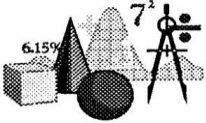




# SPARKS

Daytona Section Newsletter  
October 2020



---

## SECTION MEETING

**There will be no Daytona Section Meeting for October**

### CHAIR'S REPORT



I have decided not to have our usual October meeting that would have been on October 22<sup>nd</sup> at the Halifax River Yacht Club. There is concern within IEEE that face to face meetings may not be appropriate at this time. I hope that we can have our November/December meeting either virtually or in person.

Our efforts to install the Small Radio Telescope (SRT) are continuing at the Burns Science and Technology Charter School in Oak Hill, Florida. Without getting into the details, some mechanical and technical problems have been encountered and solved. We did anticipate there would be problems. The cooperation and coordination between the Burns School people and our IEEE Section people has been outstanding. This project has attracted attention throughout IEEE as a positive way IEEE can develop synergies with the community. The ceremony is being planned for 9:30 AM on Wednesday, October 21<sup>st</sup>, 2020, at the Oak Hill Municipal Building adjacent to the Burns School with social distancing and other precautions being observed. Of course, IEEE plans to continue to provide SRT support after the official ceremony.

Moving on to a different subject, every two years, the officers of the IEEE Daytona Section are elected. The Daytona Section has been very fortunate to have good officers and a strong Executive Committee supporting those officers. We are currently developing the slate of officers for 2021 and 2022. If you have an interest in serving in IEEE, please let me know – see my email address below. Your service can be as an officer or being responsible for a specific area. You can see the various positions that we have in another section of this newsletter.

Please keep reading your messages from IEEE for any changes that may occur. My hope for all of you is good health and good fortune.

*Rich*

Richard T Kent Jr  
IEEE Daytona Section Chair  
Mobile 206-369-1965

#### **DAYTONA SECTION SRT PROGRESS**

Our September meeting gave us a chance to present the progress, and issues, we encountered with the installation of the SRT to the members in attendance. Most issues have been resolved and testing is underway.

The IEEE Daytona Section will have a ceremony with the Burns Science and Technology Charter School to transfer the operation of the IEEE Small Radio Telescope (SRT) to the school. The SRT has been in the possession of the Daytona Section for several years. This ceremony is the result of the Daytona Section members, with the help of the school, installing, updating, and modifying the SRT on the Burns School property in Oak Hill, Florida. The cooperation and coordination between the Burns School faculty and students and our IEEE Section members has been outstanding. The ceremony is being planned for 9:30 AM on Wednesday, October 21<sup>st</sup>, 2020, at the Oak Hill Municipal Building adjacent to the Burns School. The IEEE Daytona Section will continue to provide SRT support after the official ceremony.

## A RESPONSE TO THE OLD PROFESSOR'S MARCH TALE



*Old Professor  
IEEE Daytona Section  
Daytona Beach, FL*

*Dear Old,*

*I was disappointed when the March 2020 IEEE Section meeting was cancelled. I would have enjoyed it. I always read the Newsletter and being an old gearhead, I think I have the answers for your gearhead quiz.*

- 1. Candy apple red is a paint scheme popular on hotrods. Before polyurethane paint, it was a labor-intensive multi step process involving several coats of paint and clear lacquer and produced a deep color similar to a candied apple.*
- 2. Tube grills were replacements for the factory grill consisting of several chromed tubes arranged horizontally.*
- 3. Fuzzy dice: as the quiz said "everybody knows this one".*
- 4. Rolled and pleated refers to ribbed vinyl upholstery for seats and sometimes door panels that replaced the flat cloth seats and door panels found in cars of that era.*
- 5. Half and full moons are slightly convex hubcaps. Full moons covered the entire wheel while half moons only covered the hub. They were either chrome plated steel or spun aluminum and had no decoration.*
- 6. J. C. Whitney is a catalog mail-order auto parts company.*
- 7. Frenched head or tail lights is the practice of recessing lights a few cm.*

8. A *deuce coupe* is a 1932 Ford coupe which was very popular with hotrodders.
9. Hurst conversions replaced the gear shift lever, usually 3 speeds, from the steering column, "three on the tree", to the floor coming directly from the transmission.
10. A *suicide knob* is a knob protruding from the steering wheel to aid in steering particularly when making a lot of rotations of the steering wheel or just to be "cool". People with disabilities who have difficulty gripping a conventional steering wheel are helped with this knob.
11. *Metal flake* involves adding fine metal flakes in the paint of a hotrod which gives the paint a "sparkle" effect. Today the technique is available as a factory color and is called "metallic". Factory metallic paints use much smaller flakes and is more subdued than what one would find on a hotrod.
12. *Spinners* are chromed full wheel covers with a propeller-like center which reflects ambient light and produces a strobe light effect when the wheel rotated.
13. *Lowering kits* either partially compressed the suspension springs or modified the mounting points usually for the rear springs so the car would sit lower. This modification also reduced ground clearance.
14. *Chopped* meant cutting out a section of the car body completely around the entire car and then welding the body, now with a shortened height, back together. *Channeled* was lowering the entire body of the car on the frame. (when cars had frames) This usually required cutting a "channel" in the body's floor as some or all of the frame would now be inside the body.
15. *Fender skirts* covered the rear wheel cutouts leaving only the bottom of the rear wheels visible.
16. *Hemi* refers to a hemispherical combustion chamber. To hotrodders a "hemi" meant a Chrysler product V8 engine.
17. Daytona's Crane Company's main products are special camshafts for increasing the power of engines.

