SAABE TIMES

A Publication of the San Antonio Association of Building Engineers *September, 2001*

Mark Your Calendar —

SimplexGrinnell

Vince Baker, Inspections Manager, and Rick McGarr, Service Sales Representative of SimplexGrinnell will be the featured speakers at our September luncheon. They will discuss test and inspection codes, central station monitoring, portable extinguishers and new low toxicity products.

Grinnell Fire Protection and Simplex Time Recorder have been merged into SimplexGrinnell. Each company was over 100 years old when purchased by Tyco International and a leader in their own individual fields. Simplex was dedicated to fire alarm and central station monitoring, while Grinnell's focus was sprinkler alarm and portable extinguishers. The new company's goal is to merge all services together under one agreement for convenience to the customer.

Luncheon Sponsorships By Associate Members

If you'd like to sponsor a luncheon please let Mike Alvarez know at 210-495-2600. Sponsors can either 1) present their own program that is informational on their field of expertise but not a sales pitch for their company, or 2) sponsor an educational program to be presented by a municipal entity, etc. Cost of sponsoring a luncheon is $500. There are several months still available so call Mike to schedule yours

Education Corner

by Kenny Aguilar

Classes being offered:

Refrigeration and Air Conditioning: October 30-November 1, San Antonio, TX; NTT, 800-922-2820, Cost: $1,095.00 per person.

Boilers—An Operator's Workshop: October 19-18, San Antonio, TX; NTT, 800-922-2820, Cost: $1,095.00 per person.

McQuay Training Courses:

Screw Compressor Chiller Maintenance and Operation: Stauton, VA. October 9-12. Cost $1,100.

Centrifugal Chiller Maintenance and Operation: Stauton, VA. October 9-12. Cost $1,100.

For more information contact Linda Custer at McQuay International in Stauton at P.O. Box 2510, Stauton, VA 24402-2510. Telephone 540-248-9646, Fax 540-248-9210, or email at linda.custer@mcquay.com.

Amcon Controls Inc. 2 day Boiler/Burner Training: Hilton San Antonio Airport, November 5th and 6th, 2001. 8am to 5pm. Presentation is designed around Honeywell Flame Safeguard (FSG) Controls. Cost of course is $350.00 per person and class size is limited to 20 people. Cost includes all workbooks, textbooks, continental breakfast and lunch. To register call: 210-349-6161 or fax 210-341-0695, email sales@amcon.net.

SAABE Shares

Our association has once again given back to the community in the form of a school donation. At our August luncheon, we were pleased to present Sam Rayburn Middle School representatives with a check for $1,000.00. The funds will be used for students in need, for need supplies and uniforms as well as incentives for successful school attendance and performance.

We will also conduct a clothing drive for the school's students at our October luncheon. Stay tuned for more details on how we can help these kids at such a critical point in their lives.

A Message from the President

by Elena C. Castillo

Heat Stress: The Silent Hazard

Just last month, several sports-related deaths occurred due to heat.

- Minnesota Vikings tackle Korey Stringer died of heat stroke following a practice session in a stifling heat wave.
- Northwestern University safety Rashidi Wheeler died following an asthma attack during his practice drill.
- The University of Florida's Eraste Autin also died after suffering from a heat stroke.
- Luling High School's Steven Taylor, 15 years old, died after he returned home from a light morning practice.
- And then, not even 30 hours later, Lamar High School running back Leonard Carter, 14 years old, collapsed and died during a morning scrimmage.

These are only a few that have gained publicity. Others have been low-key, as they have been residents, elderly and children, animals, etc. However, according to the Bureau of Labor Statistics, in 1998, thirty-four workers died of heat-related illnesses. Five hundred and eighty-one more employees missed 3 to 5 days of work because of the effects of heat in the workplace. OSHA research has found that increased body temperature and physical discomfort results in irritability, anger and other emotional states, which sometimes cause workers to overlook safety procedures or divert attention from hazardous tasks.

