

## January Meeting

### Distinguished Lecturer Program

**Topic:** Product Liability, see p.3 for more info

**Who:** Leighton E. Sissom, Ph.D., P.E., former Dean of Engineering at TTU

**When:** Thursday the 18<sup>th</sup>, 6pm

**Where:** Amato's Restaurant

**RSVP:** Jason Doran, [jdoran@eastman.com](mailto:jdoran@eastman.com) by Monday, January 15<sup>th</sup>

**1 PDH credit available at this meeting** (free certificate for ASME members, \$5 for non-members)

**Mark Your Calendars:** **February Meeting** is the Egg Drop Event at Ft. Henry Mall, Saturday February 24<sup>th</sup> – see page 4 for all the details

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## December Meeting Recap

Write-up by Dick Burow

Jason Speers spoke on the “History of BAE Systems” at the December meeting held at Giuseppe’s. Jason is a Mechanical Engineer working for BAE Systems, the operating contractor for Holston Army Ammunition Plant. Jason previously worked at the Helicopter plant in Piney Flats.

Jason told a brief history of HAAP. At the beginning of World War II the US Government turned to Tennessee Eastman Company, a leading manufacturer of acetic anhydride, which was vital to explosive manufacture, to develop a manufacturing process for RDX. RDX was crucial to the war effort because TNT could not sink the German U-boats that controlled the Atlantic Ocean. RDX is a sugar-like explosive that is much more powerful than TNT. England and the US began research to safely make large quantities of RDX. Dr. Bachman of the University of Michigan developed the “combination process” which required large quantities of acetic anhydride instead of nitric acid as did the old English “Woolwich process”. Thus in February of 1942 TEC built the Wexler Bend pilot plant and began producing small amounts of RDX. This led to the US Government authorization of TEC to design and build Holston Ordnance Works in June 1942. Nine months later (April 1943) RDX was being manufactured at H.O.W. By June 1943 so many U-boats had been sunk that the German Navy could not control the North Atlantic and in September 1943 no US merchant ships were sunk in the Atlantic.

The plant was mothballed after the war and reactivated for the Korean War as Holston Army Ammunition Plant with Holston Defense Corporation – a subsidiary of Eastman Kodak – as the operating contractor. In 1999 BAE Systems took over as the operating contractor.

Jason explained that HMX and numerous combinations of RDX and HMX have been developed. He also brought a video of the explosive demonstration and the ¼” boilerplates from that demonstration. A small cone of TNT and Comp B (the lowest level RDX) are detonated on the plates. The TNT puts a dent in the plate, while the Comp B cuts a 2” diameter hole in the plate. This is the reason the Germans lost their U-boats.

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## ASME To Hold Three Industry-Focused Conferences on Biotechnology

Leaders in the science and engineering communities will assess the latest technology in bioprocess engineering, biomechanics and medical devices and instrumentation at three ASME conferences in June 2007.

The ASME Bioprocess Technology Seminars and Exhibits will be held June 4-6, 2007, at the Radisson-Dublin ST. Helens Hotel in Dublin Ireland. The second conference, Frontiers in Biomedical Devices 2007, is scheduled for June 7-8, at the Hyatt Regency Irvine in Irvine, Calif. The 2007 Summer Bioengineering Conference will take place June 20-24, at the Keystone Resort and Conference Center in Keystone, Colo.

The three conferences will examine the progress and future directions in biotechnology research, and provide practitioners with the latest tools and training to advance commercial applications in the field. ASME's objective in presenting the conferences is to provide the fast-growing biopharmaceutical industry with useful resources to solve technology challenges.

For more information, visit:

[http://www.asme.org/Communities/Technical/BPE/Bioprocess\\_Activities.cfm](http://www.asme.org/Communities/Technical/BPE/Bioprocess_Activities.cfm)

## ASME Wants You To Become An ASME Leader!

ASME is looking for bright, energetic Early Career Engineers interested in volunteering their time for the engineering profession. Selected applicants will be funded\* to attend the Leadership Training Conference from March 2-4, 2007 at the Wyndham Greenspoint Hotel in Houston, Texas.

