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THE SUNCOAST SIGNAL

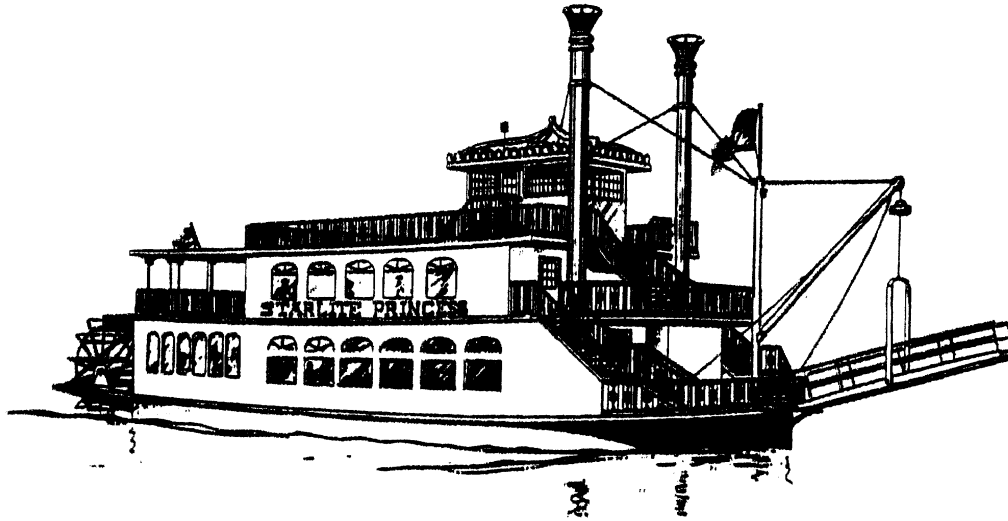
THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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

Volume 43 - No. 1

January 2000

IEEE-FWCS Section Awards and Recognition Banquet Saturday, January 22, 2000



Starlite Princess Riverboat

The Florida West Coast Section is pleased to be able to host our January 22, 2000 meeting on the gracious Starlite Princess Riverboat. We will honor area high school math and science teachers, welcome our incoming officers, and thank our outgoing officers for the volunteer work they performed for us in 1999. We will also be presenting the IEEE Millennium Awards to a number of our Section members. Just as important, we will enjoy the friendships we have with our fellow IEEE members. Numerous door prizes will include electronic construction kits.

The fully enclosed Princess cruises the smooth, sheltered waters of the inter-coastal waterway, and loads at the Corey Causeway in South Pasadena at 6:30 PM, leaving the dock at 7:00 PM. We will listen and dance to live music, and have a choice of seven entrees, freshly cooked on the Princess. The cost for this evening is a modest \$20.00 for each IEEE member and guest. For more information on the Princess and directions to the Corey Causeway, check their web site at www.starlitecruises.com. Please mail the reservation form on page 4 to Ms. Janice Ladner, Seminole Electric Cooperative, P. O. Box 272000, Tampa, Florida 33688-2000 by Tuesday, January 18. For any questions, call her at (813)963-0994 x1235.

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Chair's Comment

by Al Rosenheck

Yes, I am back again for my second year as your FWCS chair. Thank you for your vote of confidence. Let me take this opportunity to encourage you to become active participants in our IEEE section in the year ahead. Decide to attend our technical and professional meetings in 2000. Better yet, consider taking on a section leadership role. Come to our executive committee meeting as an observer and meet the section officers and explore the opportunities.

I'm looking forward to seeing you on January 22 when you join your friends and colleagues at our awards banquet aboard the Starlite Princess. And I could not write these comments for our January issue without wishing all of you the Very Best in the New Year!

Entering the new millennium, we look back over the past century — assessing the changes that have taken place between 1900 and 2000. I myself have been thinking about the major advances that have taken place in personal computing. Today personal computing is dominated by digital computers. It is easy to forget that until the early 1970s, when the multifunction electronic calculators were introduced, the slide rule was the dominant personal computer and universally recognized as an engineer's tool. Yet today most new engineering graduates have never used or seen a slide rule.