If a person's body temperature rises above normal, he will suffer a series of disorders from heat stress. He will develop heat cramps, then heat exhaustion, and very possibly, heat stroke. Heat stress characteristically begins with muscle cramping in the extremities or the abdomen. Heat exhaustion is next, which causes headaches, tiredness, vomiting and a rapid pulse. Lastly, if the body temperature rises to 105 degrees Fahrenheit, the body faces a medical emergency and begins to shut down. You can recognize this extreme condition by the onset of the central nervous system symptoms, which include confusion, dizziness and/or the loss of consciousness. The skin will be hot and dry to the touch. It is these symptoms that can lead to heat stroke.

When the distressed employee/worker/athlete begins to show signs of overexposure, he or she should be removed from the work area on a temporary basis. Cool him down by moving into a cooler environment, remove clothing when possible, and refresh the body by drinking fluids containing vital electrolytes, such as sodium, potassium, calcium and chloride.

Heat cramps and heat exhaustion, though serious, are not always immediately dangerous to life and health. However, once heat stroke sets in, the human body faces a life-threatening situation, so the response time to properly administer emergency assistance is only three to four minutes.

To reduce the risk of a person's exposure to extreme temperature, a proper hydration program should be established. Employers must provide a safe working environment. Since heat stress may be caused by the job task, employers must reduce the associated risks and ensure that the proper medical response is available. Employees should also be trained in basic first aid.

Look for these signs of heat stress in employees, workers, athletes, etc.:

- Cramping with the extremities or the abdomen
- Headaches
- Fatigue
- Vomiting
- Rapid pulse
- Confusion
- Dizziness
- Loss of consciousness
- Skin that is hot and dry to the touch

If this happens to you or a co-worker, it is vital to be able to recognize the symptoms and know what to do when confronted with a heat-related emergency. As in all emergencies, being properly informed saves lives.

Source: June 2001 issue of ***Construction & Engineering Safety***.

A Nation Mourns

Tuesday, September 11, 2001 will be remembered as one of the darkest days in America's — if not the world's — history. To all of those people directly affected by these terrorist attacks, the San Antonio Association of Building Engineers extends its heartfelt sympathies.

Where to Find Information About the Attacks

If you're tired of watching television reports where chirpy news hounds ask soot-covered survivors "What was it like?" — as if they were covering a movie premiere — then turn to the web for information. Yahoo's Full Coverage provides dozens of links to major news sources covering this story, as well as information on relief efforts, and emergency contact numbers for those who are concerned about loved ones at the scene.

Useful websites:

Yahoo News — tp://dailynews.yahoo.com/fc/US/Terrorism

ABC News — http://www.abcnews.com

CNN — http://www.cnn.com

MSNBC — http://www.msnbc.com

What You Can Do to Help

One of the most important things you can do is to give blood. Call your local hospital or the American Red Cross at 1-800-GIVELIFE to get details about when and where you can donate blood. Medical personnel who wish to donate their services should contact their local American Red Cross office. Anyone can access the Red Cross website for information, or to make a donation of money.

Building Engineer of the Year

As this year races along, it's time to be thinking about whom we respect and admire as examples of model building engineers. A building may be small or rise high in the downtown sky, but the responsibly is the same — operate the property safely, efficiently, and intelligently. Nominations will be taken next month, along with your statement as to why your individual choice should be considered for this award.

Below is a list of areas that will be considered (if applicable to your building) by the Selection Committee to determine which of the nominees will be the next Building Engineer of the Year (BEOTY). Each nominee will be considered on an individual basis and only those items that apply to their property will be evaluated. This list certainly indicates the vast areas of responsibility we have and the dedication to our job it requires to be known as a Building Engineer.

I. Preventive Maintenance

A. Records and Procedures: Fire pump, emergency generator, sprinkler system tests, fire control and alarm tests, fire drill records, elevator fire operations,

B. Mechanical and Physical Facilities, air handler units, cooling towers, chillers, boilers, pumps, standby generators, electrical systems, roof, fire pump and sprinklers, lawn sprinklers, lighting (indoor and outdoor)

C. Outside Air and Toilet Exhaust

D. Critical Parts Inventory

II. Inspection of Mechanical and Physical Facilities: sprinkler system and fire pump, mechanical rooms, air handler units, cooling towers, chillers, boilers, pump, standby generators, electrical systems, roof

