



The Canaveral Flyer

A Newsletter of the Canaveral Section of ASME International

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<http://www.asme.org/sections/canaveral/index.html>

REMEMBER OUR TROOPS!

Letter from the Chair...

Well I have made it through the first six weeks as your new ASME Canaveral Section Chair and am beginning to settle into the role. My hat is off to the past chairs as I begin to gain a better understanding of what is required on a daily basis as Chair. My duties include helping to plan events and keeping information flowing from not only the ASME, but from the member sections through Canaveral Council of Technical Societies (CCTS). It is a fulfilling job and an honor to be the focal point and representative of the Canaveral Section. I am proud to have this opportunity.

One of the honors that comes with this post is being able to present the J.Tal Webb Award at the annual CCTS Banquet held at the end of E-Week in February. As I was preparing for what I would say, I could not help but think how small our world has become. We the Engineers of Brevard County, put satellites into space and connect them to the associated ground communications terminals in place here on Earth. Because of our efforts, our world has indeed become a much smaller place. We turn on our television sets and see "Real Time" what is going on around the world and around our nation. Sometimes we watch these events and feel somewhat removed because they seem so far away, while other times we are drawn in because we feel a deep personal connection to the story. We all felt that connection a few weeks ago with the loss of Columbia. This connection was deeply felt by our colleagues who actually work on the mission at Cape Canaveral, by the residents of the Space Coast, and by the International Community as well. We can all take pride as engineers to have been able to help make our world a smaller place through the technologies we deal with on a daily basis!

Dan Johnson

Preview of Coming Attractions

- ♦ March 12 Canaveral Section Awards Banquet at Quality Suites, Indialantic
- ♦ March 20 Canaveral Section Meeting at Florida Tech with our Special Guest Sue Skemp, Current ASME International President
- ♦ March 26 Canaveral & Fla Tech Student Sections Dinner Meeting & Senior Design Presentation
- ♦ April 7-10 PD Course: ASME B31.3 Process Piping
- ♦ April 22 DL Lecturer Series: Dr. Zweban speaking on Application of Advanced Composites in Mechanical Engineering
- ♦ May 13 PD Course: Design of Bolted Flange Joints
- ♦ June PD Course: Cryogenics Fundamentals

Please see our web page for further information of these and other events coming up soon.

Canaveral Council of Technical Societies Banquet

The CCTS Banquet for this year was a huge success with over 150 people in attendance with your ASME Canaveral section making up 23 of those guests or 3 tables worth! Adrian Laffitte, our section's J.Tal Webb Award recipient from 2001 was this years keynote speaker. Adrian gave a very informative talk on the Atlas rocket program going on at the Cape.

I was pleased to represent our section by giving out the J.Tal Webb Award during the banquet. The award was established in 1993 in recognition of diligent service and unselfish devotion in support of the space program. The award is given to senior managers and technical directors with a minimum of ten years contribution to the space program. This year's recipient is Scott Kelliher of Lockheed Martin Space and Strategic Missiles Company where he is the Engineering manager for Atlas and Advanced Space Transportation Programs at Cape Canaveral. Scott has over 15 years of experience with his most recent responsibility being the overall engineering and construction management of the Atlas V/EELV launch processing facilities. The effort included direct oversight of over 100 Lockheed engineers and 1000 craftspeople from 40 subcontractors. The effort was completed in record time and for record savings compared to previous developments of this magnitude. Congratulations Scott on a job well done and in receiving this year's J.Tal Webb Award. Scott Kelliher is shown in the picture below after receiving the award from Dan Johnson on the right and Keith Conaulty on the left.

Prior to my presentation of the award we took time to recognize Hugh Bain for his service to our section. Hugh is a reservist in our Military and was called up for active duty. We asked for those in attendance to remember not only Hugh, but the rest of our military as world events play out in the months to come. I also recognized another one of our hard working section members at the banquet, Stephanie Hopper. For those of you who do not know Stephanie, she works at the Cape and is very active in our section as Women's and Minority Chair along with her K-12 activity. Stephanie and her husband Jeff were thrust into the national news when Jeff fell victim to the DC sniper. Jeff was the man who was shot outside the Ponderosa Restaurant. I'm glad to report that Jeff is home and doing well but their lives will always be affected by their involvement in this tragic episode of our nation's history.



