



THE SUNCOAST IEEE SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

<http://ewh.ieee.org/r3/floridawc>

Volume 45 - No. 10

October 2002

Joint Section & PES/IAS Chapter Meeting Tour of "American Victory" Ship

Sponsored by PES/IAS



- Date/Time:** Wednesday, October 23, 2002, 6:00 PM
- Location:** Moored near the Florida Aquarium and cruise ship port on Channelside Drive
- Cost:** \$10 for members and their guest, \$20 for non-members (IEEE will donate all proceeds to the ship's restoration effort)
- Reservations:** On line at http://www.ewh.ieee.org/r3/floridawc/pes_titles.html
Or call Art Nordlinger 813-228-4308

This tour sold out very quickly last November, so we will offer it again for those who were unable to join us. Space is limited, so reserve early.

Victory class ships were cargo ships built late in World War II. They were manned by the Merchant Marine and defended by the Navy Armed Guard. They were larger and faster than the earlier Liberty class ships. This ship is currently being restored as an historical museum and will be able to take passengers on short cruises once restoration is completed. The ship is driven by a 6000 horsepower cross-compound steam turbine with dual reduction gears driving a single propeller. The electrical system is 600 kW, 120/240 volt direct current. All of the auxiliaries are either steam or DC powered.

This will be a special evening tour arranged especially for the IEEE. It will include the engine room, which is not part of the regular tour. As the ship is undergoing restoration, work areas may be dirty, so don't wear good clothes and be sure to wear non-skid shoes. Also, be aware that the passageways are narrow and the ladders (stairways) are very steep.

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Chair's Comment

By Quang Tang

We are extremely busy this month with four meetings. For those of you who need to complete the PDH requirement for your PE continuing education, the NESC seminar might be the last opportunity for the year.

Sections Congress 2002 is just around the corner. Several Executive Committee Members and I will be traveling to Washington DC this month for this event. We will be presenting our successful Teacher In-Service Program to other Sections' representatives around the country. We will also be with the planning committee for Sections Congress 2005 in Tampa.

Please join me and congratulate the 2003 Section Officers. Beginning January 2003, our section Treasurer John Conrad will step up and serve as Chair. Art Nordlinger, currently leads PES/IAS Chapter, will serve as Vice Chair. Jules Joslow will continue serving as Secretary. Ralph Painter, actively involved in Teacher In-Service Program, will serve as Treasurer. Congratulations gentlemen!

Section Officers Nominations

By Jim Beall j.beall@ieee.org

At the Section Executive meeting September 10, the Nominations & Award Committee announced its slate for 2003.

Chair – John Conrad
Secretary – Jules Joslow

Vice Chair – Art Nordlinger
Treasurer – Ralph Painter

As mentioned in last months newsletter the N&A Committee is always looking for members to fill the many jobs in the section.

Awards and Recognition

By Jim Beall j.beall@ieee.org

We need your help. The Florida West Coast Section, The Florida Council and Region 3, all part of IEEE have a series of similar awards. In fact a person nominated for the section level award could go on to be considered for the Florida Council Award and the Region 3 Award. Sometimes the nomination has been sent to all three organizations at the same time.

The awards are for Outstanding Engineer, Outstanding Engineering Educator and Outstanding Service. For details of the process please contact Jim Beall, j.beall@ieee.org. Please include a phone number. Suffice to say due dates are important. For the section and Florida Council the dates are November 1. For Region 3 the due date is December 1.

Distance Learning at Florida Gulf Coast University

Sponsored by Life Member Chapter

Date/Time: Tuesday, Oct 15, 2002 at 11:30 AM

Location: Florida Gulf Coast University (FGCU), near I-75 & Exit 20 (Alico Road) in Fort Myers. The meeting will be in Room 111, Broadcast Bldg.

Speaker: Ms. Nancy Edwards

RSVP: Jules Joslow, 800-274-2383 or jjoslowemi@aol.com
Deadline for lunch reservation is Oct. 11th.

Lunch: Gourmet Box Lunch \$10.00.

Abstract:

Distance Learning has been an important course delivery methodology for Florida Gulf Coast University. This presentation will discuss the Distance Learning program at FGCU, including findings from data gathered from the first five years, and future directions. There will also be a demonstration of video conferencing, and a tour of the FGCU Broadcast Building.

Biographical Sketch:

As an instructional designer, Nancy Edwards has been involved with assisting faculty in the development of distance learning programs at FGCU since 1998. In addition, she teaches "Web Design" as adjunct faculty for the College of Arts and Science. Prior to working at FGCU, she developed computer-assisted training materials in collaboration with the Florida Hospital Association and the Joint Commission on Accreditation of Hospitals Association. Nancy earned a B.S. degree from the University of San Francisco, and an M.S. degree from Nova Southeastern University. Her academic field is Educational Leadership with a specialty in Human Resource Development.

