



# SAABE TIMES

A publication of the San Antonio Association of Building Engineers

July 2005

Mark Your Calendar—

## JOIN US FOR OUR JULY LUNCHEON

The next General Membership Meeting of the San Antonio Association of Building Engineers is set for 11:30 am on Wednesday, July 20. Check out the SAABE website ([www.saabe.org](http://www.saabe.org)) for program details.

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, July 19. 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

*Many of you know that honorary 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. He has been sending periodic progress reports, which SAABE Times would like to share with you. — ed.*

For the first installment of my humble contribution to *SAABE Times*, I'd like to start off with some thank you's. Thank you to all who have written, for whatever reason and to say whatever you've said. Any word from home is a good word and makes for a big smile and a better day. Thanks for making me an "Honorary Building Engineer." I'll try to find a building around here to straighten up; I would really like to be in the running for BEOTY 2006. By the way, does anyone have any tips on patching machine gun holes in walls?

One of the things that has struck me the most (thankfully it's not been mortar or machine gun rounds) is how, at some point in the future, when the history of this war is written, there will be a few chapters dedicated to the differences between this war and all others that have come before it in modern times.

One difference may be that civilian contractors are taking the place of war fighters, or the folks we call "Brown Suiters," to run the day-to-day logistics of fighting the War on Terror. Those of you reading this may not fully understand what KBR and about 20 to 30 other contractors do over here. Here is a sample from just one base in Afghanistan: Contractors run the DFAC (dining facility) to the tune of 50,000+ meals a day. Those of you in the service in years past—when did you ever get "3 hots a day?" And that's 3 hots whether you're in the rear with the gear or at a front line FOB (forward operating base). With that many people on eating base, you can only imagine the loads of clothes we do in the laundry facility. We repair military vehicles, HUMVEES, Trucks, RTCHs (rough terrain container haulers); basically anything that shoots or gets shot at. We provide base housing and all maintenance. Our travel office runs a chartered air service for moving people in and out for MOB, De-MOB and R&R at about 300 people a week. We have air conditioning on all base housing as well as at most of the FOBs. Imagine our troops having A/C everywhere but on patrol! Since we don't have a sewer system or "city" water on base, we provide all clear water, gray water, blue water, and black water. There is a contractor that provides around 10 to 15 Megawatts of electricity for the entire base. (We use almost 350,000 gallons of JP8 or diesel fuel EVERY day!) We even have our own EOD/UXO team (explosive ordinance disposal/unexploded ordinance). KBR runs all the MWR facilities (morale, welfare and recreation) to include phones, internet, weight lifting, karaoke, movies, life guards (Iraq only!!!) and many other activities to keep up troop morale. There are other companies on base and in the TO (theater of operations) that do things like perform armoring of HUMVEES and trucks. A company from San Antonio builds the dome shaped "clamshells" that house some of the maintenance and repair shops required to keep the military vehicles rolling and the troops fighting. And last but not least, when a convoy rolls out, there are nearly as many unarmed, civilian drivers as there are soldiers. Think of it this way: civilian contractors are providing everything but war fighters and aviation

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(Continued on page 4)

## A Message from the President

by Bob Beal

### SAABE BBQ Cook-Off

As we promised you a few months ago, we finally have a solid date for our summer get-together—Saturday, August 20 at Calveras Lake. Maps will be available. Bring the wife and the kids if you like. We would like to ask some of our vendor members to help out with a food donation or anything that will make the event a success. Also we plan to have a BBQ cook off with three categories—beef, chicken, and pork. You can sign up for one, two, or all three choices. We will have 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place winners for all categories. There will be some rules, and we will have all the details soon so you will have plenty of time to season your grill. There is one rule I can tell you right now—no pre-cooked food. It has to be cooked at the event. SAABE will provide sodas and some munchies. (but no alcoholic beverages). SAABE (along with vendor donations) will also provide food after we judge the BBQ later in the day. We would also like to ask any member that may have a boat to bring it out. There are some pretty big fish in that lake. Just ask “the Charlie.”

### Budget Time

Budgets are once again approaching us. Like most we are usually busy doing other things throughout the year. We forget to keep a list of things we would like to see happen at our property next year. It's sometimes easier to wait for the memo from your boss but much harder to remember all the little things you told yourself to write down throughout the year. Remember budgets are not just for spending but also to help you find trends for the year. If at the end of the year you are over budget on utilities, you are probably going to be asked why. If your spending is way out of control, it is also a tool for your asset manager to fire you or your management company. I try and teach my assistants that it's easier to explain a negative variance due to equipment failure then it is explaining the purchase of 55 gallons of degreaser or 10 cases of coil cleaner on that same account. For example I have chronic calcium build-up in the piping and the risers for my urinals and several drains that seem to be a problem. After all, my building is 20+ years old. If my assistant and I cannot fix the problem, then we call in one of my plumbers to snake out the drains. If you have a stopped-up urinal in a class A building, it needs to be fixed right away. My owner does not have a problem with me budgeting \$2,000 for drain maintenance. However, if I spend \$800 on a drain snake, \$1,000 on drain maintenance chemicals, and still have to have the plumber out five times at \$300 a pop, I may have to explain. Failures usually do not follow a budget; in fact they usually happen just after you spend money on stuff you really do not need. Another good example is that my building is being marketed, and my owner gave me the go-ahead to redo all my mechanical areas (including air handlers rooms, chiller rooms, and damaged insulation). So I spent a few thousand dollars to make it happen. If my building is sold before

