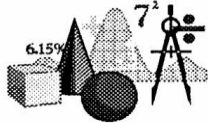




SPARKS

Daytona Section Newsletter
April 2015



APRIL SECTION MEETING

Thursday April 23rd at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION TOPIC

ERAU Student Presentations on the Robotics Competition

CHAIR'S REPORT



Welcome to Spring! April is probably the most anticipated monthly meeting for our Section, as it brings with it not only the highly anticipated student presentation event but the close of the season. As I write this column, our Embry-Riddle Aeronautical University student team is putting the last-minute touches on their hardware competition entry (can you believe it? For three years in a row now, they have started their entry for the competition more than a month before the final date. I'm still certain they will be working on it in the few hours before they compete as well, but using every potentially available moment is just good engineering project management, I'm told.) They are also competing in the ethics, website, and T-shirt competition, making this the first year they have participated in all the student events at SoutheastCon.

As previously mentioned, this year is our Section's 50th anniversary. We are planning a special mid-summer issue of the newsletter to commemorate the event, with some historical perspectives provided and a list of milestones from the Section's history. If you have any memorabilia, or memories to share, please let us know! Al Jusko is spear-heading this initiative, and would appreciate any e-mails, letters, or phone calls you could give him with information on the Section and engineering in the Daytona area over the past half century.

Finally, I would like to let you know exciting news from Embry-Riddle—the Ph.D. Program in Electrical Engineering and Computer Science (EECS) has been officially approved by the Board of Trustees. We have had an IEEE Student Chapter at ERAU since before they first offered an accredited BS in Electrical Engineering, and are pleased to support them in any way we can as they continue to grow and expand their department and offerings.

Have a good Summer, wherever you may be, and remember to keep in touch with the Section to let us know what we can do for you!

Jeannette

APRIL PROGRAM

We are closing out the spring dinner meetings with our traditional, and always popular, student presentation program. This program lets ERAU and Volusia County students show off their research and competitive projects. This is a great place to give them practice presenting their work while getting the recognition their hard work deserves.

Students from the ERAU ECSSE capstone Team 'Volt and Pepper' will describe their design and experience competing in the IEEE SoutheastCon hardware competition in Ft. Lauderdale. The competition challenge required teams to create a small autonomous robot capable of operating an etch-a-sketch, rotating a Rubik's cube, playing a Simon Says toy, and a deck of cards.

IEEE Special Award winners from the Tomoka Region Science and Engineering Fair, Abigail Walrath from Southwestern Middle School and Daphne Forester from Spruce Creek High School, will give a brief description of their projects and receive recognition for their successful efforts. Also, Abby Butka and team S.S. Minnow will present the results of last year's RoboSub competition, and a preview of this year's RoboBoat competition.

DAYTONA SECTION NEWS

MARCH PRESENTATION



Our March section meeting had wonderful attendance, surely due to the presentation by the Old Professor himself, Dr. Al Helfrick, who gave a presentation discussing the development of aircraft locating and tracking systems from the earliest systems to radar-based to later systems.

Those who missed the meeting missed a great presentation.



Shown are examples of early air traffic control and detection methods discussed from the early days of aviation.

ETA KAPPA NU HONOR SOCIETY INDUCTION CEREMONY



Congratulations to students newly inducted into HKN. Shown left-right: students Andre Napier, Shizhen Huang, Sujith Geevarghese, Sarvesh Dubey, Amay Desai, Brian Powell, Saloni Shah, Mohammed Alghumgham, Bharvi Chhaya, Dominick Tournour and Justin Albano. The first eight are the inductees, Justin, Dominick and Bharvi formed the induction panel (along with Dr. Barott).



Dr. William Barott shown with induction panel members Justin Albano, Dominick Tournour and Bharvi Chhaya.

ADDITIONAL NEWS

-Jeanette Barott (jeanette.barott@ieee.org) is looking for participants to help her test lesson plans for two programs: a week-long computer science/animation camp for 6th-8th grade girls, and a four-session two-hours-each computer literacy workshop for individuals with computer experience, but who lack familiarity with current tools.

-Keith Garfield will be representing the Section at the annual IEEE-USA conference. If you have any concerns that you feel need to be addressed to the leadership, please let him know by May 10th.

-The Section would like to congratulate Adrian Zvarych for elevation to Senior Member.

SECTION NOTES

We are looking for volunteers to start a Women in Engineering Chapter, a Young Professionals Affinity Group, a Communications Society Chapter, a Power Electronics Society Chapter, and a Robotics and Automation Society Chapter. Interested? Contact the Section Chair, Jeanette Barott (barottj@erau.edu).

The IEEE is offering loyalty pins to reflect landmark years of membership for members. If you would be interested in receiving one of these pins, please contact the Section Chair, Jeanette Barott (barottj@erau.edu)

LIFE MEMBERS COMMITTEE

The Life Members Committee of the Daytona Section has arranged for a tour of the Microflex Corporation manufacturing facility in Ormond Beach on Wednesday, April 15, 2015 from 10:00 a.m. to 11:30 a.m.