Directions:

Rt. 75 toward Ft. Meyers to ALICO ROAD exit (FGCU is on the sign and exit is south of Ft. Meyers). Go east about 1 mile and turn SOUTH on Ben Hill Griffin Rd. to entrance of FGCU on left. Attendant at Visitor Information Booth will tell you to park in LOT #7. Broadcast Building is the one with all the antennas on it. If possible we will try to arrange car pools from Tampa, Sarasota, and other points. Contact Jules Joslow to see what can be arranged.



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National Electrical Safety Code (NESC) Review Seminar

Presented Jointly by the PES and Florida West Coast Section

Speaker: Bob Moore, Senior Engineer, Distribution Engineering, Tampa Electric Company

Date: Friday, November 1, 2002

Time: Registration and Continental Breakfast - 8:00 A.M.
Seminar - 8:30 A.M. - 4:00 P.M.



Location: Engineering Technology Research Center (USF Tampa Campus)
3650 Spectrum Blvd., Suite 100, Tampa



Directions: <http://www.etc.com/ETDirections.cfm>

Cost: IEEE and ASME Members \$50, Non-members \$100, Student Members \$20, continental breakfast and lunch are included Reservation fee must be paid in advance to guarantee your spot and is non-refundable. Please use the form below for reservation. 6 Professional Development Hours (PDH) will be awarded for seminar completion Florida Exempt Provider EXP00015. Contact Arthur L. Nordlinger, PE at 813-508-2952 for more details.

6 PDH
Will Be Awarded

Topic:

The NESC is the IEEE publication of ANSI Standard C-2. It is the basis for construction standards for public or private electric supply, communications, railway, or similar utilities. Application of the NESC will result in a safe and reliable system. Understanding the NESC will allow personnel to work more efficiently and achieve decreased long-term costs. This class will review each section of the NESC and the latest changes to the code. Attendees should learn how to properly use the NESC to develop construction standards including clearances, grounding, and structure strength. Additionally, the organization and the revision process of the NESC will be covered.

Speaker:

Bob Moore has been employed at Tampa Electric for 30 years and is a Senior Engineer in the Distribution Engineering Department. He is a USF graduate electrical engineer. He is a member of the IEEE Working Group on the Lightning Performance of Distribution Lines, Southeastern Electric Exchange (SEE) NESC Section, Edison Electric Institute (EEI) Electric Light & Power (EL&P) Group, Hillsborough County Electrical Board of Adjustment, Appeals, & Examiners, and International Association Electrical Inspectors (IAEI) Board of Directors. He is a principal member of Code Making Panel 2 for the National Electrical Code (NEC). He is chairman of the SEE NEC Section. He is also principal member on Code Making Panels for National Fire Protection Association (NFPA) 501, 501A and 225.

<p>Return this Reservation Form to Nordlinger, 1480 Gulf Blvd., Apt. 906, Clearwater, FL 33767 National Electrical Safety Code (NESC) Review Seminar – Friday, November 1, 2002</p>		
<i>Name</i>	<i>Email</i>	
<i>Address</i>		
<i>City</i>	<i>State</i>	<i>Zip Code</i>
<i>Work Phone ()</i>		<i>Home Phone ()</i>
<i>FL P.E. License Number</i>		<i>Amount Enclosed \$</i> <i>(Check payable to IEEE-FWCS)</i>

Review of Phase Locked Loops, Phase Noise, and Fractional N

MTT/AP/ED Meeting



Date: Tuesday, October 8, 2002

Time: 6:00 PM

Speaker: Gerald Miller, TRAK Microwave Corporation, Tampa, FL

ABSTRACT:

Anyone familiar with the communications industry understands the importance of Phase Locked Loops (PLL) for applications such as carrier recovery from satellite transmissions, clock recovery from digital data signals, analog frequency and phase modulation and demodulation, and frequency synthesis for receiver tuning. To support the understanding of PLL applications, a quick overview of PLL theory will be presented. A review of phase noise in PLLs, the elements that cause the noise, and how that noise is mapped into the output spectrum will also be presented. Fractional-N architecture will be presented as a possible alternative to the traditional loop, including a review of how to design a Fractional-N PLL.

BIOGRAPHY:

Mr. Gerald Miller is a senior engineer for TRAK Microwave Corp where he directs the design of microwave-frequency synthesizers for military and commercial communications systems since August 1985. Mr. Miller received his BSEE degree in 1983 and his MSEE in 1993, both from USF.

