



# THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

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

Volume 43 - No. 11

November 2000

## November Joint Meeting

Section/Computer Society/Aerospace Electronics Systems/Signal Processing & Communications Societies join forces to bring you the amazing presentation

## Choreographed Fire in the Sky

**Date/Time:** Wednesday, November 15, 2000  
Dinner 6:00 p.m. – 7:15 p.m.  
Dutch Treat, network with your peers!  
Spaghetti Warehouse, Ybor Square  
Due East of TECO Data Center, Ybor City

**Presentation:** 7:30 p.m. – 8:30 p.m.  
TECO Data Center, 1898 Nick Nuccio Pkwy  
(Ybor City at 8th Ave, Tampa)

**Reservations:** Required for planning purposes only  
call 727-669-3068 or  
Email [rbeatie@scientech.com](mailto:rbeatie@scientech.com)  
Non-members and guests are always welcome to attend!



### Abstract:

Major Firework displays have come a long way from the manually hand-fired shows of the past. Today's major fireworks displays, like the 4th of July in New York City and Washington, the opening ceremonies for the 2000 Olympics in Sydney, and the Kentucky Derby's Thunder of Louisville (largest show in the US) are choreographed to music and fired by multiple computers linked to a central time reference and synchronized to a fraction of a second. The process of planning these large choreographed shows and the hardware and software used to produce them will be discussed using illustrations, diagrams, video tape footage from actual shows, and demonstrations of actual hardware and software. Also included will be discussions of design challenges faced by the design team in developing the custom hardware and software used in the harsh environment of a fireworks site.

### Speaker:

Jeff Young is one of the principles of Pyrotechnic Management, Inc. manufacture of the FireOne Shooting System used for major fireworks displays through out Europe, the United States, Canada, the far east and Australia. He received his B.S. degree in Electrical Engineering from the Pennsylvania State University in 1976 and has worked as both a hardware design engineer and systems engineer with the Raytheon Company. He has traveled through out the U.S., Canada, and Europe consulting on major shows and international fireworks competitions. As a member of the design team at Pyrotechnic Management he continues to work on enhancements to the current products and development of future products.

**2000 IEEE EXECUTIVE COMMITTEE  
FLORIDA WEST COAST SECTION**

CHAIRMAN: Albert D. Rosenheck  
Consultant (941) 395-2117  
[rosenheck@aol.com](mailto:rosenheck@aol.com)

VICE CHAIRMAN: Quang Tang  
Seminole Electric (813) 739-1222  
[q.tang@ieee.org](mailto:q.tang@ieee.org)

SECRETARY: Jules Joslow  
ElectroMark, Inc. (800) 274-2383  
[jjoslowemi@aol.com](mailto:jjoslowemi@aol.com)

TREASURER: John Conrad  
Windsor Engineering, Inc. (813) 926-4004  
[john.conrad@ieee.org](mailto:john.conrad@ieee.org)

SIGNAL EDITOR: Quang Tang  
Seminole Electric (813) 739-1222  
[q.tang@ieee.org](mailto:q.tang@ieee.org)

AWARDS: John Twitchell, PE  
Seminole Electric (813) 739-1234  
[j.twitchell@ieee.org](mailto:j.twitchell@ieee.org)

BYLAWS: Richard Beatie, PE  
Consultant (727) 669-3068  
[r.beatie@ieee.org](mailto:r.beatie@ieee.org)

EDUCATION: Dr. Rudolf E. Henning, PE  
University of South Florida (813) 974-4782  
[henning@eng.usf.edu](mailto:henning@eng.usf.edu)

PACE: Mark D. McKeage, PE  
Florida Power Corp. (727) 826-4393  
[mark.d.mckeage@fpc.com](mailto:mark.d.mckeage@fpc.com)

MEMBERSHIP: John Conrad  
Windsor Engineering, Inc. (813) 926-4004  
[john.conrad@ieee.org](mailto:john.conrad@ieee.org)