At the conference, gain insight into ASME's organization, activities, and resources, learn what it takes to lead or start an ASME unit, and network with more than 150 other ASME leaders.

To apply, email your application to [EarlyCareerEngineers@asme.org](mailto:EarlyCareerEngineers@asme.org) with the subject: "Application for EC Delegate to LTC-07." The application deadline is Jan. 19. If selected, you will be notified by Jan. 31.

For more information on the conference, go to <http://www.asmeconferences.org/ltc07/>

\*In accordance with ASME's Volunteer Travel Policy, ASME will pay 100% of your travel costs and up to \$100 per day for your hotel and per diem. The Wyndham is \$94 per night plus tax. ASME asks that you pay a \$75 registration fee to cover your meals while at the conference.

## Call for Nominations: 2007 Old Guard Early Career Engineer Award

Recognize an outstanding early career engineer actively involved in their profession, their communities, and the work of the Society. Submit Nominations Today! Visit <http://files.asme.org/asmeorg/Communities/EarlyCareer/8026.pdf> for more details. The deadline for all nominations is March 1, 2007.

## 2007 Johnson & Johnson Consumer Companies, Inc. Medal



The Johnson & Johnson Award, first presented in 2005, recognizes outstanding contribution to the promotion of diversity and inclusiveness within the engineering community. This award is open to ASME members and individuals who are members of a recognized/engineering or professional society.

The deadline for all nominations is Feb. 1, 2007. For additional information and forms, visit

[http://www.asme.org/Governance/Honors/SocietyAwards/Johnson\\_Johnson\\_Consumer.cfm](http://www.asme.org/Governance/Honors/SocietyAwards/Johnson_Johnson_Consumer.cfm). or contact ASME staff contact: Mary James Legatski, [legatskim@asme.org](mailto:legatskim@asme.org)

## More Local Section News

### December Meeting Recap Continued from Page 1

One of the more well known explosive combination is C-4, which is a plastic explosive used by the military. HMX is used as rocket and missile fuel. They have an identification system for the explosives so that the origin can be traced. He briefly reviewed the manufacturing process through the various buildings. In the early 1970's the Army embarked on a modernization program to install up-to-date technology and materials at HSAAP and that program continues today. Also, Jason discussed how BAE systems have an active project to develop "insensitive munitions" so that explosives cannot be detonated by a nearby explosion or fire.

HSAAP has had an impressive safety record with no deaths related to explosions at the plant. The most recent explosion was with a railcar – being cut up for scrap – that had held ammonium nitrate fertilizer. All employees and contractors have extensive safety training.

BAE Systems is also selling explosives to commercial customers and having other commercial operations take place on the property. They have railcar storage at the plant as well as railcar repairs being made. A small business development center has been built at the plant. The plant also has an environmental and wildlife management program.

This was a very interesting program and we appreciate Jason bringing it to us.

### 2007 Young Mechanical Engineer of the Year Award

The Young Mechanical Engineer of the Year Award recognizes excellence in technical ability and service to the ASME. The award is open to a mechanical engineer under 35 years of age who is a member of the Holston Section.

The deadline for all nominations is February 2, 2007. To submit nominations, please contact Matthew Dickerson, [mdickerson@eastman.com](mailto:mdickerson@eastman.com)

### Preview of Distinguished Lecturer Program – January 18<sup>th</sup>

#### *Product Liability* by

Leighton E. Sissom, Ph.D., P.E.

Engineers are subject to being sued by consumers for injury resulting from using a defective product. While most plaintiffs go for the "deep pockets" of the engineer's employer or other major companies in the chain of commerce, the individual engineer must be concerned for his design of products and processes, warnings, and instructions.

Dr. Sissom's presentation on *Product Liability* is a legal subject from an engineering viewpoint. He will outline what is required for a plaintiff to win and for a defendant to win in a legal battle. His presentation will be illustrated with a variety of cases, taken from his own experience, to emphasize prudent engineering principles and the incorporation of codes and standards.