III. Water Treatment: in-house records, vendor records, corrosion and scale control, micro-bio control

IV. Environmental/Safety: indoor air quality programs, refrigerant management programs, hazard communications project, underground

August Luncheon Summary

A special thank you goes out to Tim Young of Munters Moisture Protection for a great presentation at the August luncheon. Tim treated us to a video documenting the Houston flood, which included footage of the disaster and the widespread cleanup process after the rain finally stopped. It was amazing to see the magnitude of the devastation that brought a large city like Houston to a standstill for days. Again, thank you, Tim, for your sponsorship of this meeting and continuing support of SAABE. Another feature of our August luncheon was the presentation of a donation of $1,000 to Sam Rayburn Middle School. Two representatives from the school attended, and informed us of the exciting ways that the money from SAABE has been used in the past. Hope to see all of you at next month's lunch at our new location, the Old San Francisco Steak House!

SAABE Sponsors Clothing Drive

Last month, we donated $1,000 to Sam Rayburn MS, which will be used for their students' needs. Mrs. Anita Contreras and Barbara Gamez, the ladies that received our donation, also mentioned that they have problems keeping their kids warm. Some kids do not have winter clothing. These kids, as you know, are constantly growing and cannot fit into last year's jackets, pants, sweaters, etc. They have asked if we can help.

So, I am asking that you clean out the back of your closets and help clothe these kids. They will need jackets, coats, pants, sweaters, dresses, slips, socks, shoes. They also need personal hygiene items – can you come up with an extra tube of toothpaste? A new toothbrush or hairbrush? What about dishes or kitchenware that you don't use anymore? Do you have stuff left over from a garage sale and you don't know what to do with it? Put it to good use! Bring it to the October membership meeting.

By the way, we need a couple of trucks that can deliver the stuff to the school after the meeting. Can you help out? Let's all pull together and show them how much we care for our community. Forgetting is not an excuse ... you'll get a reminder with your RSVP notice prior to the meeting!

Tio SAABE Asks...

What's the story about those low mercury lamps?

Greg Graham of American Light answers:

In 1990 the EPA introduced the Toxicity Characteristic Leaching Procedure (TCLP) as the Federal government's method for hazardous waste determination. Since the mid-eighties, lamp manufacturers have been working to reduce the mercury dose in their products. Industry-wide, this campaign has been so successful that by the year 2000 the average mercury content in fluorescent lamps was 75 percent lower than it was in 1985.

There are currently five states that require the use of low mercury lamps. Texas is not one of them. Under Federal regulations, only facilities that generate more than 100kg of hazardous waste per month are required to treat fluorescent lamps as hazardous waste. Therefore, facilities that dispose of less than 12 cases of four-foot T12 lamps per month are exempt.

source: www.sylvania.com

Tio SAABE President Elena Castillo Adds:

TCLP testing is performed in a sanitary landfill, where samples of lamp waste are extracted after a length of time and analyzed for certain metals (e.g., mercury). The concentration samples are then compared to specified regulatory limits. While Texas is not one of the five states that are regulated and required to use low mercury lamps, if you would like to participate in this program, low mercury lamps can be purchased from your local lighting company.

According to the Environmental Protection Agency, management control for spent mercury-containing lamps is necessary to minimize releases of mercury into the environment during accumulation and transport, to ensure safe handling of such lamps, and to keep these lamps out of municipal waste management facilities such as landfills and solid waste incinerators.

Mercury, a silver-white metallic element, liquid at ordinary temperatures, is toxic and easily volatilized; it can be dispersed widely through the air and transported thousands of miles. Because of its low boiling point, mercury is largely vaporized during municipal waste combustion and, without the use of control technologies specific to mercury, passes out of the municipal waste combustor into the atmosphere with the flue gas. It undergoes complex chemical and physical changes as it cycles among air, land, and water. Humans, plants, and animals may be exposed to mercury and accumulate it during this cycle, potentially resulting in ecological and human health impacts. The primary health effects from mercury are on the neurological development of children who eat fish and fetuses exposed through their mothers' consumption of fish.