STUDENT BRANCH CO-ADVISORS:  
Dr. Paris Wiley, USF (813) 974-4743  
[wiley@eng.usf.edu](mailto:wiley@eng.usf.edu)  
Dr. Worth Henley, USF (813) 974-2689  
[henley@eng.usf.edu](mailto:henley@eng.usf.edu)

STUDENT BRANCH MENTOR: Jim Howard  
Tampa Electric Co. (813) 630-6233  
[j.howard@ieee.org](mailto:j.howard@ieee.org)

STUDENT BRANCH CHAPTERS: (813) 974-4776  
Daniel Faria - [dfaria@eng.usf.edu](mailto:dfaria@eng.usf.edu)  
Steven Smith - [steven.smith@computer.org](mailto:steven.smith@computer.org)

PES/IAS CHAPTER: James Reed, PE  
(813) 654-8331  
[jamesreed@ieee.org](mailto:jamesreed@ieee.org)

MTT/AP/ED CHAPTER: Greg M. Bonaguide  
Raytheon Systems Co. (727) 302-3367  
[g.bonaguide@ieee.org](mailto:g.bonaguide@ieee.org)

COMP/AESS CHAPTER: Richard Beatie, PE  
Consultant (727) 669-3068  
[r.beatie@ieee.org](mailto:r.beatie@ieee.org)

SP/COMM CHAPTER: Joe K. Winner  
Raytheon Systems Co. (727) 302-3162  
[jkwb@eci.esvs.com](mailto:jkwb@eci.esvs.com)

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

WEB MASTER: Greg M. Bonaguide & Joey Duvall  
[g.bonaguide@ieee.org](mailto:g.bonaguide@ieee.org)  
[j.duvall@ieee.org](mailto:j.duvall@ieee.org)

THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied. All material for THE SUNCOAST SIGNAL is due by the Friday following the 1st Thursday of the month preceding the issue month. Address all correspondence to:

**Quang Tang - Seminole Electric Cooperative, Inc.**  
**P.O. Box 272000, Tampa, Florida 33688-2000**  
**Voice: (813) 739-1222 Fax: (813) 739-1344**  
**E-MAIL: [q.tang@ieee.org](mailto:q.tang@ieee.org)**  
**The Signal, Copyright 2000**

## Chair's Comment

by Al Rosenheck

On behalf of the IEEE Florida West Coast Section, I would like to welcome the attendees to the "IEEE 15-18 November 2000 Organizational Units Series" being held this year at the Hyatt Regency Westshore, in Tampa. This prestigious series, convening three times a year, is comprised of the meetings of our IEEE boards, including the IEEE Regional Activities Board, IEEE USA, Technical Activities Board, IEEE Publications Board, and the IEEE Educational Activities Board. In addition, the various board committees will conduct business and policy meetings to finalize the 2001 budgets, approve the year 2000 Award Recipients, and to plan the 2001 activities and programs.

Much effort has gone into planning this important Organizational Series and much will be accomplished here in a short time. We trust the organizers' choice of Tampa as the November meeting venue will please all. Our Florida West Coast Section extends a warm welcome to you.

---

## FIRST Volunteers For Students

FIRST is an acronym that stands for "For Inspiration and Recognition of Science and Technology". You can help students have fun learning what it means to be an engineer by volunteering to coach a FIRST Robotics Team or Lego League. Engineers are needed as coaches and mentors for children, judges for competitions, and support as technical experts for teachers. Don't delay! Many schools need engineers now in order to start their projects. The IEEE is a technical co-sponsor of FIRST.

Find out more about FIRST and other volunteering opportunities at the Educational Activities Pre-college web page, <http://www.ieee.org/organizations/eab/precollege/>. For information on where you can help, contact Lynn Murison at [lmurison@ieee.org](mailto:lmurison@ieee.org).

