



SPARKS

Daytona Section Newsletter
March 2014



MONTHLY SECTION MEETING

Thursday March 27th at the Halifax River Yacht Club, 6:00 PM
331 South Beach Street, Daytona Beach, Florida 32114

PRESENTATION TOPIC – ERAU's EcoCAR 2

**MEETING NOTE – Our meeting schedule can be seen
on the last page of the newsletter**

CHAIRMAN'S REPORT

Tracy is out of town so the editor has hijacked the column this month.

The February meeting had a great presentation and a “show and tell” of the ERAU's Minion Wave Adaptive Modular Vessel. Student team leaders Tim Zuercher and Hitesh V. Patel treated the attendees by bringing the vehicle to the yacht club to show off the project. A picture of the vehicle is provided later in this newsletter.

Next month's April meeting will have a presentation from the student Robotic teams on their competition at SoutheastCon. It's always interesting to see how our future engineers designed their projects and dealt with the rules and limitations imposed by the competition. We would like to see a good attendance of our Section members to show the students our support.

In addition, the April meeting will have, as our guests, the Junior and Senior winners of the Daytona Section's special awards at the Tomoka Engineering and Science Fair which was held in January. These high school students were judged by Tracy Wichmann and Ron Gedney to have the projects which incorporated the most advanced application or use of Electrical or Electronics Engineering Technology in their respective divisions. Again, a good attendance is requested to show these aspiring engineers and scientist our support for their endeavors.

On March 11th, the Life Member Chapter, chaired by Ron Gedney, sponsored a presentation by Dr. Albert Helfrick who gave our group an excellent overview of the U.S. future air traffic control system that is currently under development. As can be imagined, managing air traffic is a very complex undertaking. The number of systems involved are quite staggering. It all boils down to a few elements, managing surface traffic; streamlining departures; navigation and communication during the flight; and landing. The new system would provide extra capacity for takeoff and landing and safely allowing planes to travel closer together to handle projected traffic volumes.

Al

MARCH PROGRAM

EcoCAR 2

EcoCAR 2 is a three year competition sponsored by the Department of Energy, General Motors, and Argonne National Laboratories. The competition encompasses fifteen Universities across North America. A 2013 Chevrolet Malibu is donated to each team where it is converted to an electric hybrid vehicle. EcoCAR 2 challenges students to reduce the Malibu's emissions, increase fuel economy, and maintain consumer acceptability. The mission of EcoCAR 2 is to educate the next generation of automotive engineers through an unparalleled hands-on, real-world engineering experience. The Embry-Riddle EcoCAR team is composed of Business, Communications, Computer Science, Electrical Engineering, and Mechanical Engineering majors. These disciplines work together to design and convert a Chevrolet Malibu to an electric hybrid vehicle. The team chose to build a Series Plug-In Hybrid which consists of a battery pack, an electric motor to drive the wheels, and a generator coupled to a diesel engine to provide supplemental power to the battery pack and electric traction motor. The car is currently in the early stages of operational testing and is being prepared for a final competition in June 2014.

OUR SPEAKERS

Chris Rowe joined the Embry-Riddle EcoCAR 2 team in January 2013 as part of the electrical team, and is now serving as the Electrical Lead while working on his Masters degree in Electrical engineering. Chris is responsible for leading the EcoCAR2 electrical team in the technical aspects of the electrical system of the Chevy Malibu. This includes design, installation, and electrical troubleshooting for the low and high voltage systems on the EcoCAR.

ANOTHER TALE FROM THE OLD PROFESSOR

OF CHEERIOS AND CORVETTES

Not too long ago a sinkhole opened up under the National Corvette Museum in Kentucky and the story made it to the international news scene. Sinkholes happen all the time and on occasion swallow up a car or two and may be recognized on a local newscast but this sinkhole swallowed eight Corvettes and that was big news!

What makes the Corvette so unique? First, it is the second most produced automobile marque in history. With the exception of another General Motors product, the Suburban, Corvettes have been produced longer than any other marque. I am sure if eight Suburbans fell into a sinkhole very few people would care; but Corvettes? That's news.

