to be voted on at Sep. meeting> Secretary	967-8766
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
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Laura Bray Association Manager (laurabray@braycommunications.com)	408-1699

**Membership Luncheon  
 September 21, 2005**

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

**Location: Alamo Cafe on 281  
 Eddie Wilcut, San Antonio Water System  
 New 2006 Conservation Regulations**

**Upcoming Programs:  
 Wednesday, October 19  
 Program to be Announced**

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