Microflex metal hose assemblies are used in a multitude of applications - from tank trucks to Space Shuttles; steam generation to gas separation. The company has developed techniques for braiding stainless steel for making hoses from 1/4" in diameter to 30" in diameter.

Please contact Ron Gedney (e-mail r.gedney@ieee.org; tel. 386-478-1204) for information and if you plan to attend so we have a count to give the company.

After the tour, for those willing to join us, we plan on having lunch at a nearby restaurant.

ANOTHER TALE FROM THE OLD PROFESSOR

HODGEPODGE DODGE OR SLEEPING IN A 1953 CHEVY

A "sleeper" is a hotrod that does not give away its prowess. This tale is about making a sleeper by, Don, one of my best friends from grade school days, and your humble correspondent. Before you jump to conclude; ho-hum, another "car story" from T.O.P., I want to make it clear this story is for young engineers; a lesson in making use of what you have to achieve lofty goals.

When my friends and I were driving age but not much more, Don's neighbor was looking to dispose of a 1953 Chevy 2 door sedan for free. The catch? The engine was seized and useless.

Don with the help of The Old Professor, pushed the Chevy to Don's house and parked it on the street under a tree.

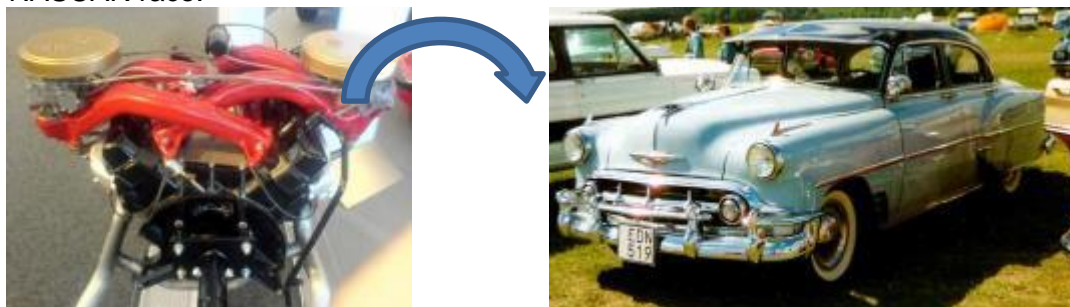
Don had no intention of driving a 6 cylinder sedan. He knew of a 1960 Dodge that had been rear-ended by a truck and was totaled by the insurance company. The Dodge had a 383 cubic inch V8 engine. The car's drive train was in good shape but was heading to the junk yard for scrap; not even for parts. It was his intent to do an engine swap and put the big 383 in the Chevy but we had logistics problems. How were we going to get the engine from the Dodge some miles away to Don's house and the old Chevy engine to the junk yard on our limited budget? As the old saying goes; "necessity is the mother of invention". (Here is where young readers need to start paying attention.)

We made a tow bar so we could tow the old Chevy on a regular trailer hitch. Then we removed the drive shaft from the Chevy engine and disconnected the hoses, wires and removed anything we may want to use after the engine swap. We put a ratchet chain hoist in a stout tree branch and lifted the old Chevy engine and propped it up on a couple of 4X4's. Then we towed the old Chevy with its now-loose engine, rocking around under the hood a few miles to where the Dodge was; conveniently under a tree.

We removed the big Dodge V8 with the hoist in the tree and set it aside. We pushed the Dodge away and the Chevy into the same position. Then we pulled the Chevy engine out and set it aside. (You've got the picture now? Right?) We lifted the big 383 V8 and lowered it on the 4X4's in the Chevy. And; you guessed it; we then pushed the Dodge back under the tree and gave it a seized 6 cylinder Chevy engine. When the junk yard took the Dodge away they didn't know or care it had a Chevy engine because they were paying by the pound.

Back at Don's house, with the hoist in the tree we removed the Dodge engine laying on the 4X4's and pushed the Chevy down the street a little bit. With the Dodge engine swinging in the tree, we made measurements and made new motor mounts by combining pieces from the old Chevy and the Dodge mounts. We finally reinstalled the entire Dodge engine and drive train. The only other thing we had to do was to shorten the drive shaft and within a few weeks the Chevy was ready to roll.

In spite of being a much more powerful engine than the original inline 6, the big V8, which we set back as far as we could, did not upset the weight distribution too much. But we moved the battery from the engine compartment to the trunk which helped quite a bit. We had to convert the old Chevy from 6 to 12 volts anyhow, to handle the starter, alternator and ignition of the new engine. The junk yard was the source of 12 volt bulbs for all the lights. The newer Dodge had "idiot lights" rather than gauges but we took all the "sending units" out of the old Chevy, which had meters when we stripped it of useful parts. Then we bought some nice chrome meters from the J. C. Whitney catalog and installed them in the old Chevy dash which made it look like it was ready for a NASCAR race.