Remember, even though Texas is not regulated, we can do our part to protect both human health and the environment.

source: www.epa.gov/epaoswer/hazwaste/id/merc-emi/merc-pgs/fedreg.pdf

Heard It Through the Grapevine

- Bernardo Chapa is now Director of Engineering at the Sheraton Gunter Hotel. He may be reached at 227-3241.
- Congratulations to Kim Speer and David Webb on their recent marriage!
- Arcadio de Hoyos is now Building Engineer at Cypress Tower.

Tech Talk #51

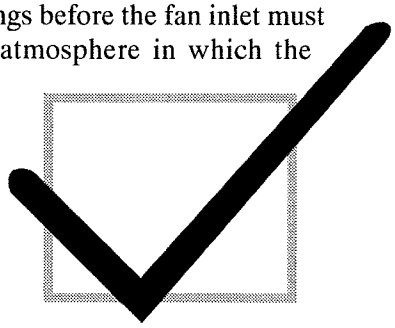
by The Charlie

HVAC Piping & Ducting Systems! (Part Three of Three) —

HVAC Performance Testing: A Total System Approach (Cont')

Performance Testing Fans

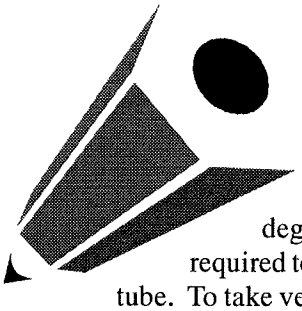
To measure the static pressure rise across a fan, connect a piece of tubing from the static pressure port on a Pitot tube to the positive side of a manometer. Insert the Pitot tube in the test hole on the discharge of the fan and record the static pressure. Next, switch the tubing from the positive to the negative side of the manometer. Then, insert the Pitot tube in the test hole on the inlet side of the fan and record the static pressure. Add the readings to get the static pressure rise across the fan. An example would be if you had an in-line fan in a duct with –1.5" on the inlet side and +0.5" on the discharge side, the static pressure rise across this in-line fan would be 2.0 inches (disregard the + and – signs). This pressure is also commonly called "total static pressure." The pressure readings before the fan inlet must be negative (relative to the atmosphere in which the readings are taken). The readings after the fan outlet must be positive. If the readings are not negative (inlet) and positive (outlet), a determination must be made as to why this is the case, and corrections must be made before proceeding with the testing.



Performance Testing Duct Systems

A traverse of the duct is needed to determine the total air volume in the duct. A Pitot tube and manometer can be used to find average velocity in the duct. Electronic manometers read out directly in velocity. The readings from some analog manometers are units of velocity pressure. These readings will need to be converted to velocity by taking the square root of the measured velocity pressure and multiplying the result by 4,005 (for "standard air" conditions). Having found the average velocity, the volume of air in the duct can be mathematically calculated using the equation cfm=AV. The air quantity in cubic feet per minute (cfm) is equal to the area (A) of the inside of the duct in square feet times the average velocity (V) in feet per minute. To reduce the effects of turbulent airflow, locate the traverse point as far downstream as possible from elbows, transitions, take-offs, dampers, or other obstructions.

To determine if the traverse location is good, take a quick set of velocity pressure readings across the duct. If the readings are uniform, the traverse location is probably good. Large variations in the readings indicate that there is considerable turbulence in the duct and therefore that it is not a proper location for the traverse. Field conditions may be such that good locations for Pitot tube traverses cannot be found.



After the location for the traverse has been determined, drill equally spaced holes in the duct to accommodate the Pitot tube. If the duct is round, drill two holes in the duct 90 degrees apart. 3/8^{ths} inch holes are required to accommodate the standard Pitot tube. To take velocity pressure readings, use two pieces of tubing. Attach one piece of tubing to the total pressure (TP) connection on the Pitot tube. Attach the other piece of tubing to the static pressure (SP) connection. Next, attach the static pressure tubing to the negative side of the manometer. When using a Pitot tube and manometer, the installation is always the same, no matter if the reading is taken in the supply, return, or exhaust duct. Check that the holes in the Pitot tube are not obstructed. Also, check the tubing for deterioration. Insert the Pitot tube into the duct facing into the air stream and record the velocity pressure (VP) readings. Continually check that the Pitot tube is parallel to the air stream.