The slide rule has a long history, dating from its invention by William Oughtred in the 1600s. A large cylindrical slide rule with improved accuracy was invented by Thacher in 1881 and continued production well into the 1900s. By 1900, improved accuracy and speed were being achieved with the introduction of mechanical calculating devices such as the comptometer. In the 1950s the Curta mechanical calculator was introduced as a pocket calculator. By the early 1970s mechanical calculators along with the slide rule became obsolete. So while we may visit a museum to be amazed and amused by these crude scientific instruments, I wonder what the future has in store for us. Will today's PC's be our dinosaurs of tomorrow?

Students' Corner

USF IEEE Student Branch Chapter

by Brian Zilka



Happy New Millennium, I hope everyone had a joyous holiday season. This past month we created a Program Director position and Mike Mills was elected to serve this position. We would like to welcome him aboard, his assistance will be gratefully appreciated. We were glad to see the turn out at the end of the semester blow out, we co-sponsored with ECC and ASCE. We are going to try to make it a new tradition. It is nice to get together for something other than study sessions where we can all kick back and relax.

January marks the beginning of a New Year and a new semester. We have confirmed speakers from Intersil, Raytheon and Harris Corporation for this next semester. We invite you to follow our progress on our web site at <http://org.eng.usf.edu/ieee-ee/>.

Thank you for all your support.

Year 2000 Officers

by John Twitchell

The Florida West Coast Section held its annual officer election at the December 7, 1999, meeting, held jointly with the PES. Our officers for the year 2000 are:

Chair - Al Rosenheck
Vice Chair - Quang Tang
Secretary - Jules Joslow
Treasurer - John Conrad

John Conrad replaces Betty Fritz, who has skillfully and faithfully served as Section Treasure for a number of years. Thank you Betty, for your service, and congratulations to our Y2k officers!

The PES/IAS/ Chapter held elections at the same meeting, and James Reed will serve as Chair, Paul Leal will serve as Vice Chair, and Arthur C. Simplina will be our Secretary / Treasure for Y2k.

IEEE Life Members

by Dr. Robert Ashley

The Notices in the Suncoast Signal for October and November brought eight E-mail expressions of interest. Five members of the FWCS Executive Committee are also interested. Region 3 Life Member coordinator Dave McLaren has encouraged formation of a Life Member Chapter and agreed to arrange supporting funds.

Our planning is to have an informal get-together next March. A study of the address of the 768 FWCS Life Members shows that a nearly central location is near the southern junction of I-275 and I-75. To help the planning, please E-mail Bob Ashley, j.ashley@ieee.org, your preference for the day of the week and the time of day.

One difficulty in doing the planning is that less than 20% of the life members have listed their own E-mail addresses in the main IEEE database. One way to kill two birds with one stone here is to apply for an IEEE E-mail alias. (Look in the Institute for how to do this.)

Joint PE/IA & ASME January Meeting

Don't Miss This Special Event

Thermal Management of Electronic Equipment

DATE: Wednesday, January 12, 2000
TIME: 6pm Social, 7pm Dinner, 8pm Speaker
LOCATION: Radisson Bay Harbor Inn,
7700 W. Courtney Campbell Causeway, Tampa
**RESERVATIONS
REQUIRED:** Contact Helen Prince at 727-734-5546
Bring a guest; non-members welcome!
SPEAKER: Dr. Kaveh Azar, Lucent Technologies.
COST: \$18 Per Person

Dr. Azar is a leader in solving thermal problems in electronic/electrical equipment and has published in the field of computational fluid dynamics. Dr. Azar will speak on issues in the thermal management of electronic and electrical equipment as well as the role of engineers in high tech companies.

Future Meeting with ASME - February 9, 2000 - Moffitt Cancer Center & Research Institute - Tour of Radiology. - Mark Your Calendar NOW!

