March, 1964:
Cover: While IEEE has many lapel pins on hand, very few are showing up on the jackets of members at meetings. So, the GRID publicizes the availability of pins for various grades of membership, from Fellow to Member to Student. They're all US$4.40, except the gold-plated Fellow pin which is $5.50.

Page 2: The speaker for the Information Theory chapter is Andrew Viterbi of UCLA, who got his PhD a year earlier from USC. He later develops the phase-locked loop. In 1967 he proposes the Viterbi algorithm for decoding data, and later developed the CDMA protocol. He co-founded Qualcomm in 1985 in San Diego. The school of engineering at his alma mater USC is named for him. He received the IEEE James Clerk Maxwell Award in 2007, and the USA National Medal of Science the following year.
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THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

reminder
March 11 (Wednesday) PTGEM
March 16 (Monday) PTGR
March 17 (Tuesday) FSS, PTGCT
March 18 (Wednesday) PTGMI
March 24 (Tuesday) PTGEC
March 25 (Wednesday) SCVSS/TGI, PTGIM
March 26 (Thursday) PTGIT
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Disserendipity?

Some two-hundred years ago Horace Walpole's tale, "The Three Princes of Serendip" enriched the English language with the word "serendipity" — the facility for making a fortunate discovery while searching for something wholly unrelated. 

Seeking to take our place among the immortals, we have coined a new term, the opposite (or perhaps the reciprocal) of serendipity: 

Dis-ser-en-dif-i-ty — the aptitude for not finding something for which one is not looking. And in electronic engineering, as in other branches of human endeavor, disserendipity can prove very inconvenient.

Disserendipity at Work

A case in point is a recent incident in our own engineering lab.

During the development of a special modification of one of our capacitance bridges, the engineer suddenly encountered great difficulty in maintaining the balance of the bridge. Since comparable circuitry had performed admirably in several other bridge designs, the problem was wholly unexpected. The engineer meticulously checked all critical points with scope and VTVM, but, suffering from an acute attack of disserendipity, he failed utterly to find what he wasn't looking for.

RF Voltmeter to the Rescue

Finally in a flash of non-disserendipitic insight, he made a quick check with one of our Sensitive RF Voltmeters (the Model 41D to be specific) and found just what he was looking for — a 1-Mc buffer stage was oscillating merrily well up in the VHF region, to the considerable discomfort of the associated circuitry. The mesa transistor used in earlier versions had been replaced here by a newer silicon planar type having a far higher gain-bandwidth product. This, combined with lead capacitance and stray inductance, yielded the wholly uninhibited RF oscillator, whose output was far beyond the frequency range of virtually all scopes and well below the sensitivity limits of VTVM's.

Once the RF Voltmeter had revealed the problem, it was promptly corrected, and everyone, including the capacitor bridge, lived happily ever after.

Conclusion

In the case of many of the newer transistor types which have a high ft, such spurious high frequency oscillations are far from uncommon. Unless one is looking specifically for them with the right tool, they can prove elusive indeed.

Detection of these oscillations is an application for which our Sensitive RF Voltmeters, with their wide frequency range and very high sensitivity, are particularly well adapted. And all of this serves as another example of the importance of having one of our Sensitive RF Voltmeter on hand as a basic laboratory tool.

Our Sales engineer in your area will be happy to give you full details on our Sensitive RF Voltmeters and their applications, or to arrange a demonstration. Why not give him a call?
MEETING CALENDAR

FRESNO SUBSECTION  
8:00 P.M. • Tuesday, March 17  
Engineering at Fresno State College  
Thomas H. Evans, head, engineering division, Fresno State College  
Place: 10th floor, PG&E Building, Fresno  
Dinner for officers and speaker

SANTA CLARA VALLEY SUBSECTION  
6:00 P.M. • Wednesday, March 25  
(Joint with Technical Group Industrial, see below)  
Inspection trip of General Motors Buick, Oldsmobile, and Pontiac assembly plant, Fremont  
Dinner: 6:00 P.M., General Motors cafeteria, Fremont  
Information: Art Wells, JU 8-4074

TECHNICAL GROUP

Industrial  
6:00 P.M. • Wednesday, March 25  
(Joint with Santa Clara Valley Subsection, see above)

PROFESSIONAL TECHNICAL GROUP CHAPTERS

Circuit Theory  
8:00 P.M. • Tuesday, March 17  
Recent developments in applications of the computer to network theory  
Prof. D. Calahan, visiting assistant professor, University of California, Berkeley  
Place: Ampex Cafeteria, 401 Broadway, Redwood City  
Dinner: 6:30 P.M., Villa D’Este, 3401 El Camino Real, Atherton  
Reservations: Jan Mulvihill, 367-3169 or 367-3188

Electronic Computers  
8:00 P.M. • Tuesday, March 24  
The impact of integrated circuits on system design  
Rex Rice, manager, digital systems research, Fairchild Semiconductor  
Place: General Electric Computer Lab, 310 De Guigne Drive, Sunnyvale  
Dinner: 6:30 P.M., Old Plantation, El Camino and Bernardo, Sunnyvale  
Reservations: none required

Engineering Management  
8:00 P.M. • Wednesday, March 11  
Management of military sciences  
Capt. Harry C. Mason, Commanding Officer and director, U.S. Naval Electronics Laboratory, San Diego  
Place: Lockheed Palo Alto Auditorium, Building 202  
No dinner

Information Theory  
8:00 P.M. • Thursday, March 26  
Effect of sequential decision feedback on communication over the Gaussian Channel  
Prof. Andrew J. Viterbi, Dept. of Engineering, UCLA  
Place: Stanford Research Institute, Bldg. 1, 333 Ravenswood Ave., Menlo Park  
Dinner: 6:00 P.M., Villa d’Este, 3401 El Camino Real, Atherton  
Reservations: Mrs. Kelly, 326-6200, Ext. 2945, by March 25