Members of our section were recognized for their work in support and leadership of CCTS at the banquet. Members include CCTS's first Chair, our own Jack Wiles, to J. Tal Webb as a later Chair, to Keith Conaulty who recently gave up his post as treasurer with CCTS. Not only do we make a difference in our own society, but of the combined technical societies of the Canaveral area as well!

E-Week Activities

We had a first for our section this year. ASME Canaveral section, along with a couple other organizations were able to set up a booth at Harris GCSD E-Week luncheon. We were able to reach out to engineers and present information about our organization's benefits of membership. Alan Zakaluk helped man the booth and we were able to drum up interest in several mechanical engineers working at Harris.

We got behind and were not able to get the K-12 initiative like we had in place last year. Next year we want to get an early jump on our planning and get more volunteers to take part in speaking to the youngsters about the various fields of engineering. The door is open for us all to have a very positive impact in helping a young person decide how engineering can not only change their life, but society as well. We have the opportunity and the responsibility to make a difference. Contact us to talk about how you can get involved and make this happen!

Activities Planned for March

March is going to be a busy month for our section. On Wednesday the 12th we will hold our Awards banquet at the Quality Suites Hotel and Conference Center in Indialantic. We will recognize our 35 year and 50 year members for their involvement in ASME.

On Thursday the 20th, our section will welcome ASME International president Sue Skemp to come and speak with us for an open discussion of K-12 outreach and what roles we can play in developing our country's future engineering base. The meeting will be held at Florida Tech in the Crawford Science Tower in room S112 starting at 6:30 in the evening. Not only for a chance to network, but for a tremendous opportunity to meet our current ASME International President, we hope to see you there.

On Wednesday the 28th we will hold our annual Canaveral Section/Florida Tech Student Section Joint Meeting and Dinner. The dinner will be held upstairs in the Student Union Building starting at 6:00 PM. This year we will have presentations of senior design projects that deal with an autonomous vehicle and other interesting topics. If this year's event is anything like last years then you will not want to miss it.

If you are interested in attending please contact Dan Johnson or Jim Phillips for details.

What's coming Up Around Our Region

The Canaveral section is part of Region XI of ASME International which includes all of Florida, Alabama, and Mississippi along with portions of Georgia and Tennessee. The 25 sections and sub-sections work together in a variety of ways to enhance the organization an example of which is to bring distinguished lecturer series to our membership, regional or national guest speakers, and training opportunities.

- **April 4-6 Miami Section**
 - Regional Student Conference(RSC)/Regional Administrative Conference(RAC)/Regional Technical Conference(RTC)/Young Engineers Forum(YEF)
 - Held at Marriott Biscayne Bay Hotel and Marina
- Contact Info: <http://www.asme.org/regions/sro/XISpring2003>

Reception for James Kennedy

Jim Phillips, our Canaveral Section Vice Chair, attended the reception for the New NASA Deputy Director as a representative of the Canaveral ASME. Jim met with Mr. Kennedy, Representative Dave Weldon, and NASA Director Roy Bridges, as well as others.

In Jim's comments to Mr. Kennedy, he mentioned the history of our section and support that the Canaveral Section has always provided. Such support includes the PD courses, the active participation in FIRST, and an interaction with Space Congress. Mr. Kennedy is a mechanical engineer and past member of ASME. Jim assured Mr. Kennedy that we are available to support him in his new duties as Deputy Director as the need arises.

After Jim welcomed Mr. Kennedy, Jim spoke briefly with Representative Weldon. Representative Weldon is now on the Appropriations Committee in Congress and feels that he could do KSC more good there than as a junior member on the Science and Technology committee which he was formerly the head of.

Jim also spoke briefly with Roy Bridges and he was "glad to see that we were in support of KSC activities that impact the community". Mr. Bridges was the recipient of the J.Tal Webb Award at the 2002 CCTS Banquet.

What's Happening at Florida Tech!

The Student Section was busy this month in preparation for E-Week. To wrap up the weeks activities at the college, the Student Section joined forces with the Civil Engineering Student section to develop a design competition. The competition was to modify an RC controlled car to haul water using a variety of supplies furnished by the student section. There were a total of five teams that competed on the Civil Engineering created course located in front of the Student Union Building on campus. Each team had five minutes to make their way around the course as many times as they could in an effort to move the largest amount of water. The results varied from cars being over loaded and barely making one time around the course to one team making it several times around. For this particular event, the fastest team hauling the least amount of water had the best results and took home the top prize. Prizes consisted of movie passes to Cinema World in West Melbourne, candy bars, gum, and notebook paper. All are required staples for the university student of today! Congratulations to the Student section for organizing this event which Dr. Kalajian, Associate Dean of Academics for the College of Engineering, said this was "the best that had been put on all week".

