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January 1998

Rock River Valley Section  
www.ieee.org/regional/section/rock\_river/

Event



Sense

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The Institute of Electrical and Electronic Engineers, Inc.

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## RRV Section & IAS Chapter Meeting

# GPS & Other Satellite-Based Navigation Systems

**When** January 29, 1998

**Where** Rock Valley College,  
Technology Center, Room 117.  
Enter from Mulford, just north of  
Springbrook Rd.

**Agenda** 6:00 PM Social Time  
6:30 PM Dinner  
7:30 PM Program

**Program** Current and Future  
Commercial Airborne Applica-  
tions of GPS and Other Satellite-  
Based Navigation Systems.

Abstract: Satellite-based navigation systems are being incorporated into today's airborne operations, for en route, terminal, non-precision approaches, and oceanic/remote procedures. Work is underway to enable the use of GPS for landing operations, with plans to eventually retire the current Instrument Landing System (ILS). This talk will discuss basic GPS and differential GPS (DGPS) concepts, the application of those concepts for airborne operations, and the Wide Area Augmentation System (WAAS) and the Local Area Augmentation System (LAAS).

**Speaker** Daryl McCall is the GNSS Technical Director for the Navigation Systems Engineering Department for Rockwell Collins' Commercial Air Transport Division, based in Cedar Rapids, Iowa. He is responsible for the technical aspects of the Collins Commercial Airborne GNSS equipment including:

GPS-4000, GLU-900 series (MMR - multi-mode receiver), GNLU-900 series, and APR-4000 products.

Daryl has 17 years experience in GPS and differential GPS airborne applications and rep-

resents Rockwell on several industry forums and chairs two committees: the IEEE Aerospace and Electronics Systems Society's Satellite Navigation Panel and RTCA's Special Committee 159's Working Group 2 on the Wide Area Augmentation System.

**Door Prizes** Sponsored by RRVS and Best Buy

**Meal** Dinner will be buffet style (with a min. of 15). Please make your **dinner reservations** by calling **Gloria at 815-226-5247 by Tuesday, January 27, (please include your e-mail address in the information you provide Gloria - thanks)**. The cost of the **dinner** is **\$5** for IEEE **members** and **\$14** for **non-members**. Unemployed members may call one of the officers for special arrangements.

**Note** The meeting is open to the general public. You need not be an IEEE member. However, please call to enable us to make proper arrangements.

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## IEEE-USA News Bytes

The National Building Museum, in conjunction with National Engineers Week, will present a new exhibit, *Breaking Through: The Creative Engineer*, beginning in February 1998. The museum is seeking photographs of engineers at work, as well as quotations on creativity in engineering. Engineers can submit their photos (color or black-and-white, any size), captions, and quotations to exhibit curator Robert Friedel, National Building Museum, 401 F Street, N.W., Washington, DC 20001. Photos will be returned upon request.

SAT Math scores are up but engineering enrollment is coming down, according to a survey of the Class of 2001 by the College Board. Despite the infotech revolution, only eight percent of incoming college freshmen chose engineering as their intended major -- down from 11 percent 10 years ago. Women are even scarcer: fewer than one out of five engineering freshmen will be women, according to the survey.

## November Meeting Recap

As has become the tradition with the RRVS, the November section meeting was held on the Northern Illinois University Campus. A fairly good crowd showed up for the event which featured a buffet dinner supplied by Yen Ching of DeKalb and a presentation by Harry Terhune from Commonwealth Edison.

Harry's presentation entitled "Open Transmission Access Perspectives" was interesting and insightful. He described some of the current legislation being enacted that is forcing the deregulation of the electrical utilities. With this legislation the consumer will be allowed to buy power from a variety of producers. He discussed the reliability of the power system in terms of capacity and demand noting how proper planning is required. His intuitive interpretations of how a power system behaves, such as how the power system "slows down" when there is a loss of a major power source, intrigued the audience.

Those in attendance were obviously very interested in the subject. Because of the large number of question from the audience, Mr. Terhune was only able to finish about half of his prepared presentation. It seemed that everyone there had an enjoyable time while learning something about open access on the power system. Perhaps Harry can come back and finish his presentation at a later meeting.

## December Meeting Recap

Dr. William Shepherd, a visiting professor at the University of Wisconsin-Madison from the University of Bradford UK, intrigued attendees with a series of power and power electronics related puzzles. He challenged the audience to remember that, for the most part, the mathematical constructs that human beings have developed to describe the real world don't really exist, they are just ways to describe real world phenomena in mathematical terms and to enable simulation of same. He used the example of reactive power, among others. His questions were thought provoking and caused participants to reflect on their most basic technical assumptions. Our section was honored to have Dr. Shepherd.

## February Meeting Preview

The topic for this meeting will be a discussion of how solar energy can compete with traditional energy sources in a deregulated energy market.

## Submissions to *Event Sense*

Send articles and job ads to the *Event Sense* editor, Bob Parro, via e-mail (preferred), or fax. Job ads will run for two consecutive months. Contact the *Event Sense* editor if the ad needs to run longer. Please make submissions by the twenty-fifth of the month. All submissions are subject to editing for style, clarity, and space considerations.

e-mail: b.parro@ieee.org  
fax: (815) 394-2497

**RRVS Executive Committee**

(l-r) **standing:** Larry Wachowiak, Treasurer; Hassan Mansir, IAS Chapter Chair; Don Zinger, NIU Student Branch Counselor; Matt Zimmer, Secretary and IAS Chapter Vice Chair; Roger Caruana, Education and Technical Activities Chair; **seated:** Caio Ferreira, Past Section Chair and current IAS Chapters' Department Chair, Bob Parro, Section Chair; Bill Barber, Section Vice Chair and Membership Chair; Jim Buerosse, PELS Chapter Chair; Paul Peterson, Joint Computer/Control Systems Chapter Chair and Awards Chair

**The Rock River Valley Section would like to give recognition to the following area companies and university for supporting Section Officers:**

**Sundstrand Corporation • 3C Computer Systems • William Barber & Associates • Northern Illinois University**

### Rock River Valley Section of the IEEE 1997-1998

[WWW: [www.ieee.org/regional/section/rock\\_river/](http://www.ieee.org/regional/section/rock_river/)]

#### Elected Executive Committee

Chair	Bob Parro	b.parro@ieee.org	(815) 394-2947
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#### Northern Illinois University - Student Branch Officers

St Br Counselor	Prof. Don Zinger	d.zinger@ieee.org	(815) 753-0540
St Br Chair	Jamie Phillips		
St Br Vice-Chair	Michelle Marotta		
St Br Secretary	Rob Reeder		
St Br Treasurer	Ryan McMillin		

Messages for student officers can be left at the NIU Dept of Electrical Engineering,  
(815) 753-9974 or e-mail at [sb.niu@ieee.org](mailto:sb.niu@ieee.org)

## Calendar

**January Section Meeting** ..... **Jan 29**  
GPS & Other Satellite-Based Navigation Systems

**February Section Meeting** ..... **Wednesday, Feb 25**  
Joint RRVS IEEE/ASME - Can Solar Energy be Competitive in a Deregulated Energy Market?

### Time-Sensitive Material

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