---

## Students' Corner

by Daniel Faria

This past month we hosted two meetings. First one with TECO on Oct. 4<sup>th</sup> and the second meeting with JDS Uniphase on Oct. 23<sup>rd</sup>. Both meetings went well with the average attendance of about 25 students. We also hosted a picnic/barbeque sponsored by Motorola on Oct. 21<sup>st</sup>. Our next meeting is planned for a field trip to Motorola facility. Exact date of this meeting has not been determined.

The preparations for next year's EXPO have already begun. We are planning in reviving the Laser Show. EXPO will be held on February 23-24, 2001 at Tampa campus of University of South Florida.

Thanks for the support,  
Daniel Faria  
IEEE President - USF Student Branch



## Joint PE/IA & ASME Meeting Tour of Peerless / Fedco Facility



- Date/Time:** Wednesday, November 8, 2000, 6:30pm (Dinner will be provided)
- Location:** Dinner Tournament Players Club, 5300 W. Lutz Lake Fern Road, Lutz, FL 33549.  
Phone Number (813) 949-0090 (Country Club)
- Reservations:** Call Helen Prince at 727-734-5546 for reservations.  
Please call as soon as possible, cutoff date is November 4th.
- Cost:** \$15 Per Person  
Buffet Country Style Bar-B-Que, Potato Salad, Grilled Hamburgers, Hot Dogs, Chicken Breast, Baked Beans, Sliced Cheeses, Relish Tray, Assorted Breads, Condiments, assorted Cookies, Coffee, Tea, Decaff. Cash Bar opens at 6:30, Dinner at 7:00, Short Fedco talk 7:45, drive 7 minutes, facility tour begins at 8:15.

Peerless / Fedco - 1920 Gunn Highway, Odessa. Fedco (a division of Peerless) is the leader in the manufacture of highly automated bakery equipment. Fedco specializes in automated depositors, coaters, injectors, conveyors and cooling tunnels. They have a large CNC machine shop, fabrication welding shop, and electrical panel build area. Most of the machinery is PLC controlled. Fedco's engineering department uses ACAD and a Bill of Material process in its release to manufacturing. If you want a Ding Dong chocolate coated, or a Twinkie injected with cream, or nuts sprinkled on your cakes, and you need hundreds done in a minute your probably going to need a Fedco Machine. Come see some of the innovations happening in this competitive industry at this informal gathering.

## PE/IA Chapter Meeting Successful Substation Automation



- Date/Time:** Thursday, November 16, 2000, 4:00pm (Dinner will be provided)
- Location:** Tasnet, Inc. - 5271 102nd Avenue North, Pinellas Park, FL 33782
- Reservations:** Contact Gene Grace at (727) 544-1555 or [egrace@tasnet.com](mailto:egrace@tasnet.com)
- Cost:** \$10 Members, \$5 IEEE Students, \$15 Non-Members
- Program:**
- |                |                       |               |                          |
|----------------|-----------------------|---------------|--------------------------|
| 4:00 - 4:30 PM | - Registration        | 4:30 - 5:15PM | - Plant tour             |
| 5:15 - 5:45PM  | - Dinner/refreshments | 5:45 - 6:30PM | - Technical Presentation |

**Speaker:** Gene Grace, Sales Manager of Tasnet, has been with Tasnet for the past three years. His previous experience includes extensive design in distribution, transmission, generation and substation systems. He has worked as a consultant with Black and Veatch and Power Engineers and as a project engineer for North Carolina Electric Membership in Raliegh, NC. Gene is a '85 electrical engineering graduate of NC State University.

**Facility:** Tasnet Data: Tasnet started as a proprietary RTU supplier in '86. As a company, Tasnet soon realized that the future of the industry was in open systems and chose the PLC to be the CPU of their open architecture. This choice provided a robust system and the ability to implement algorithms for automation. Since that time, Tasnet has been producing open architecture automation systems that provide for communication with a large library of Intelligent Electronic Devices (IEDs), one stop shopping for all data retrieved and graphical HMIs that permit local and remote monitoring of substation data.