The first Corvette was introduced by General Motors Chevrolet division in 1953 as a rear wheel drive, fiberglass bodied, two-seat sports car. Beginning in 1956 the powerplant became a V8 and that is how the car remains, basically unchanged but modernized, until this day.

How many other products can make this sort of claim; virtually unchanged for over 60 years? A few come to mind such as Coca Cola, introduced in 1890's, and a product from another "General" company, General Mills; Cheerios; introduced in 1941. But these products are not a fair comparison to an automobile.

What does come to mind is the Cessna 172, which is the most-produced aircraft, in terms of the number produced. The 172 first flew in 1955 so a lucky dude could drive to the airport in his Corvette and fly his 172 in the mid 1950's.

The Old Professor had a 1960 Corvette that he drove to a little South Jersey airport in the mid 1960's to fly a rented Piper J3 Cub from the turf runway. An interesting fact is the 135 mph top speed of the fuel-injected, 315 horsepower Corvette was higher than the 90 mph top speed of the 65 horsepower Cub. I could have driven to my destination in less time than I could fly in the Cub if it wasn't for New Jersey speed limits.

What does it take to make a product of exceptional longevity? The answer is; get it right the first time and then don't mess with it. There was a saying around Cessna when I worked there; "at Cessna it is evolution not revolution that makes successful aircraft". (Do you hear that Microsoft? Remember Windows Millennium?) If you look at a brand new Cessna 172 you can see some components that harken back to the 1950's. It worked then, it will work today.

Coca Cola tried a new formula a decade or so ago. Guess what? A huge flop! General Mills didn't mess with plain Cheerios until just recently when the company promised not to use genetically modified ingredients which it claimed it wasn't using anyhow.

Ford made a competing sports car for the Corvette beginning in 1955; the Thunderbird. It was originally a two-seater. Then in 1958 became a 4000 pound, 4 seat behemoth. That was the beginning of a downward spiral and eventually the car became a disguised Mercury Cougar with a Thunderbird name plate and in 1997 the marque was discontinued. In 2002 Ford reintroduced the Thunderbird as a 2 seat "sporty" car. It lasted three model years. Another colossal flop!

Well, it's time for the Old Professor to head off to the school at the airport with their fleet of Cessna 172's in his Corvette and encourage young engineering students to "get it right the first time and then don't mess with it". Wish me luck!

Al Helffrich, Ph.D

FEBRUARY'S PRESENTATION ON THE ERAU MINION AUTONOMOUS SURFACE VEHICLE



Students Tim Zuercher and Hitesh V. Patel gave a great presentation at last month's meeting of the Minion ASV. The presentation discussed the development of the ERAU RobotX platform with a focus on addressing the challenges of autonomy, navigation, and propulsion in a maritime environment.

Shown is a picture of the ASV in front of the Yacht Club after the meeting thanks to Dr. Billy Barott. As can be seen, it is an ambitious project very well done.



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 \$28, including tax, for S-XL size's, 2XL size is \$4 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.ieemelbourne.org

Orlando Section website

www.ieee.org/orlando

FUTURE MEETING DATES:

The remaining meeting dates for the 2014 session are: Apr 24, Sept 25, Oct 23 and Dec 4

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MARCH 2014 MEETING

Thursday March 27th 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

AGENDA

5:30 PM Cocktails
6:00 PM Dinner
7:00 PM Program

TOPIC – ERAU's EcoCAR 2

SPEAKERS- Chester Rowe II and Christopher Rowe, Embry-Riddle Aeronautical University

March 27th Dinner Menu

Beef Lasagna with veg du jour

Chicken Alfredo with veg du jour

Grilled Salmon with rice and veg du jour

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 with your dinner selections or for program information.

Selection's must be in by Wednesday the 26th at noon so the club has time to order and prepare

Allan Jusko Secretary/Editor 386-671-3706 a.jusko@ieee.org

**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**