Our first road tests of the car were pretty good. It was certainly quick! Then came upgrades to the engine like dual quads on a ram induction manifold. The engine was at least 400 HP after that change. Now we had problems. Under heavy acceleration the rear leaf springs would wind-up like a clock spring. After some help with welding and a couple of pieces of chain-link fence posts, the rear sported traction bars to prevent the axle from twisting. Other than that miscalculation, the Hodgepodge Dodge worked pretty well.

Every so often Don and I would be driving somewhere and a young dude in a hot new car would stop at a traffic light next to the faded, sleeper, 1953 Chevy. Seeing two young guys in the old Chevy we might get a little smirk from the dude. That was until the light turned green and all he saw was dust and smoke and the distant view of the Hodgepodge Dodge.

DAYTONA SECTION SHIRTS



We are pleased to offer Daytona Section polo shirts for our Section members. The shirts are embroidered with the IEEE Logo and DAYTONA SECTION on the left and your name and grade, if desired, on the right. The shirt is a high quality 5 oz, 65/35 poly/cotton pique in Royal Blue with white embroidery. Available in S - 2XL in men's as well as ladies sizes. Price is \$27, including tax, for S-XL size's, 2XL size is \$3 additional.

For more information or to order shirts contact:
Allan Jusko
3706 Longford Circle, Ormond Beach, FL 32174
386-671-3706 or a.jusko@ieee.org

Indicate shirt size and name and grade if desired. Shirts must be paid for before ordering, typical turn-around time is 2 weeks. Arrangements can be made to pick up shirts or have them shipped to you.

DAYTONA SECTION COFFEE MUGS



The Daytona Section has available coffee mugs with the IEEE Daytona Section Logo and are available for \$7.00. Purchase one or more to show you support and pride in our Section.

Contact Roger Grubic at 386-441-8958 or roger_grubic@ieee.org for more information.

EDITORS NOTES

The **SPARKS** newsletter is also available on our website <http://www.ieee.org/go/daytona>
Region 3 website <http://www.ewh.ieee.org/reg/3/> **Melbourne Section website** www.ieeemelbourne.org **Orlando Section website** www.ieee.org/orlando

FUTURE MEETING DATES:

The meeting dates for the 2015 fall session are: September 24th, October 22nd and December 3rd

2015 SECTION OFFICERS

Chair – Jeanette Barott

386-226-7405 jeanette.barott@ieee.org

Vice Chair - Dr. Keith Garfield

386-226-7081 garfielk@erau.edu

Treasurer - Charlie Husbands

386-760-7163 chusbands@ieee.org

Secretary – Roger Grubic

386-441-8958 roger_grubic@ieee.org

Membership Development –**Publicity/Media – Roger Grubic**

386-441-8958 roger_grubic@ieee.org

PACE Representative –**Dr. William Barott**

386-226-8973 barottw@erau.edu

Awards - Dr. Jianhua Liu

386-226-7713 liu620@erau.edu

Life Member Chair – Ron Gedney

386-478-1204 r.gedney@ieee.org

Computer Society Chair – Dr. Keith Garfield

386-226-7081 garfielk@erau.edu

Student Activities, (Co-Chairs)**ERAU - Dr. William Barott**

386-226-8973 barottw@erau.edu

B-CU - Dr. Mubarak Banisakher

386-334-6555 banisakm@cookman.edu

ERAU Student Chapter Chair- Leo Ghelarducci

Ghelardl@my.erau.edu

Webmaster – Charlie Husbands

386-760-7163 chusbands@ieee.org

SRT Project Coordinator - Charlie Husbands

386-760-7163 chusbands@ieee.org

SPARKS Editor - Allan Jusko

386-671-3706 a.jusko@ieee.org

ENGINEERING HUMOR

Normal people believe that if it ain't broke, don't fix it. Engineers believe that if it ain't broke, it doesn't have enough features.

What is the difference between mechanical engineers and civil engineers?
Mechanical engineers build weapons. Civil engineers build targets.

APRIL 2015 MEETING

Thursday April 23rd at the Halifax River Yacht Club
331 South Beach Street, Daytona Beach, Florida 32114
Just south of the Fire Station at the corner of Beach and Orange

TOPIC – Student Presentations

SPEAKERS- Members of the ERAU senior student project and robotics team

Dinner 5:30 PM

Presentation- 6:15 PM

April 23rd Dinner Menu

Italian Buffet

All entrees served with rolls and butter, house salad, coffee and tea

Unless noted, dinner entrées are \$20.00 each. Students \$10.00 each

A Veggie plate is available on request for \$10

Please contact Allan Jusko by Wednesday the 22nd at noon to give us a count for dinner or for further information

If you make reservations and are unable to attend, call at least 12 hrs prior to the event to cancel.

The Section is charged for all dinners ordered, please let us know if your plans change

Allan Jusko

Editor

386-671-3706

a.jusko@ieee.org