Instrumentation and Measurement  
8:15 P.M. • Wednesday, March 25  
Instrumentation for nuclear measurements—a detailed discussion of the instrumentation for measurements relating to nuclear explosives  
Marcus McCraven and Gordon Longerbeam, Lawrence Radiation Laboratory, Livermore  
Place: Hewlett-Packard Auditorium, 1501 Page Mill Road, Palo Alto  
Dinner: 6:00 P.M., Dinah’s Shack  
Reservations and information: Mrs. Renda Blackler, 948-0571

**Events of Interest**

IEEE  

April 21-23—Underground Residential Distribution Conf., Chase Park Plaza Hotel, St. Louis, Mo., IEEE. R. C. Graham, Rome Cable Div., ALCOA, Rome, N.Y.


May 5-6—5th Annual Symposium on Human Factors in Electronics, San Diego, PTGHE. Dr. Mel Freitag, 1910 Shire Dr., El Cajon, Calif.


May 11-13—NAECON (Nat’l Aerospace Electronics Conference), Biltmore Hotel, Dayton, Ohio, PTGANE/Dayton Sec./AIAA. Yale Jacobs, 1917 Burbank Dr., Dayton, Ohio.

**Prof. Calahan**
Military Electronics 8:00 P.M.  •  Wednesday, March 18

Overseas electronics—an opportunity
S. V. Hart, director, Electronic Engineers International
Place: Lockheed Auditorium, Bldg. 202, Palo Alto
Dinner: 6:30 P.M., Rick’s Swiss Chalet, 4085 El Camino Way, Palo Alto
Reservations: Victor Conrad, 326-4000, Ext. 2212 by March 17

Reliability 8:00 P.M.  •  Monday, March 16

Action to attain reliability in Air Force space systems
Place: Room 100, Physics Lecture Hall, Stanford University
Dinner: 6:30 P.M., Ed’s Chuck Wagon, El Camino Real, Mountain View
Reservations: Tom Kim, 739-4321, Ext. 24211, by March 16

Peter Lee, past chairman of the section (IRE). Professor Van Valkenburg, and
William A. Edison, section chairman, after the PTGCT chapter meeting. More than 50
members attended.

Nicholas Kordalewski, chairman of the PTGCT chapter organizing committee, with Ivan
Frisch, University of California, and Daniel Nemirov, Ampex, members of the committee.
INCORRUPTIBLE OBSERVER

Cecil H. Hayes of the Lawrence Radiation Laboratory at Livermore discussed closed circuit television developments in a nuclear research laboratory at the January meeting of the East Bay Subsection.

The laboratory uses some 60 closed circuit television systems as conveniences and necessities in conducting its work. Mr. Hayes discussed the use of television in such varied roles as an incorruptible observer in high-degree security surveillance, a safe extension of operators' and observers' eyes in explosive and other hazardous atmospheres, and the indispensable observer for safety and control during the operation of water-cooled reactors.

Feature display of the evening was a vidicon television camera of 2½-inch diameter used in geological surveys. This device is a solid-state camera capable of operation in a small-diameter bore hole in the earth to depths of 2,000 feet. It features a self-contained light source, focusing and zoom capabilities, and transmits picture information to the surface on coaxial cable. Two models are in current use and differ in the following manner: one model looks straight down the hole (3-inch diameter and larger) and can report on a view of about three feet radially from the camera, while the other model looks normal to the hole axis through a mirror, simultaneously viewing a compass for directional bearing.

The imagination-tickler of the presentation was a description of an experimental system for viewing and recording a high-speed transient event in a hazardous area. The desired capability is to obtain a photograph, actually a radiograph, of some event during a less-than-one-microsecond interval. The system under evaluation presently comprises a radiographic orthicon having a gated photocathode that is told to see only one frame of the high-speed event, then transmits its stored information on to a monitor which is photographed by conventional techniques. Mr. Hayes chose as an example application for such a device a manufacturer of explosively driven studs who was experiencing failures of his product. The man can observe the performance of the stud at each stage of being driven home by choosing the appropriate waiting and viewing period for successive shots, and gaining enough information to correct his deficient product.

The speaker is responsible for the installation, maintenance, and operation of industrial television equipment at the lab, and acts as consultant for applications at Berkeley and abroad.

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I have a friend in the business, (who hasn't helped us)
My company has group benefits, (only while I'm there)
Our parents would help my family, (with their life savings?)
I can't afford more insurance, (or to die, either?)

But seriously, if you have used some of the above, but recognize your financial program is just as important to your family's well being as regular health checkups, CALL me for a complete program analysis (there is no cost or obligation).

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Cecil H. Hayes describing borehole TV camera to James B. Wright, left, and Jack W. Savage, chairman and vice chairman of the East Bay Subsection.
Ampex is now in the printed circuit business. And we're eager to please.

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Vidar Corporation ................ Moxon Electronics
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Stone & Assoc., Jay
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Walter Associates
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White & Company
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Welco, Inc.
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Wright Engineering
126 - 25th Ave., San Mateo; 345-3157

March 1, 1964
Following are the names of individuals who have been elected to current membership.

C. L. Axell          M. W. Howell
J. E. Barry          S. Ito
L. E. Best           R. K. Johnston
F. S. Boxall         J. H. Mackenzie
J. L. Buwegardner    C. F. Noll
R. L. Cox           D. M. O'Meara
D. S. Farr           D. C. Schnar
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