LOCATION: TRAK Microwave Corporation
4726 Eisenhower Blvd., Tampa, FL
For driving directions, contact Shawn O'Brien

PLEASE RSVP: Leave name & country of citizenship with Shawn O'Brien at (727) 302-3493. Email: shawn_k_obrien@raytheon.com. *Bring a guest; non-members welcome!*

Volunteers Needed

G.WIZ, Gulfcoast Wonder and Imagination Zone, a Science and Technology Center located on Sarasota's Bay front, needs volunteers. We welcome anyone willing to lend a hand as well as scientists and engineers with skills in teaching, demonstrating exhibits or programs, as well as handy folks who might offer repair and maintenance of our interactive exhibits. Hours are flexible, the environment friendly and fun. Contact Ingrid Peterson, Volunteer Coordinator, at volunteer@gwiz.org or (941) 309-GWIZ (4949) ext. 106 or visit our website for details (www.gwiz.org).



Systems Engineering Analysis: Taming the Vortex

A One Day Tutorial, Saturday, October 26, 2002

Instructor: Mr. Raymond W. Jorgensen

This tutorial covers the application of system engineering development methodology that encourages and facilitates product family engineering. It explores many of the concepts of true “sharing” of engineering definition between projects, with particular emphasis on system engineering analysis disciplines and how these disciplines have been tailored to specifically address product family engineering. Topics include: Capturing Originating Requirements, Defining the Operational Concept and Use Cases, Defining System Requirements, Architecting the System Design, and Development for Product Families.

About the Instructor:

Mr. Raymond W. Jorgensen is an avionic systems engineer working on Flight Deck applications that are used across a diverse community of aerospace customers. He has been working toward an integrated system engineering and development environment that enables product family engineering and reuse of intellectual property. He has been actively involved in system engineering process improvement for many years, and currently volunteers his time with the INCOSE Requirements Working Group. He has been involved in systems engineering activities for 14 years, applying his skills towards continual systems engineering process improvement and project leadership. He received a B.S. in Electrical Engineering from Michigan Technological University and a Master of Systems Engineering from Iowa State University

Time: Registration starts at 8:30 a.m., tutorial begins at 9:00 a.m.

Place: University of South Florida, St. Petersburg, Florida campus on Bayboro Harbor

Cost: Space is limited. Register by October 7, 2002 for early registration price break.

INCOSE Member: \$65 early, \$75 after October 7

Non-Member: \$75 early, \$90 after October 7

Student (full time): \$35 early, \$50 after October 7

Membership Discount: Attendees can join INCOSE Central Florida as new members for \$20. Full Time students join free. Membership begins December 2002.

For more information, contact Ben Berauer 727-302-2693 Ben_F_Berauer@raytheon.com or visit the INCOSE Central Florida Chapter web site at www.cfincose.shorturl.com.

----- Cut here -----

Enrollment Form for System Engineering Analysis: Taming the Vortex (Submit with Payment).
If joining INCOSE, complete membership application from www.incose.org and add \$20.

Name: _____

Company: _____ Position: _____

Mailing Address: _____

Day Phone: _____ Fax: _____

Email Address: _____ US Citizenship: _____

Mail completed form and check made out to “**INCOSE Central Florida Chapter**” to:

Wes Calhoun, 6822 22nd Avenue N #207, St. Petersburg, FL 33710

Programmable Logic Users Group Presents

PL-UG Fest 2002

Presented by the Computer Society Chapter

FREE ADMISSION, BREAKFAST AND LUNCH

Tuesday, October 29th, 8:00am thru 5:00pm

Holiday Inn, Clearwater, FL

3535 Ulmerton Road

The Programmable Logic Users Group (PL-UG) and the Florida West Coast IEEE Computer Society Chapter are jointly holding a day of presentations for designers and users of FPGA, CPLD and other programmable devices. Applications engineers will be presenting information on multiprotocol gigabit SERDES cores, hard processor cores, soft processor cores, protecting your FPGA designs, and designing and building testbenches using devices from Xilinx, Altera, Lattice, Actel and other manufacturers. Also, presentations on the latest tools for FPGA and CPLD development including interactive timing closure and physical optimization, and hardware/software co-verification in platform FPGAs and CPLDs from Mentor, Synplicity and others will be given.

- ❑ *High Speed Serial IOs*
- ❑ *Embedded Processors*
- ❑ *Hardware/Software Co-verification*
- ❑ *VHDL Testbenches*
- ❑ *FPGA Timing Closure*
- ❑ *Incremental Synthesis*
- ❑ *Designing with CPLDs*
- ❑ *FPGA Design Security*

See www.pl-ug.org for details and registration, or contact Steve Belvin, PL-UG President, at 727-812-5555, ext. 15.

