
FLUE PIPE

American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.
Shreveport Chapter

March 2004

PRESIDENT'S MESSAGE

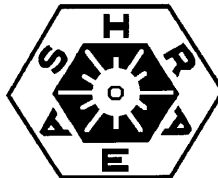
It's hard to believe that springtime is here already! I hope everyone has been taking advantage of the beautiful weather lately.

Our March meeting will take place on **Thursday, March 18th at Kon Tiki**, and will feature Mr. Gil Avery, P.E., of Kele Company, Memphis, TN. If you are a regular reader of your ASHRAE journal, you will recognize Mr. Avery's name. Gil has contributed several articles to ASHRAE on a variety of topics, primarily focusing on new and innovative ways to improve chiller plant efficiency. Gil is a former ASHRAE Distinguished Lecturer and should provide us with an excellent presentation.

I want to remind everyone to make plans to attend this year's CRC in Tyler, Texas on April 22, 23 and 24. If you are an officer or committee chair for next year, it is essential that you attend your officer or committee workshop on April 24. For the rest of our members, Tyler is only 90 minutes away and the CRC offers social activities to catch up with friends from other chapters as well as technical sessions to earn continuing education credit. I encourage all of our members to get over to Tyler even if you can only go on one day or to one event. We need to show support for not only our chapter but for Region VIII as well.

I hope to see you this Thursday night at the meeting. Thank you for your continued support of Shreveport ASHRAE.

Thomas Sanders, P.E.
President



DATE: Thursday
March 18, 2004

PLACE: Kon Tiki
5815 Youree Drive
Shreveport, Louisiana

TIME: 5:30 p.m. - Social
6:30 p.m. - Meeting

PROGRAM: "Optimizing Chiller Plant Efficiency"

SPEAKER: Gil Avery, P.E.
Kele Company

NOTE: 1 PDH will be provided for continuing education credit!

Sponsored by Storer Equipment Company

***East Texas 2004
Region VIII CRC***

East Texas Chapter of ASHRAE is pleased to invite you to the 44th Annual Region VIII Conference in Tyler, Texas on April 22-24, 2004.

TREASURER'S REPORT

STUDENT ACTIVITIES COMMITTEE

Statement of Accounts	Jan 31, 2003	Feb 29, 2004
Certificate of Deposit (Heller)	\$ 6,500.00	\$ 6,500.00
Certificate of Deposit (Jordan)	\$ 7,000.00	\$ 7,000.00
Certificate of Deposit (Guth)	\$ 500.00	\$ 500.00
Savings Account	\$ 412.82	\$ 451.10
Checking Account	\$ 3,403.20	\$ 3,656.20
Total Account Balance	\$ 17,816.02	\$ 18,107.30

Statement of Income

	Income:	1/31/03	2/29/04
Dues	\$	360.00	\$ 0.00
Meeting Meals	\$	2,567.00	\$ 403.00
Golf T. Receipts	\$	150.00	\$ 0.00
Misc.	\$	00.00	\$ 0.00
Other	\$	65.00	\$ 0.00
Total	\$	3,142.00	\$ 403.00
Expenses:			
Web Site Master	\$	65.00	\$ 65.00
Meeting Meals	\$	337.50	\$ 0.00
ASHRAE Research	\$	281.00	\$ 0.00
Newsletter	\$	85.00	\$ 85.00
Student Chapter Expenses	\$	0.00	\$ 0.00
Pins and Awards	\$	0.00	\$ 0.00
Bar Bill	\$	434.58	\$ 0.00
RVC Hotel Room	\$	0.00	\$ 0.00
Region VIII Dues	\$	0.00	\$ 0.00
Total	\$	1,203.08	\$ 150.00
Net Income (Loss):	\$	1,938.92	\$ 253.00

Submitted by Gary Patrick, Treasurer

Region VIII Projects Funded By the 2004 Undergraduate Senior Project Grant Program

Project	School	Faculty	Amount
Design and Construction of a Laboratory Unit for Convective Heat Transfer	Lamar University	Kyaw Aung, Ph.D.	\$5,000.00
Design and Development of Modules for Thermal Conductivity and Fin Analysis	University of North Texas	Dr. Seifollah Nasrazadani	\$5,000.00
Analysis of a Diffusion-Absorption Refrigerator Using Solar Energy	Instituto Tecnológico Y De Estudios Superiores De Monterrey	Dr. Jose A. Manrique	\$3,580.00
Design & Fabricate a Window Blind Thermal Test Unit	Oklahoma State University	Jeffrey D. Spittler, Ph.D., P.E.	\$5,000.00
Design & Construction of an Experimental HVAC System for Room Airflow Studies	Oklahoma State University	Daniel E. Fisher, Ph.D., P.E.	\$5,000.00
Solar Powered Cooler Design Competition	Louisiana Tech University	Dr. Hisham Hegab	\$5,000.00
Laboratory Demonstration of Pump Energy Savings Using Variable Frequency Drives	University of Texas at San Antonio	Randall D. Manteufel	\$5,000.00

UB Team Develops Simple, Yet Powerful Device that "Sterilizes" Contaminated Air, Eradicating Biological Agents like Anthrax

Release date: Friday, February 27, 2004

Contact: Ellen Goldbaum, goldbaum@buffalo.edu
[<mailto:goldbaum@buffalo.edu>](mailto:goldbaum@buffalo.edu)

BUFFALO, N.Y. -- A team of University at Buffalo scientists and engineers has developed a device that in minutes, instead of months, could safely and inexpensively destroy airborne biological agents in buildings as large as the Hart Senate Office Building in Washington, D.C., which was closed for several months after anthrax was detected there in October 2001.