**Directions:** From the Tampa Airport - South on I-275 toward St. Petersburg Exit #18 on to Hwy 688, Ulmerton Rd. Continue West approximately 2 miles Left on to US 19, approximately 1-1/2 miles south to 102nd Ave. Turn right onto 102<sup>nd</sup> avenue and go through a sharp S turn. Go over speed bump and note Tasnet is on the right.



# MTT/AP/ED November Meeting

## "RF/Microwave Applications in Medicine"

**WHEN:** Thursday, November 9, 2000 6:00 pm

**SPEAKER:** Dr. Arye Rosen, Sarnoff Corporation, Princeton, NJ

**ABSTRACT:** The use of RF/microwaves in therapeutic medicine has increased dramatically in the last few years. RF and microwave therapies for cancer in humans are well documented, and are presently used in many cancer centers. RF treatments for supraventricular arrhythmias, and more recently for ventricular tachycardia (VT) are currently employed by major hospitals. RF/microwaves are also used in human subjects for the treatment of benign prostatic hyperplasia (BPH), and have gained international approval, including approval by the United States Food and Drug Administration (FDA). In the last two years, several otolaryngological centers in the United States have been utilizing RF to treat upper airway obstruction and alleviate sleep apnea. Despite these advances, considerable efforts are being expended on the improvement of such medical device technology. Furthermore, new modalities such as microwave enhanced liposuction, microwave ablation, RF/microwaves for the enhancement of drug absorption and microwave septic wound treatments are continually being researched. In the presentation, the advances in the areas of RF/microwave ablation, RF/microwave treatment of benign prostatic hyperplasia, microwave balloon angioplasty, and RF in the treatment of sleep apnea will be specifically addressed.

**BIOGRAPHY:** Arye Rosen received the Masters Degree in Engineering from Johns Hopkins University, a Masters of Science Degree in Physiology from Jefferson Medical College, and a Ph.D. Degree in Electrical Engineering from Drexel University. He is a Distinguished Member of the Technical Staff at the Sarnoff Corporation (formerly David Sarnoff Research Center, and before that RCA Laboratories) in Princeton, NJ, where he is currently responsible for research and development in the areas of millimeter-wave devices and circuits and microwave optical interaction. He currently holds an appointment as Research Professor in the School of Biomedical Engineering, Science and Health Systems at Drexel University, where he has held an appointment as Adjunct Professor in the Department of Electrical and Computer Engineering since 1981. He also holds the title of Associate in Medicine at Jefferson Medical College, where he has been engaged in research in the Division of Cardiology since 1970, specifically in the areas of Microwave Balloon Angioplasty and Microwave/RF Catheter Ablation for the treatment of cardiac arrhythmias. The author of more than 150 technical papers, he is Co-Editor of High-Power Optically Activated Solid-State Switches (Boston: Artech House, 1993), New Frontiers in Medical Device Technology (New York: Wiley, 1995), and six book-chapters in the fields of engineering and medicine. He holds over 50 United States patents in the fields of engineering and medicine.

Dr. Arye became a Fellow of the IEEE for innovation in semiconductor devices and circuits for use in microwave systems and for microwave applications to medicine. He is the recipient of numerous achievement and professional awards, including a 1989 IEEE Region One Award for significant contributions to microwave technology by the invention and development of microwave balloon angioplasty, a 1997 Drexel University Distinguished Alumni Award, and a year 2000 IEEE MTT-S Microwave Application Award for the application of RF/Microwave techniques in medicine. He has been a member of the IEEE MTT-S Technical program Committee since 1979, MTT-S Technical Committee Chairman on Biological Effects and Medical Applications, a Member-at-Large of the IEEE Health Care Engineering Policy Committee, and he has served as a Member of the IEEE Educational Activities Board.

**LOCATION:** Raytheon Systems Company St. Petersburg, 1501 72<sup>nd</sup> Street North, St. Petersburg.  
Gill Robb Wilson Conference Room

**PLEASE RSVP:** Leave name & country of citizenship with Greg Bonaguide at (727) 302-3367.  
E-mail: [g.bonaguide@ieee.org](mailto:g.bonaguide@ieee.org). Bring a guest; non-members welcome!