FWCS Member James Howard Elected Director of Region 3

The final results came in for the IEEE Region 3 elections last month and our own Jim Howard won.

Jim received BSEE degree from the University of South Florida. He is currently a Supervisor/Senior Engineer in the Energy Delivery System Reliability Department at Tampa Electric Company. Jim has also held positions in Energy Delivery: Distribution Engineering Department, as a staff engineer, and at South Hillsborough Operations Center.



As Region 3 Director-Elect Jim will be preparing to represent us on the IEEE Assembly and the Regional Activities Board during his term as Director (2002-2003). In the position as Director, he will have a say in the future of IEEE, as well as leading the entire Region 3. Please join all of us on the Florida West Coast Executive Committee in wishing Jim all the best in his new endeavors. Jim has proven himself an excellent leader and supporter of the Engineering Profession, and has both our support and admiration for his tireless volunteer efforts. Congratulations, Jim.

New Senior Member Congratulations to

Mark McKeage, Florida Power Corporation

MTT/AP/ED Chapter January Meeting

"RF Design Tools for Wired and Wireless Communication System Design"

DATE/TIME:	Tuesday, January 11, 2000 6:00 PM
-------------------	-----------------------------------

LOCATION: Raytheon Systems Company St. Petersburg, 1501 72nd Street North,
St. Petersburg **Gill Robb Conference Room**

RESERVATIONS: Leave name & country of citizenship with Greg Bonaguide at (727) 302-3367. Join us for dinner after the meeting. Bring a guest; non-members welcome!

SPEAKER: Dr. Zoltan Cendes, Ansoft Corporation, Pittsburgh, PA

ABSTRACT:

The internet, pagers, cell phones - the data rates of both wired and wireless communication systems are constantly increasing. New types of high-frequency simulation tools are being developed to meet the associated design challenge. Since signals at high frequencies are primarily electromagnetic in nature, the key requirement is the seamless integration of electromagnetic simulation techniques within the wider context of circuit and system level simulation. This talk addresses the simulation technologies available today and those being currently being developed to make electromagnetic simulation easy and to incorporate electromagnetic effects within circuit and system simulators.

BIOGRAPHY:

Dr. Zoltan J. Cendes is Founder and Chairman of Ansoft Corporation, Pittsburgh, PA, where he is responsible for managing the company's product and technology direction. He is also an Adjunct Professor of Electrical and Computer Engineering at Carnegie Mellon University, Pittsburgh, PA, where he previously served as Professor and as Associate Professor. Prior to joining the faculty of Carnegie Mellon, Dr. Cendes was an Associate Professor of Electrical Engineering at McGill University, Montreal. His previous experience includes six years with the General Electric Corporation, first in the Large Steam-Turbine Generator Division and then in the Corporate Research and Development Center. Dr. Cendes received his doctorate and master's degrees in Electrical Engineering from McGill University.

RESERVATIONS:

Leave name, number and country of origin with Greg Bonaguide at: Phone: 727.302.3367 or e-mail: gmba@eci.esys.com

DIRECTIONS:

From Tampa, take I-75 South to I-275 south across Tampa Bay to Exit 12 (22nd Ave N.). From Sarasota, take I-75 North to I-275 north over the Sunshine Skyway Bridge to Exit 12 (22nd Ave N.). Turn west on 22nd Ave. past Tyrone Mall to 72nd Street N. Turn left at the traffic light to the Engineering building. Park in the lot farthest south of complex. The meeting will be held in the GILL ROBB WILSON CONFERENCE ROOM - 2ND FLOOR – ENGINEERING.