*On the “Little Deuce Coupe”; the triple deuces are the three two-barrel carburetors on top of the “blower” or supercharger. The wheels are factory wheels which have been chromed and mounted inside-out, “chromed and reversed”.*

*Did I get them all right?*

*Sincerely,  
M. C. Squared*

*Dear Mr. Squared,  
You certainly qualify as a “gearhead”. You have them all correct. I hope to see you at a Daytona Section meeting as soon as we can resume.*

*Best Regards,  
The Old Professor*

## **ANOTHER TALE FROM THE OLD PROFESSOR**

### **WHAT WOULD HAPPEN IF.....?**

This is an important question in engineering. It is the foundation of “Failure Modes and Effects Analysis” or FMEA.

This morning I was reminded of this question as I trailed behind a cement mixer driving home from the grocery store. The truck with its one hundred wheels was rumbling and clattering along the road with its barrel slowly turning and mixing its slurried load. I have been fascinated by these machines since I was a young child. My grandson when only 3 years old wanted a toy cement mixer for his birthday which I provided.



Well, maybe not a hundred wheels but certainly, a lot of wheels.

Before we progress any further, the so-called “cement mixer” does not mix cement; it mixes concrete. What is the fascination of this machine to a youngster? Well, it’s big, noisy, powerful and you can see what it is doing; the rotating barrel is predominant. Actually, you don’t see what it is doing. The Archimedes screw inside the barrel that continually pushes the concrete from the top of the slurry to the bottom of the barrel while in transit is not visible. When the mixer truck delivers the concrete the rotation of the barrel is reversed and the concrete is lifted up the barrel and discharges from the top.

This action is more than just stirring the concrete. Some trucks are loaded with dry material and water and the truck converts the raw ingredients to concrete as it travels to the job site. More often than not the barrel is loaded with pre-mixed concrete. The rotation of the barrel is to keep the concrete from setting and becoming hard. Concrete mixer trucks have a water supply where the driver can add water when necessary to ensure that the concrete remains workable and does not begin to set.

I often wondered when I was a young boy “what would happen if the barrel stopped turning?” As a youngster I never heard the term “FMEA” and never realized that I was doing FMEA on a concrete mixer. The “E” in FMEA is effects and the effect of a stopped barrel would be the concrete would eventually set and become hard and not useful for the construction site. But there is another more pressing question; “how do you get the hardened concrete out of the barrel?”

The answer to that question, for all practical purposes is; you can’t get hardened concrete out. Due to this grim result, concrete mixers are designed so the probability of a stationary barrel with concrete inside is very low and concrete companies have a number of backup procedures to get a stopped barrel turning again. If the barrel is turned with a hydraulic motor which fails, a portable hydraulic pump can be used to get the barrel turning again so the truck can get back to the concrete plant and emptied before the load hardens. Another simple technique is to use a second truck with a functional barrel and a giant belt to use the working truck to spin the failed barrel until the truck can be towed back to home base. These procedures are also a part of FMEA; backup systems, redundancy and emergency procedures that avoid these dire consequences.

In today’s complex world there a lot of “what ifs?”. Engineering students, and most other disciplines, should be educated to consider the “what ifs” early in their education. As one of my friends would say; “The mark of a good design is not only how it works but how it fails.”

*Al Helfrick, a.k.a. The Old Professor*

## PE CORNER

### Records Retention

Chapter 61G15, Florida Administrative Code, contains two separate provisions that require licensees to retain records. The first of these provisions is found in Chapter 61G15-22, *License Renewal, Continuing Education*.

**Chapter 61G15-22.008, Record Keeping.** *It is the licensee's responsibility to maintain sufficient records to demonstrate completion of qualifying professional development hours for at least two licensure cycles (four years).*

This provision requires each licensee to keep sufficient records to demonstrate that the minimum number of continuing education hours have been completed. These records are to be kept for no less than two renewal cycles or four years from the close of the renewal cycle that they were earned in. So, some records may actually need to be kept for up to six years for those professional development hours that were earned close to the beginning of a renewal cycle. For example, the most recent renewal cycle ended in February 2019. If you took a CE class in March 2019, you will need to keep that certificate until at least February 2025.