Summary

Well designed and properly installed HVAC piping and ducting systems will provide the correct amount of fluid (water or air) to the terminal devices to maintain temperatures and humidity at comfortable levels in the conditioned spaces. Performance testing the systems provides the opportunity to observe and document baseline data. This data provides a reference for monitoring the system to determine when servicing or repair has restored the system to its original operating condition.

Next Month: Pumps and Fans

CHARLIE'S LAW: It is said that the average woman would rather have beauty than brains, because the average man can see better than he can think?

JUSTA MAINTENANCE MAN

Associations Offer Vital Lifeline

The reality of today's changing economy can hit hard when companies face restructuring and downsizing. If you find yourself without a job, remember your association offers members a vital lifeline during tough times.

Networking. Networking with peers is a crucial part of the job search process. Your association can put you in touch with colleagues in your field. What better way to tap their expertise, swap ideas and discuss job leads?

Educational Workshops. Check out the training opportunities provided by your association. You can learn a marketable new skill or enhance your job knowledge on a topic. But, most importantly, you will receive a chance to meet fellow association members who can provide you with valuable job leads.

Trade Shows. Meet vendors with whom you've worked and check out the latest innovations in the industry you may need at your next job.

Information. Association publications provide industry information to help you stay current and competitive. They offer you practical, proven survival techniques to help you through the transition.

Job Referral. Your association operates a job bank and posts job listings in its newsletter. Check with the association office to see what services or job resources are available.

When times are tough, don't forget the safety net your association provides to get you back in business. Let your association membership work for you when you need it most!

Employment Opportunities

Tolin Mechanical Systems Company is now accepting applications for a Lead Engineer and a Level II Operating Engineer. Tolin's facility engineers troubleshoot, operate, repair and maintain the facilities' technical systems and related equipment as assigned in a timely, professional and high quality manner. Also responsible for assuring the reliable operation of a safe physical plant, performing preventive maintenance, implementing emergency plans, maintaining a constant awareness of the operation of the physical plant, its systems and components. We aim to maintain the highest level of tenant satisfaction possible. Please contact Stuart Thompson at 225-1119 (office) or 669-7984 (mobile), or visit www.tolin.com for company information.

Facilities Maintenance Technician - This is an hourly position that requires at least 3 years experience in maintenance in a facilities management environment. Please contact Ron Osborn at 210-521-3065 or ron.osborn@caremark.com for more information.

Looking for a Job?

Post your resume online at http://saexpress.hire.com! Click the "Candidates" link. Then create a profile for your ideal position. While filling out your profile, you will come to a section where you can post your resume. If you need further help, you can send an e-mail to mysajobs-admin@hire.com.

Disaster Response: How You Can Help

In the wake of the tragic events in New York and Washington D.C., many of us are overcome with feelings of helplessness. However, from donating blood to providing tips and info to the FBI, there are ways you can help.

- To donate blood, call the **Red Cross** at 1-800-GIVE-LIFE or America's Blood Centers at 1-888-BLOOD-88 to schedule an appointment.
- To donate to the **United Way** fund to help the victims of the recent terrorist attacks and their families, call (212) 251-4035. To donate money to the Red Cross, call 1-800-HELP-NOW.
- Find a wide range of information and phone numbers at **FirstGov**, the official US government Web site.
- To make donations to the **Salvation Army** for helping the victims, call 1-800-SAL-ARMY.

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SAABE TIMES
September Issue

Final Thought —

"Of the seven dwarves, only Dopey had a shaven face. This should tell you something about the custom of shaving" — Tom Robbins

2001 Board of Directors

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Membership Luncheon
September 19, 2001

Time: 11:30 a.m.

Location: The Barn Door
8400 N. New Braunfels Ave.

Topic: Fire Protection

Speaker: Vince Baker and Rick McGarr

Sponsor: SimplexGrinnell.

Upcoming Luncheons:

October 17, 2001
Sponsor: Mechanical Maintenance of Texas

The SAABE Times is produced monthly for the San Antonio Association of Building Engineers by:

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