If you have any questions for me on getting in contact with the Student Section, please do not hesitate to contact me at either my e-mail djohns08@harris.com or by phone at 729-3686.

Treasure Coast S.E.A.

The February meeting of The Treasure Coast Seniors Engineering Association (TCSEA) was held at the Vero Beach Council on Aging conference room on February 21. The speaker was our own Kelly Mather, a retired propulsion engineer, TCSEA board member, and life member ASME. The title of his talk was "WHATEVER HAPPENED TO THE TURBINE-POWERED AUTOMOBILE?" He spoke about the early successes and failures of the automobile gas turbine and also explained how the engine eventually developed into a workable automobile engine. Ford, General Motors and Chrysler each had automobiles as well as trucks and buses on the road for testing. Economics and improvements in reciprocating engines led to the loss of interest in the engines. An enthusiastic audience of 24 asked several interesting questions and offered some personal experiences with the turbine engine.

TCSEA will have an unusual meeting in March. We will tour the Gifford Youth Activities Center led by center manager Bobbi Davis. The center provides facilities for young people to participate in various physical and mental activities. There is a gymnasium, computer lab, swimming pool and meeting rooms. The pool is heated by a geothermal heating system which extracts heat from underground water sources for pool heating and returns the water underground. Nothing is added or removed from the water except heat. This system is also used in the new north county pool in Sebastian. The meeting is open to the public. Meet at the Center at 10:00AM on March 21. The Center is located at 43rd Ave and 49th St. (4875 43rd Ave) Vero Beach.

For further information contact Chair Ed Holden 772-567-6027 (edwholden@aol.com) or Frank Iaccarino 772-569-7030.

If you have any questions for these members please contact Maurice Hoyt at hoytmo@aol.com.

**American Society of Mechanical Engineers
ASME
Canaveral Section
March Meeting Event
Sue Skemp, ASME International President**

What:

- This will be a Town Hall Meeting Format with a focus on K-12 and what we as Engineers can do to get involved to make a difference
- This will be a combined meeting of the Canaveral & Florida Sections along with Florida Tech & University of Central Florida Student Sections

When:

- **Thursday, March 20, 2003 at 6:30 PM**

Where:

- **Florida Tech Campus, Melbourne
Crawford Science Tower, Room S-112**

Why You Should Come:

- Unique opportunity to talk with current President of ASME International
- Networking opportunity to meet with local engineers and students
- No cost other than you time

Directions from Orlando Area:

- Take **SR-528 EAST (Bee Line)** (25.3 miles)
- Take the **I-95 SOUTH** exit towards **MIAMI** (0.5 miles)
- Merge on **I-95 SOUTH** (24.2 miles)
- Take the **US-192** exit towards **INT'L AIRPORT/MELBOURNE/WEST MELBOURNE**, exit **#180** (0.3 miles)
- Turn Left on **US-192** (0.1 miles)
- Continue on **NEW HAVEN AVE W/W NEW HAVEN AVE** (5.1 miles)
- Turn Right on **BABCOCK ST S/S BABCOCK ST** (1.0 mile)
- Turn Right on **UNIVERSITY BLVD W/W UNIVERSITY BLVD** (0.2 miles)
- **Crawford Science Tower** will be Tan multi-story building on Right

Contact Information:

- Dan Johnson (djohns08@harris.com)
- Phone: 321-729-3686 Pager: 321-690-4108

ASME B31.3 Process Piping
April 7-10th, 2003
ASME Canaveral Section Professional Development Course

WHAT YOU WILL LEARN

The lack of commentary, or historical perspective, regarding the B31.3 Code requirements for process piping design and construction is an obstacle to the designer, manufacturer, fabricator, supplier, erector, examiner, inspector, and owner who wants to provide a safe and economical piping system. This intensive four-day course, through the use of hundreds of examples shown and personal experiences of the instructors demonstrates how the B31.3 Code has been correctly and incorrectly applied. This seminar explains the principal intentions of the Code and why the Code is not a handbook. Attendees come away from this seminar with a clear understanding of how piping systems fail and what the Code requires the designer, manufacturer, fabricator, supplier, erector, examiner, inspector and owner to do to prevent such failures.

The focus of the seminar is to enhance participants' understanding and application of the B31.3 Code. Instruction is further enhanced by in-class problem solving, directly applying the rules and equations of the B31.3 Code for specific design and operating conditions to illustrate correct applications.