**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 on 2<sup>nd</sup> floor.



# Second MTT/AP/ED November Meeting

## "Current Industry Activity in New Antenna Designs"

**WHEN:** Tuesday, November 14, 2000 6:00 pm

**SPEAKER:** Dr. Steve Best, Cushcraft Corporation, Manchester, NH

**ABSTRACT:** Join us for a presentation on current antenna design and architecture approaches, including fractal, electrically small, and smart antennas.

**BIOGRAPHY:** Steven R. Best received his B.Sc.Eng and Ph.D degrees from the University of New Brunswick in Fredericton, NB, Canada in 1983 and 1988, respectively. Dr. Best's areas of study were electromagnetics and antenna theory and design. Steve has over 13 years of engineering design and management experience with several antenna companies serving both military and commercial applications. In 1987, he was employed with Chu Associates, Inc, in El Cajon, CA as Senior Electrical Engineer. In 1990 he was appointed to the position of General Manager. In 1992, he moved to Chu Associates', Littleton, MA facility as Vice President and General Manager. In 1993, he co-founded Parisi Antenna Systems in Waltham, MA. In 1996, he joined Cushcraft Corporation, located in Manchester, NH, as Director of Engineering and was subsequently appointed to the position of company president in 1997. He is a senior member of the IEEE, a member of ACES and he has authored numerous technical papers in various journal, conference and industry publications. Dr. Best also currently presents a one-day workshop titled "Antennas and Propagation for Wireless Communications" at various industry trade shows and conferences.

**LOCATION:** Raytheon Systems Company St. Petersburg, 1501 72<sup>nd</sup> Street North, St. Petersburg.  
Gill Robb Wilson Conference Room

**PLEASE RSVP:** Leave name & country of citizenship with Greg Bonaguide at (727) 302-3367.  
E-mail: [g.bonaguide@ieee.org](mailto:g.bonaguide@ieee.org). Bring a guest; non-members welcome!

**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 on 2<sup>nd</sup> floor.

---

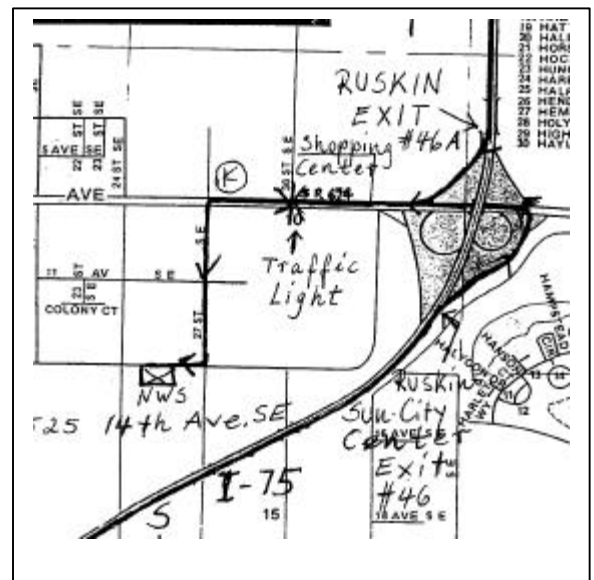
## Life Member Meeting Notice

The next Life Member meeting will be a tour of the **National Weather Service facilities in Ruskin, Florida**, at **10:30 a.m., Thursday, 2000 November 02**. The tour will include technical information on the NEXRAD doppler weather radar. ***Space is limited to 20.***

After the tour, we will gather at Buddy Freddy's Country Buffet in the Shopping Center at the I-75 interchange for an informal lunch. We have a space reserved for our group. We have a space reserved for our group.

Cost will be \$5 to \$8, paid individually to the restaurant.

Make your tour reservations by E-mailing Bob Ashley at [j.ashley@ieee.org](mailto:j.ashley@ieee.org) or calling 813-961-7617 and leaving a message including a phone number. (Bad weather could cause rescheduling this tour.)