budgets are to be explained and re-forecasted, it is going to be a little harder explaining to the new owners why I was so far over on HVAC. What do I say? “Well, the old owner told me it was ok” or do I say “ask my manager”? It's best to keep track of all the expenses. Take some before and after pictures and keep them handy. Your boss will be very thankful. It goes without saying that we are ultimately responsible for the care of our buildings, so budget smart and spend wisely. If you ever have to explain your expenditures, you better be ready, because the buck stops with you and I, my friends.

### Update on Charles Gilbert from Afghanistan

As you know, honorary SAABE member Charles Gilbert is with a contractor in Afghanistan, performing chiller work. When he can, he will send us updates. Make sure to read his column on page 1. If you'd like to get in touch with him, let Laura know, and she'll provide you his email address. ❖

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## Tech Talk #96: Cooling Tower/Water Treatment 101

by The Charlie

*Everything you wanted to know but never asked!*

Please note that the following articles are not meant to be a substitute for any cooling water treatment program, This was developed to broaden your level of expertise in the playing field.

**ACID** is any substance that donates a proton (H+) when dissolved in a solution. In water treatment, it usually means circulating water with a pH of less than 7.0. Sulfuric acid is the most common acid used to control cooling water pH.

**AERATION** is the blowing or mixing of air through water to sweep out other dissolved gases and to equilibrate the water with primarily nitrogen, oxygen and carbon dioxide (strong aeration is applied when a system is over chlorinated).

**AEROBE** is an organism/bacteria that grows only in the presence of free (molecular) oxygen (they require oxygen for growth).

- **AEROBIC (Capsulated)** causes severe bacterial slimes.
- **AEROBIC (Spore forming)** are bacterial slimes and the spores produced are difficult to destroy.
- **AEROBIC SULFUR:** the sulfur or sulfides are oxidized to sulfuric acid.

**ALGAE** are a low form of plant life containing chlorophyll that generally requires sunlight and air for existence. Many are microscopic but under favorable conditions can grow sufficiently dense to plug cooling tower distributors on the decks and to interfere with water splashing in the fill. Large masses often slough off the tower and plug heat exchangers or deposit in piping.

**ALGAECIDE** is a toxic material that will kill algae. Some of the more commonly used algaecides are chlorine, copper sulfate and phenolic compounds (bad stuff, always use PPE).

**ALKALINITY** is an expression of the total basic anions (hydroxyl groups) that is present in a solution. It also represents, particularly in water analysis, the bicarbonate, carbonate, hydroxyl and occasionally the borate, silicate, and phosphate salts which will react with water to produce acid neutralizable anions (similar to alkaline).

**AMMONIA** is a water-soluble, colorless, pungent gas with the formula NH<sub>3</sub>. Can also be found in cooling water due to the nitrogen cycle as a viable biomass when nitrite or nitrate and are in contact with denitrifying organisms.

**AMMONIUM** is a positive ion with the formula NH<sub>4</sub><sup>+</sup> that forms when ammonia dissolves in water. It adds non-natural alkalinity to the water.

**ANAROBIC (SO<sub>4</sub> Reducing)** grows under aerobic slime causing corrosion. They also reduce sulfates to a formation of hydrogen sulfide.

**ANEROBE (strict)** is an organism that grows only in the absence of free oxygen (grows without oxygen).

**ANEROBE (facultative)** is an organism that can grow under either aerobic or anaerobic conditions.

**ANODE** is a positively charged electrode that, during electrolysis, attracts anions (sacrificial metal).

**ANODIC AREA** is the area on a metal surface where electrons are given up and metal dissolves (corrosion).

**AUTOTROPHIC** is an organism that is capable of producing its own food through the use of chlorophyll and light.

**BACTERIA** are unicellular microorganisms, which reproduce by fission or spores, identified by their shapes: coccus, round; bacillus, rod shaped; and spirillum, curved.

**BICARBONATE ALKALINITY** is the presence of ions resulting from the hydrolysis of carbonates when these salts react with water. A strong base and a weak acid are produced and the solution is alkaline. Its formula is HCO<sub>3</sub><sup>-</sup>, but its concentration is usually denoted as ppm as CaCO<sub>3</sub>.

**BIOCIDE** is a chemical that is designed to control the population of troublesome microbes by killing them (some biocides cause irreversible tissue damage to humans, always wear your PPE).

**BIODISPERSANT** improves the penetration of biocide into slime and helps dislodge microbial from surfaces. Moderate to severe foaming will occur if over fed. A couple of squirts of WD-40 into the basin water will knock down the foam.

**BLOWDOWN** is the discharging of water from the system to control concentration of impurities in the circulating water (draining the basin to lower the amount of total dissolved solids).