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Brain Teaser Challenge Column

By Butch Shadwell

September BTC Solution

Floyd had a great party in spite of the reduced balloon sizes. As it turns out, 33 feet of water is about one atmosphere of pressure, so at that depth the pressure on the balloon has doubled. If you will recall the ideal gas law - $PV=nRT$. In our scenario all of the righthand terms are constant so we can write our equation as $P_1V_1=P_2V_2$. With this relationship defined, it is obvious that as the pressure is doubled the volume must be halved. So, the subsurface volume of the balloons is 0.5 cubic feet. Using the equation for the volume of a sphere ($\frac{4}{3}\pi r^3$) we can calculate the diameter of the balloon at the surface as 14.9". Repeating the calculation for 0.5 cu ft we get 11.8" for a difference of 3.1". But I bet you already knew that.

October BTC

Tony had been dancing since before he could walk. Some even referred to him as a dancing fool, but just not to his face. Tony may have been dealt a few cards short of a full deck, but he wouldn't have anyone pointing it out to him.

Besides dancing, Tony also liked scary sci-fi movies like "Alien". In the trailers for that movie they used to say that "in space, no one can hear you scream". Which of course is true. Tony was fond of pointing out to folks that if they were watching him tap dance in space they wouldn't be able to hear him, unless of course he was actually tap dancing on their heads. It should go without saying that Tony, having these interests in scary sci-fi movies and dancing, would also be a bit of a pyromaniac. (I'm using some poetic license here. Give me a break.) So while discussing his interests in dance, fire and outer space, it naturally came up what would happen if a room with a smoke detector were suddenly vented into outer space? In this scenario, there is no smoke in the room, just normal air at STP, prior to the venting event. When the atmosphere is suddenly vented would the smoke detector go off or not, regardless of whether anyone could hear it? For this problem lets say it is an ionization type smoke detector (not optical) and the humidity is zero. For extra credit, what if it was an optical smoke detector?

Questions or comments to the Brain Teaser Challenge, please contact Butch Shadwell at 904-223-4465 (voice), 904-223-4510 (fax), b.shadwell@ieee.org (email), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. <http://www.se.mediaone.net/~butchs/>

Drexel University joins IEEE Education Partners Program

Lynn Murison, Outreach Coordinator, IEEE Educational Activities, www.ieee.org/organizations/eab/

Drexel University, Philadelphia's technological university, has become the newest IEEE Education Partner. IEEE members can now continue their life long learning with selected graduate-level, credit courses provided online by Drexel at a 10% discount. Current online programs offered to IEEE members through Drexel e-Learning, the university's online subsidiary, include Masters of Science in Information Science/Systems and Management and Certificate Programs. Tom Samph, President of Drexel e-Learning said: "This unique collaboration with IEEE reflects our joint commitment to offering educational opportunities to engineering professionals; providing them the skills and knowledge needed to advance in today's technology-driven environment."

In 2000 Drexel became the first major U.S. university to operate a fully wireless CyberCampus. The e-Learning program draws on the Drexel's 110-year tradition in preparing engineers for successful careers. With 11 colleges and schools, 175 degree programs and approximately 16,000 students, Drexel is one of America's leading private, non-profit academic and research institutions.

Applications, course prerequisites, and systems requirements are detailed at the Drexel-supplied website for IEEE members. You must use your IEEE member number to receive the 10% discount.

Enter through the IEEE Educational Partners, <http://www.ieee.org/EduPartners>, and choose Drexel from the university partners. To learn more about the IEEE Education Partners Program contact Sasha Eydlin, IEEE Educational Activities, s.eydlin@ieee.org.

October 2002 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 <i>EXCOM at TECO Plaza 5:30pm-7:30pm</i>	2	3	4	5
6	7	8 <i>MTT/AP/ED Meeting at 6pm TRAK Microwave Corporation, Tampa</i>	9	10	11	12
13	14	15 <i>Life Member Chapter Meeting At FGCU 11:30am</i>	16	17	18	19
20	21	22	23 <i>PES/IAS Tour of American Victory Ship 6:00pm</i>	24	25	26 <i>INCOSE One Day Tutorial Taming the Vortex, 8:30am</i>
27	28	29 <i>PL-UG FEST 2002 at Holiday Inn, Clearwater, 8:00am-5:00pm</i>	30	31	11/1 <i>PES/IAS NESC Review Seminar 8:00am – 4:00pm</i>	

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