Mail-in Reservation Form IEEE-FWCS Section Awards and Recognition Banquet Saturday, January 22, 2000 6:30PM		
Name		
Company		
Address		
City	State	Zip Code
Work Phone		Home Phone
Number of Tickets @ \$20 each		Total Amount Enclosed \$
<p>Please mail complete form and check made out to IEEE-FWCS to: Ms. Janice Ladner, Seminole Electric Cooperative, Inc. P.O. Box 272000, Tampa, FL 33688-2000</p>		

2000 ENGINEERS WEEK BANQUET

Date/Time: Friday, February 18, 2000
6:30PM Social, 7:30PM Dinner, 9:00PM Program

Location: Belleview Biltmore, 25 Belleview Boulevard, Clearwater

Speakers: Juan Guerra, P.E., Guerra Development
Topic: "Pride in Engineering"

Joan Deming, Lee Hutchinson, Susan White
Archeologist Consultants, Inc., Sarasota, Florida
Topic: "Skeletons in Our Closets".

Dancing: A DJ will be available from the beginning of social hour to midnight bringing us music and dancing

Door Prize: Given through out the evening

Cost: \$40.00 per person

Each February, National Engineers Week unites engineers and the public in a celebration of innovation and technology, National Engineers Week increases public awareness of engineering's contributions to our quality of life.

The local Engineers Week Committee is pleased to announce that its annual Engineers Week Banquet will be held on Friday, February 18, 2000, at the Belleview Biltmore Hotel in Clearwater. This event brings engineers of various disciplines together to share an evening of fellowship, fine dining, and recognition of individual achievement. Local engineering societies will bestow student Engineer of the Year Awards in their respective disciplines. The 1999 Engineer of the Year Award will also be presented. This event will be moderated by a local radio or television personality. Mr. Juan Guerra from Guerra Development will provide a presentation on "Pride in Engineering". Entertainment for the evening will be provided by a local DJ. Participating Societies are AIChE, AFE, ASCE, ASHE, ASHRAE, ASME, ASQ, ASSE, AQP, CSI, FES, NSBE, IEEE, SAME, SME, SOLE, Florida Surveyors and Mappers, and USF College of Engineering.

Tickets are \$40.00 per person, and must be purchased in advance. Ten seat tables are available for corporate reservations. Please use the mail-in reservation form below, or call Quang Tang at (813) 963-0994 for more information.

Return this Reservation Form to Quang Tang, P.O. Box 272000, Tampa, FL 33688-2000 2000 Engineers Week Banquet – Friday, February 18, 2000				
Name				
Address				
City		State		Zip Code
Work Phone			Home Phone	
Number of Tickets @ \$40 each			Total Amount Enclosed \$	
Dinner Choice	Vegetarian	Chicken Wellington	Mahi Mahi	Prime Rib

R&D Consultant Wanted

Small Clearwater electronics manufacturer seeks Electrical Engineers (EE) to help modify existing products and work on new product development.

Analog and digital experience required. Strong hardware skills important - we have an excellent firmware engineer. Experience with **Motorola MC68HC705C8** processor helpful.

Please Call Clayton Burton at (727) 556-2682

FOR SALE

- Diazo 3000 dry ammonia blueprint machine - \$250
- Summagraphics Summa Grid IV digitizer, 36x48 board - \$1,200/OBO
- Two Summagraphics Summa Sketch Plus digitizer, 12x12 board, 4 button and 16 button - \$120 each
- 36x48 five drawer flat drawing file - \$386.55

Call for details.

Hahn Engineering
Charles Hahn
(813) 831-8599

Brain Teaser Challenge Column

by Butch Shadwell

December BTC Solution

The challenge last month was to identify the configuration using the least number of 1Meg resistors with a .1uF capacitor, that would charge the capacitor from 0v to 2v in 80 mS with a supply voltage of 5v. Although there were a number attempts, I received only one answer that I considered correct as it used only two 1Meg resistors. What I had hoped you readers would pickup on was that by putting two resistors in series across the supply, you could create a 2.5v supply with a source impedance of 500,000 ohms. This is, of course, the Thevenin Equivalent. If you apply these values to the anti-log function that describes the time to charge a capacitor to a voltage of 2v, you will find it takes 80mS. Sometimes the optimal circuit configuration is not immediately apparent. As you study and do more designs, you discover new ways to "de-cutis the feline".