**CHLORINATION** is adding chlorine or a chlorine derivative to the water to prevent the growth of various organisms that cause biofouling.

**CHLORINATION (De-chlorination)** is the act of removing chlorine from water, usually via a reducing agent or strong aeration (usually used when over chlorinated)!

**CHLORINE** is a poisonous yellow gas with chemical symbol Cl<sub>2</sub> used for water treatment. It is soluble in water but can be removed by reducing aeration and reaction with sunlight. Is also an oxidizing biocide.

**CHLORINE DIOXIDE** is a compound with the symbol ClO<sub>2</sub>, used mainly for bleaching wood pulp for paper. It is also used as a disinfectant in cooling towers.

**CHLORINE (free)** is the total amount of hypochlorous ion and hypochlorous acid in the system (one of the more common types when testing for chlorine in a system).

**CHLORINE (residual)** is the amount of available chlorine present in water at any given time subsequent to the addition of chlorine.

(Continued on page 5)

## Get Ready for the 2005 SAABE Membership Directory!

The new SAABE Membership Directory will be published this summer. 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

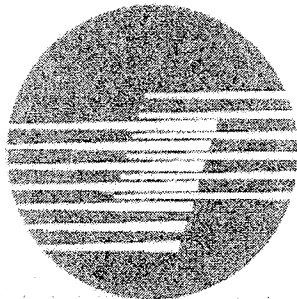
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## From The Front Lines (con'd from p. 1)

mechanics for a town with a population of about 15,000 people.

Not a lot of attention is paid to the civilians that fight the war, but we're here, and if it was Vietnam or Korea or WWII, those of us wearing KBR hats and badges would instead be wearing BDUs and carrying weapons. I suspect history will judge if this was a successful experiment or not. There are a lot of problems doing it this way, but I know one thing for sure. All the troops say KBR serves a darn good meal!!! And one thing that hasn't changed is that old saying "An Army runs on its stomach!" ❖



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## Vendors Wanted to Offer Training Sessions

SAABE is looking for vendors to offer lunchtime classes or seminars on topics of interest to building engineers. Our goal is to have a supplemental class on the last Thursday of every month (except November and December). Please contact Vendor Rep Allen Mangrum (824-7683) if you'd like to offer a training session to SAABE members. ❖

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

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

**COMBINED CHLORINE (new)** is the amount of chloramines or chloro-organic compounds present in water.

**CORROSION** means to be dissolved away, usually by oxidation or acidification. This usually refers to metal loss in cooling systems, often recognized by the local reaction of the dissolved metal with oxygen, carbon dioxide, acids or galvanic action. May result in general (widespread) or pitting loss of the metal (not a good thing to have).

**CORROSION COUPON** is a small piece of metal that is inserted into a circulating system that can be analyzed to find the corrosive nature of the system's water (can not be used as a discount for corrosion repairs).

**CORROSION INHIBITOR** is a chemical used in a system to prevent corrosion.

**CYCLES OF CONCENTRATION** compares the dissolved solids in makeup water with solids concentrated through evaporation in the circulating water. Since chlorides are soluble in water, for example, the cycles of concentration are equal to the ratio of chlorides in circulating water to chlorides in makeup water (measurement of micromhos in the tower water divided by the amount of micromhos in the city water also works).

**Next Month:** Dispersant to Tuberculation

**CHARLIE'S LAW:** An unbreakable toy is useful in breaking other toys!

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## Welcome New Members

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(210) 637-7044  
[skoenning@southprorestoration.com](mailto:skoenning@southprorestoration.com)

### Harvey Hoeschler

Joe W. Fly Co., Inc.  
110 Quentin Roosevelt, Ste 57  
San Antonio, TX 78226  
(210) 946-1688  
[harvey@joe-flyco.com](mailto:harvey@joe-flyco.com)

### Michael McBride

Griffin Partners  
10101 Reunion Place, Ste 170  
San Antonio, TX 78216  
(210) 377-0996  
[mmcbride@griffinpartners.com](mailto:mmcbride@griffinpartners.com)

### New Contact Info

Tim Young  
Blackmon Mooring Steamatic  
4808 Perrin Creek  
San Antonio, TX 78217  
(210) 342-4441  
[tyoung2@bmsmanagement.com](mailto:tyoung2@bmsmanagement.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. ❖

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|--|---|
| <h2 style="margin: 0;">SAABE TIMES</h2> <h3 style="margin: 0;">July Issue</h3> | <p><b><i>Final Thought:</i></b></p> <p><i>"They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."</i> — Benjamin Franklin</p> |
|--|---|

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| Laura Bray<br>Association Manager<br>(laurabray@braycommunications.com) | 408-1699 |

**Membership Luncheon**  
**July 20, 2005**  
**Time: 11:30 a.m.**  
**Location: Alamo Cafe on 281**  
**Program to be announced**

**Upcoming Programs:**  
**Wednesday, August 17**  
**"Protect the Building Asset"**  
**Andy Kitchens, Hines Interests**

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](mailto:inkspotink@sbcglobal.net)