## Admission & Advancement (A&A) Panel Meeting Invitation

To: IEEE Senior Members and Fellows from the Florida West Coast Section  
From: Mila Thelen, Membership Development Administrator, [m.thelen@ieee.org](mailto:m.thelen@ieee.org)

On behalf of Daniel W. Jackson, A&A Committee Chairman, I would like to invite you to attend the upcoming IEEE A&A Panel meeting on Saturday, 18 November 2000 to be held at the Hyatt Regency Westshore, Tampa FL. Only Senior Members and Fellows are invited to be on the panel and your main task is to review applications for Senior Membership as well as some applications from Associate to Member grade. Please feel free to extend this invitation to Senior Member and Fellow colleagues in your Section.

The A&A Committee is charged with determining whether applicants meet the minimum requirements for Senior Membership as defined by the IEEE Constitution and Bylaws, functioning primarily as a peer review jury and acting as the guardian of the membership standards of the IEEE. Here is a synopsis of what you will be asked to do: Each panelist will be given a number of applications for Senior Membership and Membership upgrade. The Reviewer evaluates the applicant for years of qualifying education and experience as well as the applicant's achievements, credentials and other indications of professional competence and performance related to IEEE designated fields. The Reviewer also evaluates the References' credentials and recommendation. The Reviewer enters his rating and comments on the Evaluation worksheet.

We hope that you will be able to serve on the panel for all or part of the day. A Continental breakfast will be served at 8:30 a.m. as well as a deli lunch buffet at 12:00 noon with vegetarian options. The meeting will begin at 9:00 a.m. with introductions and instructions from Dan Jackson and will end at approximately 5:00 p.m.

### **2001 Review Seminars For PE Electrical and EIT/FE April 20 & 21 Examinations**

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

**Monday, Jan. 22 for the EIT/FE Exam  
&  
Thursday, Jan. 25 for the EE Exam**

Seminars are conducted from 7-10 P.M. (Monday or Thursday) for ten weeks. The registration fee is \$250 and includes text. The seminars will be held on the main USF campus in Tampa with several viewing sites available via FEEDS. Videos of all classes will also be available to registered students.

To register, contact: Alan M. Keith, P.E., PO Box 14042, (EC51), St Pete, FL 33733 or by email

[Alan.M.Keith@ieee.org](mailto:Alan.M.Keith@ieee.org)

*An ad placed here  
reaches over 2,300 Engineers!*

*Business card \$30  
Quarter Page \$50  
Half Page \$90  
Full Page \$175*

*Multiple issue and member discounts available  
For further information please call the Signal  
Editor, Quang Tang at (813) 739-1222  
E-mail: [q.tang@ieee.org](mailto:q.tang@ieee.org)*



## **WebBooks**

The Worldwide Source for Discount Engineering Books

[www.webbooks.net](http://www.webbooks.net)

❖ Free shipping within the U.S.A. ❖

❖ Authors Wanted! ❖

WebBooks Division, J.K. Eckert & Co., Inc.  
4370 S. Tamiami Tr., Sarasota, FL 34231  
(941) 925-0468 (voice) • (941) 925-0272 (fax)  
[jkeckert@webbooks.net](mailto:jkeckert@webbooks.net)

# Brain Teaser Challenge Column

by Butch Shadwell

## October BTC Solution

At the time of this writing, I have received only one correct answer to this Brain Teaser Challenge. I suppose many of you have not designed a pneumatic oscillator yet. I wonder if they make MEs do this? In any case the answer is fairly simple, in that the accumulator tank is the capacitor of the pneumatic world and the flow restrictor is the resistor. The typical plastic flow restrictor even looks a little like a 1/2 watt resistor, and some are even marked with color bands to distinguish their value.


## November BTC

School is back in session, but I bet many of you with little ones at home, can still vividly recall the "fun" of taking the tikes on a cross-country trip in the family car. One of my neighbors relayed an interesting story about this summertime adventure that made me think of this month's BTC.