WHO SHOULD ATTEND

Piping engineers and designers who need an understanding of the requirements for compliance and the trends of Code changes for piping design and analysis, fabrication, examination, and testing.

SPECIAL REQUIREMENTS

Bring the latest edition of the *ASME B31.3 Process Piping Codebook* as well as a calculator.

COURSE HIGHLIGHTS

- Piping code history and basic philosophy of piping design criteria
- Pressure design: wall thickness calculation; area replacement
- External loads design: flexibility; fatigue; stress intensification factors; combined loads (sustained wind, earthquake); cold spring
- Pipe support design: support types; assumptions; load combinations; variable supports; lugs and attachments
- Systems piping: pressure relief, piping; pipe and piping component limitation
- Materials, fabrication, examination, inspection and testing

ABOUT THE INSTRUCTORS

Glynn E. Woods, P.E., Course Director, is a consultant with experience in piping design, stress, supports, and failure analysis as well as piping component design, analysis and testing. For more than 20 years, he has been providing this expertise for both new and operating petrochemical and power plants using computer evaluations and field experience in arriving at safe, economical piping designs and solutions to piping problems. Mr. Woods is a member of ASME B31.3 Process Piping Committee and the ASME B31 Mechanical Design Committee.

Ronald W. Haupt, P.E., is a Consulting Piping Engineer and Founder of Pressure Piping Engineering Associates, Inc. He has over 40 years of professional experience in the design and analysis of industrial process and energy-related structures, equipment, piping, pipelines, and supports. Mr. Haupt is a member of the ASME B31 Pressure Piping Standards Committee, the B31.1 Power Piping Section Committee, B31.3 Process Piping Section Committee and other ASME national codes and standards committees.

This course will be conducted by either Glynn E. Woods or Ronald W. Haupt.

4 Days/2.8 CEUs/28 PDHs

\$1,195 ASME Member/ \$1,295 Non-Member

Call Scott Seigel @ 407-736-7839 or 1-800-843-2763 (1-800-THE-ASME) to Register.

Class Location: Cocoa Beach Hilton

DESIGN OF BOLTED FLANGE JOINTS

May 13, 2002

ASME Canaveral Section Professional Development Course

WHAT YOU WILL LEARN

The design and analysis of flanged joints are essential components for pressure containment. The purpose of this course is to provide a fundamental understanding of the design and behavior of bolted flange joints. You will learn the latest developments from the Pressure Vessel Research Council research on gasketed flange joints, as well as the new design rules being developed for the ASME Codes.

Upon completion of this course you will be able to:

- Identify ASME requirements and methodology for flange design
- Design and analyze flange joints for pressure and external loads in accordance with the latest ASME Codes and Standards
- Identify the parameters that can affect flange leakage
- Discuss fundamentals of flange and gasket behavior

WHO SHOULD ATTEND

Engineers involved in the design, construction or maintenance of pressurized equipment utilizing flanged joints for the petroleum, refining, chemical, power, and process industries

SPECIAL FEATURES

- Receive the textbook, *Gaskets and Gasketed Joints*, by John H. Bickford
- Computer analysis illustrating the behavior of flanged joints under mechanical and thermal loads
- Examples on troubleshooting field problems

COURSE HIGHLIGHTS

Codes addressing flange design: discuss how the various Code sections address the design of flange joints and the applicability of flange standards

- Vessels: ASME Section VIII, Div 1, Div 2; Section I; Section III
- Piping: ASME B31.3, B31.1, B31.4, B31.8

Flange standards: discuss the ASME flange standards, their basis, applicability and how they are used within the structure of the ASME Codes and Standards

- ASME B16.5
- ASME B16.47 (API, MSS)

Strength design methods

- Raised face flanges: ASME design methodology and basis

Flanges with metal-to-metal contact outside of the bolt circle: ASME design methodology and basis

- Flanges with full-face gaskets: published methods for design
- Design for external loads: discuss various methods of designing for external loads

Design for leakage

- PVRC method: background and basis of the PVRC research on flange design for leakage including ASME design methodology and basis
- New proposed code rules: overview of the new ASME design rules currently under development

Flange joint analysis

- Methods of flange joint analysis, interaction between the flange, bolts, and gasket
- Behavior of flange joints: apply principles discussed by the use of a computer program

Examples: troubleshooting field problems

ABOUT THE INSTRUCTOR

William Koves, Ph.D., P.E., is a Senior Engineering Fellow at UOP, a technology company. He is a member of numerous ASME and PVRC committees including ASME B31.3 Process Piping Design Task Group (Vice Chair), ASME Post Construction Subcommittee on Flaw Evaluation (Chair), ASME B31 Mechanical Design Committee, ASME Boiler and Pressure Vessel Subcommittee on Design Analysis, Pressure Vessel Research Council (PVRC) Vice Chair, PVRC Committee on Piping and Nozzles, PVRC Committee on Elevated Temperature Design (Chair), and PVRC Subcommittee on Shell Intersections (Chair).