The device, called the BioBlower(tm), has immediate homeland-security applications, with the potential to eradicate a wide range of biological pathogens, such as anthrax, smallpox, SARS, influenza, tuberculosis and other toxic airborne species.

It destroys pathogens by rapidly heating contaminated air and could be employed either as a portable air-purification unit for first responders at the site of a biological attack or installed as a permanent part of a building's air-handling system to be activated immediately as soon as biological toxins are detected.

UB has filed for a provisional patent on the Bioblower(tm) and is negotiating a licensing arrangement with B3, a Buffalo company that its developers have formed to commercialize it.

In addition to homeland-security applications, the BioBlower(tm) also could provide a continuous clean air supply in hospitals, as well as military command centers and other battlefield facilities.

"The BioBlower(tm) destroys airborne biological agents essentially by sterilizing the air," said Jim Garvey, Ph.D., professor of chemistry in the UB College of Arts and Sciences and a co-inventor of BioBlower(tm). The other co-inventors are John Lordi, Ph.D., research professor, James D. Felske, Ph.D., professor, and Joseph C. Mollendorf, Ph.D., professor, all in the Department of Mechanical and Aerospace Engineering in the UB School of Engineering and Applied Sciences.

Garvey noted that the invention represents a quantum leap ahead of the current conventional technology, HEPA (High-Efficiency Particulate Air) paper filters, which are used to trap large airborne spores and need to be changed frequently, stored carefully and subsequently destroyed.

"With our device, there are no filters to change and very minimal maintenance," said Garvey. "The BioBlower(tm) indiscriminately destroys all airborne biotoxins via the extreme heating of the gas."

In a series of recent tests performed by scientists in the UB Department of Microbiology and Immunology and the Calspan-UB Research Center (CUBRC), the BioBlower(tm) successfully destroyed more than 99.9 percent of aerosolized spores of a benign anthrax simulant, *Bacillus globicili* (Bg).

"Bg spores are considered the gold standard for biotesting," explained Garvey. "Now that we can completely eliminate these hardy bacteria, we can kill any and all airborne biological toxins."

To conduct the tests, Richard Karalus, Ph.D., director of microbiology for CUBRC and senior scientist in the UB Department of Microbiology and Immunology, and his colleagues devised techniques to inject an

aerosol of the Bg spores into the BioBlower(tm) and recapture them on the exhaust side to see if they were still alive.

At temperatures of 50, 100 and 150 degrees Centigrade, most of the spores came through unscathed, Garvey said.

"But above 200 degrees, in just milliseconds of exposure to that heat, we killed 99.9 percent of them in a single pass," he said.

The BioBlower(tm) heats the contaminated air, Garvey explained, by mechanically compressing it as it is being blown rapidly through a mechanical rotary pump.

"This recompressive process uniformly increases the temperature of the entire volume of gas, almost instantaneously," he said, adding that the same type of compressive heating occurs when a tire gets hot as it is inflated with air.

"The dramatic effect we observed is due to chemical combustion; these spores simply get burned away to ash," he said.

The BioBlower(tm) is well-suited to applications in hospitals and other health-care settings, where airborne infections can be a leading cause of disease and even death.

"This technology continuously cycles the air," said Garvey, "making it ideal for use in isolation wards, because it will kill infectious agents in the air before they can be released outside of the isolated area."

The device also is applicable to battlefield operations, such as tents, command headquarters and enclosed armored vehicles, where a continuous supply of clean air is essential, he added.

According to its developers, the BioBlower(tm) is based on a modification of a Roots blower, a mechanical air-pump technology, which has been in existence for more than 100 years, and which has been used for a range of applications from vacuum pumps in research laboratories to superchargers for drag-racing "funny cars."

"It's a deceptively simple idea," said Lordi.

Roots blowers, he explained, consist of two rotating stainless steel cams that turn in opposite directions so that air is sucked in at one end and pushed out at the other end.

Lordi had been conducting research with Mollendorf and Felske on using a Roots-type mechanism to compressively heat gases.

The BioBlower(tm) is a modified Roots blower pump capable of extremely high gas-flow rates, up to hundreds of cubic feet per minute, Lordi explained.

"In the BioBlower(tm), the entire volume of air ingested by the rotary pump is rapidly compressed and heated to between 200 and 250 degrees Centigrade," he said. "Then it's expanded and cooled before being returned -- free of any biotoxins -- to the area being remediated."