Heading back home after a tiring visit to Disney World, Bill had the car all loaded up, complete with little Billy in the back seat. Little Billy isn't quite as little as he was last year in that he now presses on the scale at 50 pounds. Everything seemed in order as they headed up the on ramp to I-4 highway. Bill had just hit 50 mph when he saw the blue haired lady in front of him decide to come to a complete stop at the end of the ramp. As often happens, in the excitement of being on the go again, little Billy had decided to massage his dad's neck by standing on the back seat. In an effort to minimize the trauma to his passengers, Bill very carefully brought the car to a complete stop, at a constant rate of deceleration, in 4.58 seconds. Due to little Billy's strange position, he transmitted 100% of his forward inertia to the back of his father's neck during this maneuver. This month's BTC is to determine just how much force was used in giving Bill Sr. his present pain in the neck? For extra credit, what was his stopping distance in feet?

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

**SINGLE & THREE PHASE INDUCTIVE COMPONENTS**



For Applications in

- Frequencies from 100Hz to 100kHz
- Currents up to 400A ( Inductances from  $\mu\text{H}$  to mH )
- Currents up to 3000A( Inductances from nH to  $\mu\text{H}$  )

made from Iron Powder Composite Pot Cores  
( 45mm to 300mm Diameter )

Also available:  
Custom shaped Soft Magnetic Materials for Stators for Motors,  
Relays, Magnetic Valves, Pole Pieces, Fluid Flow, etc.  
and other Applications in the 100Hz to 100kHz Frequency Range

**SMP**

**SINTERED MAGNETICS PROMETHEUS, INC**

5723 Hebron Lane · Lakeland · FL 33807-7280 · e-mail: [Letter@smp-online.com](mailto:Letter@smp-online.com)  
Tel: +1 863.668.8992 · Fax: +1 863.668.0608 · internet: <http://www.smp-online.com>

## **SARGENT & LUNDY ENGINEERS** **LEADERS IN ENGINEERING SINCE 1891**

- Power Engineering & Design
- Transmission / Distribution
- Environmental Consulting
- Information Technology Services
- Construction Management

9500 Koger Blvd., Suite 200  
St. Petersburg, FL 33702  
Gene Zakis  
(727) 578-2500

## November 2000 Calendar of Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2 <i>Life Member Meeting – National Weather Service Center, Ruskin, FL Space is limited 10:30 AM</i>	3	4
5	6	7 <i>EXCOM Meeting TECO Data Center 6:00 PM Guests Welcome</i>	8 <i>Joint Meeting PE/IA &amp; ASME Peerless / Fedco Facility Tour 6:30 PM</i>	9 <i>MTT/AP/ED “RF/Microwave Applications in Medicine” 6:00PM</i>	10 <i>Material Due For Next Month’s SIGNAL</i>	11
12	13	14 <i>MTT/AP/ED “Current Ind. Activity in New Antenna Designs” 6PM</i>	15 <i>Joint Meeting Section/CS/AES &amp; SP at TECO Data Center 6:00 PM</i>	16 <i>PES/IAS Chapter Meeting Plant Tour at Tasnet Facility 4:30-6:30PM</i>	17	18 <i>IEEE A&amp;A Panel meeting Hyatt Regency Westshore, Tampa, 8:30AM</i>
19	20	21	22	23 <i>Thanksgiving Day</i>	24	25
26	27	28	29	30		

Institute of Electrical and Electronics Engineers, Inc.  
 Florida West Coast Section  
 3133 W. Paris  
 Tampa, Florida 33614

NON PROFIT ORG U.S. POSTAGE PAID TAMPA, FL. PERMIT No. 1197
---

**DATE SENSITIVE MATERIAL. DO NOT DELAY**

Change of address? IEEE Web Contact Update <http://www.ieee.org/membership/coa.html>  
 Or send address changes including your name, IEEE Member number and all pertinent information to:  
 IEEE, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331 or call (800) 678-4333  
 Or fax your address changes to (732) 562-5445