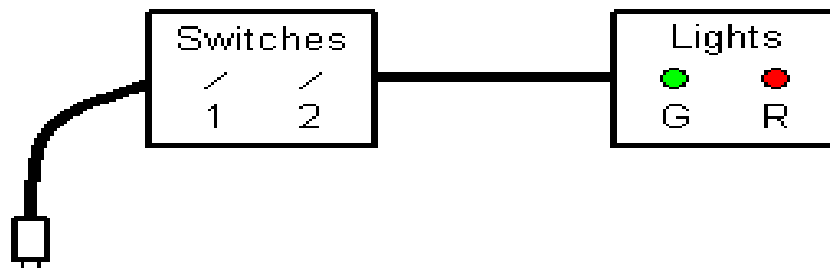
January BTC

The following was BTC submitted by a reader, James R. Kannard. I hope you find it interesting. If you don't, then you'll have to write a better one yourself. I am happy to use submissions by readers, though I do take some editorial license.

Andrew, an Electrical Engineering graduate student, wants to devise a method for letting his roommates know if the dishes in the dishwasher are clean or dirty. Of course, he doesn't want to do something simple like hanging a sign that says clean or dirty. That would not challenge his mind, nor would it allow him to impress his roommates, who are also EE graduate students. So, Andrew decides to build a box to set on the countertop that has two lights on it. He decides that using batteries would not work, as it would require him to buy new batteries every so often, and he is a college student with limited resources. So he decides to use 120VAC as his power source (electricity is conveniently included in the rent). To further lower the cost of his endeavor, Andrew digs through his old undergraduate projects for parts (which might have included various semiconductor devices -ed.). He manages to find a small plastic box that has two 120-volt incandescent light bulb sockets with colored lenses mounted on it. Each socket has a good bulb in it, and the lenses are red and green (green for clean, red for dirty). He also finds a second box that has two SPST switches mounted on it and a short length of 2-conductor wire with a 120 volt 15A plug on one end. He finds several short lengths of 2-conductor wire but nothing with three or more conductors. After thinking about it for a while, Andrew rewires the internal connections in both boxes and then connects the two boxes together using only one piece of the 2-conductor wire. When he plugs the plug into his wall outlet, he can turn the green light on or off using switch #1 and he can turn the red light on or off using switch #2. (See the figure below for a simple drawing of his finished device.)

How did he do it? (Keep in mind that there are only two wires running between the boxes.)

Reply with the IEEE Florida West Coast Section Suncoast Signal reference to Butch Shadwell by the 20th at (904) 223-4465 (voice), (904) 223-4510 (fax), b.shadwell@ieee.org , 3308 Queen Palm Dr., Jacksonville, FL 32250-2328. (<http://www.ccse.net/~butchs/>). Only the names of correct respondents are mentioned in the solution column on the next Signal.





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2000 Review Seminars For PE Electrical and EIT/FE April 14 & 15 Examinations

Review seminars for the PE (Electrical) and Engineer In Training / Fundamentals of Engineering (EIT/FE) exams will begin:

Tuesday, Jan. 11 for the EIT/FE Exam

Thursday, Jan. 13 for the EE Exam

Seminars are conducted from 7-10 P.M. (Tues or Thurs) for ten weeks. The registration fee is \$200 and includes text. The seminars will tentatively be held at the University of South Florida Bayboro campus.

To register, contact: Alan M. Keith, P.E., PO Box 14042, (EC51), St Petersburg, Florida 33733.

Alan.M.Keith@fpc.com

Phone (727) 384-7937, FAX (727) 384-7994

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January 2000 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 EXCOM Meeting TECO Data Center 6:00 PM	5	6	7	8
9	10	11 MTT/AP/ED Chapter Meeting Raytheon 6:00 PM	12 Joint PE/IA w/ ASME at Radisson Bay Harbor Inn 6:00 PM	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

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