The UB team is seeking government and private funding to further test the BioBlower on viruses and other bacteria and also to modify it for destruction of chemical agents as well.

Biotesting with Bg was funded by the University at Buffalo's Center for Advanced Technology, which promotes development and commercialization of UB research with the support of the New York State Office of Science, Technology and Academic Research (NYSTAR).

The BioBlower(tm) is a direct result of collaborations between chemists in the UB College of Arts and Sciences, engineers in UB's School of Engineering and Applied Sciences and microbiologists in the university's School of Medicine and Biomedical Sciences.

Roger S Stanley, D.E., P.E., Kurt Lyles

Student Activities

Our region is having another good year in Student Activities. We continue to be a leader in Society. This year, one-third of all student grant projects awarded by Society will go to Region VIII universities.

At the Summer Meeting, we chartered new student branches at the University of North Texas in Denton, and at Instituto Tecnológico De Ciudad Madero in Tamaulipas, Mexico. At the Winter Meeting we chartered a new branch at Instituto Tecnológico Y De Estudios Superiores de Monterrey in Mexico City. We are going at a faster rate than any other region on the continent.

Most of the chapters in the region are doing very well. We have a lot of activity going on around the region. Mexico City, Monterrey, and Dallas are doing an absolutely outstanding job this year. Keep up the good work and I look forward to seeing everyone in Tyler!

Kurt Lyles
Regional Vice Chairman

A BACKWARD GLANCE

Dee Nooner

Well, it's that time of year again. CRC will quickly be upon us and if you don't go you will sure miss passing a good time. I plan on being there, doing my little part, finding out what has happened, and planning to make something good happen next year too. I hope I see you there.

But we are supposed to concentrate on history a little in this column, so I guess we better get back to that.

What is on my mind this month is John Tarleton. John S. Tarleton was 77 years old when he passed away last July 12th here in Shreveport and he was a really great guy to be around in a business where so many work so hard it is sometimes hard to find someone who will slow down long enough to help you have a little fun every once in a while. But John S. Tarleton would, and could.

John was born in the oldest town in Louisiana, Natchitoches, and he grew up to be a tall, easy going guy, who moved to Shreveport, worked for Berg Mechanical for many years before he retired, supported LSU as hard as anyone, and enjoyed the family of children and grandchildren that God so graciously sent his way. In many ways he was a blessed man and in many ways a man not so much different from a lot of us.

But John was different. John had a special talent to make you feel that things weren't so bad even when they were. You could have a problem that needed solving and John would help you solve it in the best way possible.

Our businesses are all about making people feel comfortable, feel better, feel happy. As you know this isn't too easy to do all of the time, because most of those things are fleeting, moving targets and all the specifications in the world can't tell you what exactly is always needed even though they try. So you do the best you can, but (as we all know) "stuff happens." (If it hasn't happened to you lately, then it's about to, believe me.)

Well, the point is, John could have it happen to him (or to others around him) and he could just sort of shrug it off (or at least make you think he could.) He seemed to be able to just turn loose of it, help you turn loose of it, come up with what was a good way to get it fixed, (what else can you do anyway?) and then move on. Not many of us really have that quality; too many of us feel the need to worry, fret, and stew about things, make them worse than they are. But not John.; that's what I always liked best about him.

God never made a better guy to talk to, drink a cold beer with, do a little business with. And I miss him.

Well, I guess I'll see you at the next meeting or at CRC. (Hope I don't miss you.)



The officers, board of governors, and committee chairmen for 2001-2002 are listed below.
Call with your ideas and suggestions.

We encourage your support!

OFFICERS

President	Thomas Sanders	425-4500
President Elect		
Secretary	Elmer Tingler	797-5006
Treasurer	Gary Patrick	671-0015

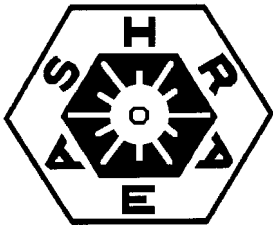
BOARD OF GOVERNORS

Thomas Sanders	425-4500
Gary Patrick	221-3549
Jeff Lutz	686-7588
Mike Middleton	221-8638

COMMITTEE CHAIRMEN

Membership	Mike Middleton	221-8638	Research	Nathan Wilemon	634-1934
Chapter Programs	Thomas Sanders	865-5663 x469	Newsletter	John Gegg	865-1466
Historian	Dee Nooner	865-1466	Honors & Awards	Nancy Simonton	
TEGA/Refrigeration	Roger Stanley	865-1466	CRC Delegate		
Student Activities	Jim Watts	869-3262	CRC Alternate		

The *Flue Pipe* is published monthly by the Shreveport Chapter of ASHRAE. Statements made in this publication are not expressions of the Society or of the Chapter and may not be reproduced without prior consent of the Chapter.



P.O. Box 19130
Shreveport, La. 71149