Dr. Koves has over 30 years of experience in the design and analysis of equipment and structures including aircraft, nuclear reactors, and petrochemical equipment. His specialties include stress analysis, fracture, elevated temperature design, heat transfer, stability, vibration, fatigue, fluid mechanics, and mechanics of granular solids.

1 Days/0.75 CEUs

\$475.00 ASME Member/\$575.00 Non-Member

Contact Scott Seigel @ 407-736-7839 to Register or call 1-800-843-2763 (1-800-THE-ASME)

CRYOGENICS FUNDAMENTALS

June, 2003

ASME Canaveral Section Professional Development Course

This course reviews the development of the field of cryogenics along with a presentation of some of the present day low temperature applications. It will familiarize you with the behavior of common engineering materials as well as the behavior of commonly used cryogenic fluids. Illustrations of cryogenic liquefaction systems are featured as are, systems for the production of liquid hydrogen and liquid oxygen. This course will show how the components of air (and in particular, oxygen) may be separated to produce the almost pure liquids. In addition, some techniques which may be used to purify gases are presented.

Learn how to use ASME Code design methods for cryogenic fluid storage vessels (dewars) and piping systems. Review the development of cryogenics, this course gives you in-depth coverage of cryogenics using real world applications.

SPECIAL FEATURE

You will receive a copy of the textbook *Cryogenic Systems*, 2nd Ed., by Randall F. Barron. and comprehensive notes based on course content.

WHO SHOULD ATTEND

Mechanical and Chemical Engineers, who wish to receive an up-to-date overview of the various areas in cryogenic engineering.

COURSE HIGHLIGHTS

- **MATERIAL PROPERTIES AT CRYOGENIC TEMPERATURES**
The behavior of common engineering materials at low temperatures. Selection of proper material for various cryogenic uses Fluid Properties and Behavior of commonly-used cryogenic fluids.
- **GAS LIQUEFACTION SYSTEMS**
Cryogenic liquids production characteristics of various liquefaction systems including systems for the production of liquid hydrogen and liquid oxygen.
- **SEPARATION AND PURIFICATION SYSTEMS**
An examination of how the components of air (and in particular, oxygen) may be separated to produce the almost pure liquids. In addition, techniques used to purify gases are presented. Techniques for the separation of hydrogen are discussed.
- **CRYOGENIC REFRIGERATION SYSTEMS**
A review of the various refrigerators used to maintain low temperatures. some refrigerators used in very low temperature applications, such as cooling in particle accelerators, etc. are also presented.
- **MEASUREMENT SYSTEMS FOR LOW TEMPERATURES**
Techniques used to make measurements at low temperatures, including the measurement of temperature, mass flow rate, and liquid level in containers.
- **CRYOGENIC FLUID STORAGE AND TRANSPORT SYSTEMS**
Design methods used in ASME Code design of cryogenic fluid storage vessels (dewars) and cryogenic piping systems. Special problems, such as two-phase flow and transfer line cool down will be examined.
- **VACUUM TECHNOLOGY**
Examination of the systems used to produce the vacuums used in cryogenic systems. The design techniques for vacuum systems will be illustrated.

ABOUT THE INSTRUCTOR

Randall F. Barron is Professor Emeritus, Mechanical Engineering at Louisiana Tech University. Dr. Barron teaches at the undergraduate and graduate levels in the areas of Thermodynamics, Heat Transfer, Cryogenics, Solar Energy, Acoustics and Heat Exchanger Design. He has also conducted research in the areas of Cryogenics, Heat Transfer and Materials.

4 days/2.8 CEUs/28 PDHs

\$1175 ASME Member/\$1275 Non-Member

Contact Scott Seigel @407-736-7839 or call 1-800-843-2763 to Register.

Class Location: Cocoa Beach Hilton



**AMERICAN SOCIETY
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