Additionally, prior to 2015, CE providers were required to report Continuing Education Hours to the FBPE. However, this is no longer the case, making it even more important that a PE maintain the certificates.

The second of these provisions is found in Chapter 61G15-30, *Responsibility Rules Common to All Engineers*.

**Chapter 61G15-30.009, Retention of Engineering Documents.** *At least one copy of all documents displaying the licensee's signature, seal which is legible to the reader, date, and all related calculations shall be retained by the licensee or the licensee's employer for a minimum of three years from the date the documents were sealed. These documents shall be maintained in hardcopy or electronic format.*

This provision requires each licensee to keep at least one copy of every document that was signed, sealed, and dated, regardless of whether it was physical or electronic. The provision requires these records to be kept for no less than three years from the date the documents were sealed. It allows the licensee to maintain these documents in hardcopy or in electronic format, provided the signature and seal can be verified. For example, in the case of an originally physically signed, dated, and sealed (embossed) document, the embossed copy can be scanned and maintained digitally provided the embossing on the original can be seen within the copy (typically accomplished by rubbing graphite over the embossing).

Art Nordlinger, PE, Senior Member

## 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 \$30, including tax, for S-XL size's, 2XL size is \$3 additional.

For more information or to order shirts contact: Allan Jusko 386-671-3706 or [a.jusko@ieee.org](mailto:a.jusko@ieee.org)

## FUTURE MEETING DATES:

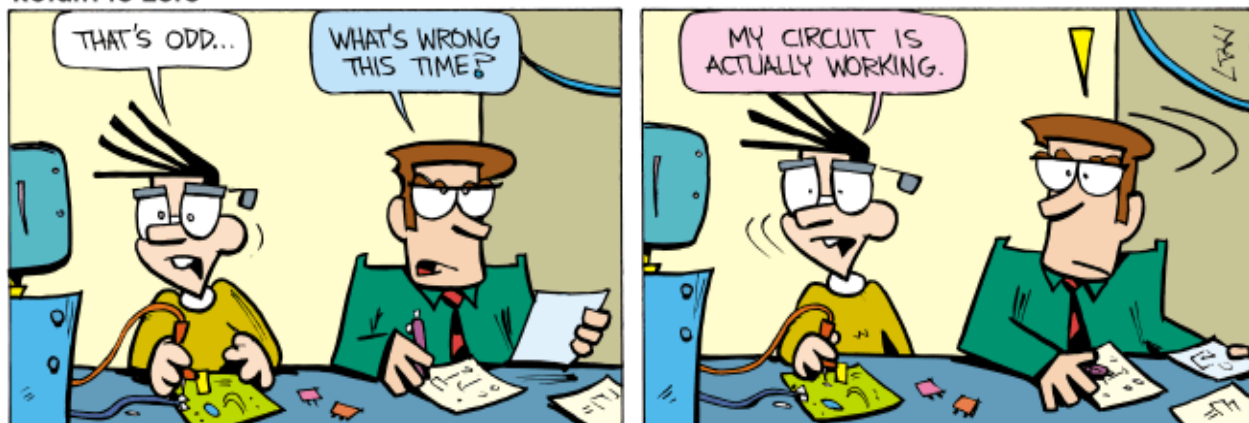
The remaining date for the 2020 fall session is: November 19th.

## EDITORS NOTES

Visit our Daytona Section website: <https://ewh.ieee.org/r3/daytona/>

## ENGINEERING HUMOR

### Return to Zero



EEWeb.com



## **2020 SECTION OFFICERS**

### **Chair – Richard Kent**

206-369-1965 rtkentjr@msn.com

### **Vice Chair - W. Shawn Wilkerson**

386-322-7999 shawnwilkerson@ieee.org

### **Treasurer - Dr. Jianhua Liu**

386-226-7713 liu620@erau.edu

### **Secretary – Ron Gedney**

386-847-8094 r.gedney@ieee.org

### **Awards Chair – Dr. Keith Garfield**

386-226-7081 garfielk@erau.edu

### **Publicity/Media – John Horner**

201-240-6689 jhorner@gmail.com

### **Life Member Chair – Ron Gedney**

386-847-8094 r.gedney@ieee.org

### **Vice Chair – Martin Oksenhorn**

383-283-4339 moksenho@yahoo.com

### **Computer Society Chair – Dr. Keith Garfield**

386-226-7081 garfielk@erau.edu

### **Student Activities**

#### **ERAU - Dr. Keith Garfield**

386-226-7081 garfielk@erau.edu

#### **B-CU - Dr. Xiaohe Wu**

wux@cookman.edu

### **ERAU Student Chapter Chair- Victoria Rutenbeck**

Rutenbev@my.erau.edu

### **ERAU WIE Chair – Gabrielle Stoney**

stoney@my.erau.edu

### **B-CU Student Chapter Chair – Brent McGlashon**

Brent.a.mcglashon@students.cookman.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