Sissom has investigated accidents and product failures and served as an expert witness in the courts for over 40 years. He has served as a consultant to over 800 clients in 41 states and 11 foreign countries. He has written over 100 papers, more than 2,000 proprietary reports, contributed to the *Encyclopedia Britannica* and to the *Wiley Encyclopedia of Electrical and Electronics Engineering*, and co-authored 4 books. He has testified in state and federal courts over 200 times and given hundreds of depositions.

Dr. Sissom has had 3 careers—6 years in industry, 30 years in academe and now a consulting engineer for the last 17 years. In 1989, he became Dean Emeritus of Engineering at Tennessee Technological University, where he was Professor, Chairman of Mechanical Engineering, and Dean of Engineering. Since then, he has devoted full time to his consulting firm, Sissom & Associates, Inc., which was established in 1978.

**Win Dinner on ASME:** Correctly answer the following ASME trivia question and you'll be entered to win a free dinner at the next meeting... "Who was the person from Tennessee Eastman Company that signed the petition for the first ASME Section in East Tennessee?"

Email your answers to Dick Burow by 1/17, [rburow@chartertn.net](mailto:rburow@chartertn.net) and if you're correct you'll be entered into a drawing for a free dinner. (Hint: Use Holston Section website for help)

### Egg Drop Press Release (12/18/06)

This year's American Society of Mechanical Engineers (ASME) Egg Drop contest will be held at 1:00 P.M. on Saturday, February 24th, in the Belk's Court of the Fort Henry Mall and is expected to last approximately 2 hours. The Egg Drop contest encourages local students to put their math and science skills to work in a fun and challenging way as they design protective cases for eggs, and then drop the eggs from 22 feet onto a target. Contestants earn points based on how many parts their cases comprise, how close to the target the egg lands (and, of course, whether the egg lands safely), and how much the case weighs. The top three winners in each of 5 categories will be receiving cash prizes.

Anyone in the community is invited to participate. There will be five competing categories: Elementary school (K-5<sup>th</sup> grade), middle school (6-8<sup>th</sup> grade), high school (9-12<sup>th</sup> grade), adult and teams. The team category can include any age person and any number of people can be on a team. Each entry will receive a t-shirt at the competition and entries in the team category will receive up to 4 t-shirts with their entry fee. Additional t-shirts will be available for purchase at the competition or can be ordered in advance on the website. Several area sponsors include Eastman Chemical Company, BAE Systems, Day & Zimmermann, ASME, Mark Freeman and Associates, AIChE, ASQ, Eastman Credit Union, Weyerhaeuser, QK4 Engineering, TSPE, Food City, and the Fort Henry Mall. This years contest is expected to attract approximately 100 entries and a crowd of over 300 spectators.

Get more information at [www.asme-eggdrop.org](http://www.asme-eggdrop.org) or by calling the Egg Drop Chairman, Mary Bailey (423) 967-5164.

### Volunteer Opportunity Reminder

ASME will be sponsoring a local Science Bowl Competition to be held in February 2007. The academic competition, focused on Science and Math, will involve local high schools fielding student teams consisting of 4 members. The winning teams will progress to a State competition to be held in Alcoa, Tennessee on February 24. Winners of the State competition will advance to the National Science Bowl. The local competition, providing \$600 in prize money, will mirror the format of the State competition, more details available at <http://www.orau.gov/sciencebowl/index.htm>. Our local ASME Chapter has agreed to purchase model hydrogen model car kits (valued at \$150 ea.) to the first 3 schools entering the local competition.

**We need your help!** ASME members, parents, teachers or others who are interested in supporting the event in the role of volunteer coaches or event coordinators are encouraged to contact Larry Bailey (224-0945 or [labailey@eastman.com](mailto:labailey@eastman.com)). Here's a great opportunity to share your knowledge and help our local schools compete for State and possibly National recognition in the area of Science and Math.