Chairman's Message

by Jack Reesy

The Denver Section is sponsoring the dedication of a plaque to be installed on the obelisk at Fort Laramie, Wyoming commemorating the transcontinental telegraph. The Denver Section has the responsibility to plan and host this Milestone Dedication Ceremony. Mr. John Martin, Denver Section History Committee Chairman, is the force behind this project. To John, I extend my personal congratulations on a job well done.

The actual dedication ceremony will be held at Fort Laramie at 10:30 a.m., Sunday, August 5, 1990. A large contingent of IEEE members from the Denver Section would make this an outstanding program.

The budget for 1990 was a very important subject of the February 28 Denver Section Board Meeting. No major changes from the previous year were made to the new budget.

The quarterly Executive Committee Meeting is scheduled for 7:00 p.m., March 14, 1990.

The monthly Executive Board Meeting is scheduled for 7:00 p.m., March 28, 1990. Both meetings will be held at 2420 W. 26th Avenue in building D.

The IEEE Denver Section expresses its sincere appreciation to John Tierney at Public Service Company of Colorado for his effort in working with the Denver Section membership database.
Society Chapter Meetings and Information

Joint AP/MTT/GRS
Antennas and Propagation, Microwave Theory and Techniques, Geoscience and Remote Sensing

Tuesday, March 13, 1990
National Institute of Standards and Technology
325 Broadway, Boulder, Room 1103
4:00 - 5:00 p.m.

Speaker
Dr. Michael Wengler
Department of Electrical Engineering
University of Rochester

"Submillimeter Heterodyne Detection with Superconductive Electronics"

A superconductive tunnel diode called a SIS is an extremely sensitive detector of signals at frequencies of 100 GHz or higher. In fact, it is capable of detecting every photon that it absorbs. For spectroscopy of signals from 100 to 760 GHz, heterodyne receivers using an SIS as the mixing element, have demonstrated lower noise levels than any other technology. These receivers have been used for 100 to 260 GHz radio-astronomy at radio-telescopes around the world since about 1979, and have recently been used up to 500 GHz.

This talk will discuss these SIS mixers, including the underlying physical principles of the SIS diode and its interaction with radiation, the design of SIS mixers, and the fabrication and testing of these mixers. Various SIS receivers in use on radio telescopes will be shown. The progress of our work with the quasi-optic SIS will be reviewed. Fabrication techniques for SIS diodes will be described.

Reservations are not required.
Please call John Dunn at 492-5847 if you have any questions.

Reliability Society

The Software Reliability Forum meets every second Wednesday of the month from 2:00 - 4:00 p.m. For information, please call Rich Karch at (303) 673-6223.

Joint PES/IAS
Power Engineering/Industry Applications

Thursday, March 15, 1990
Brooklyn's Saloon and Restaurant
2644 W. Colfax, Denver
572-3999
6:00 p.m. Social
7:00 p.m. Dinner (optional @ $10)
8:00 p.m. Meeting

Speakers
Malin Jacobs
U.S. Bureau of Reclamation

"System Harmonics and Effects on Relays"

U.S. Bureau of Reclamation has done extensive investigations on electric power system harmonics and their effects on the relays applied to protect the electric power system. Malin will present some of the findings and also some of the U.S. Bureau of Reclamation conclusions.

Reservations are required. Please call Rory Laiho, (303) 924-7534.

CS/ITS
Computer/Information Theory

Thursday, March 15, 1990
Exabyte
1745 38th St., Boulder
7:00 p.m.

"Helical Scan Technology"

There will be a presentation on Helical Scan Technology and its role in the tape backup industry. The presentation will be followed by a tour of the Exabyte facility.

How to get there
1-25 to U.S. 36 to Boulder. Exit on to the Foot hills highway. West (left) on Arapahoe to 38th St, right on 38th St. to Exabyte building. Meet at eastmost building. There is a lighted "Exabyte" sign over the entrance (main lobby).

Precollege Education in the United States

Americans believe that education is the foundation of the democracy, economy, and opportunities they've enjoyed for more than 200 years. The United States has built the largest education system in the world, currently spending more than $300 billion a year to educate 58 million students in primary and secondary schools, colleges and universities.

More Americans now go to school for more years than students in any other nation. Today more than 60 percent of U.S. high school graduates continue with some form of higher education. A quarter of American workers are college graduates.

Unfortunately, measuring only the time spent in school does not provide an accurate appraisal of what people learn. Elementary and secondary school students from nations that compete economically with the United States consistently outperform U.S. students in mathematics, science, and reading tests. Eighty-five percent of workers in the U.S. labor force have completed high school. However, 40 percent of today's high school graduates cannot read at the ninth-grade level. Many entry-level workers lack the basic skills necessary to understand training manuals, which costs industry an estimated $25 billion a year in lost productivity and remedial education fees. Losses of this magnitude represent a serious handicap to firms trying to compete in world markets.

To maintain a competitive edge, American industry must continue to make creative scientific and engineering advances and produce high-quality products. Such developments can be accomplished only if the nation ensures that its future workforce will have the scientific and technical training necessary to perform effectively on the job.

What Does the Future Hold?

Today, fewer American students are preparing for and choosing careers in science and technology. Yet the demand for scientifically and technically trained workers continues to grow.

Based on recent declines in engineering college enrollments, the Task Force on Women, Minorities and the Handicapped in Science and Technology, established by the U.S. Congress, predicts that by the year 2010 the United States could experience a shortage of as many as half a million engineers and scientists. In Changing America: The New Face of Science and Engineering, the Task Force points out that:

- Our most experienced scientists and engineers, recruited after Sputnik, will be retiring in the 1990s. Meanwhile, by the year 2000 the number of jobs requiring college degrees will increase dramatically. The educational pipeline—from kindergarten through the Ph.D. level—is failing to produce the scientifically literate and mathematically capable workers needed to meet future demand.

...Continued in the April Outlook

University of Colorado at Denver
The Division of Extended Studies and the Department of Electrical Engineering present
Short Courses in Electrical Power Systems & Machines

We are conducting a series of one-day, eight-hour short courses on topics in electrical power systems, machines, and energy. These courses serve as professional updates for practitioners in the electrical engineering field. The next course is:

Symmetrical Components: Theory & Applications
Session One Friday, April 20 - Denver
Session Two Friday, April 27 - Fort Collins

Program cost: $225 per participant. For two or more employees from same job site: $200 per participant. The cost includes registration, refreshments, lunch, and the course manual.

To receive a program brochure, or to be added to the short course mailing list, contact Arne Arnesen, CU-Denver Director of Corporate Programs, 893-8521.

1990 IEEE Area A Student Paper Contest
by Don Cottrell

One of the most important IEEE activities is the student paper contest, which the Denver Section helps sponsor as an annual event. This year, the contest will be held at the University of Colorado in Boulder, on Saturday, March 3rd. The papers presented by the students are usually technical in nature, but can also cover management or societal aspects of subjects related to areas of IEEE concerns. The contest prizes are provided by the Denver Section, and they are as follows:

The first place winner and student branch of that school both will receive $150.

The second place contestant and student branch of that school both will be awarded $100.

The third place contestant and student branch both will receive $75.

The first and second place winners of this contest will then compete in the Region 5 Paper Contest.

There are fourteen schools in Area A from Colorado, New Mexico, South Dakota, Texas, and Wyoming. Typically, one or two of Area A's top contestants are also winners in the Region 5 Student Paper Contest. Last year's first place winner in Region 5 was Cheryl Frierson from the University of Southern Colorado and Area A. We wish this year's Area A Student Paper contestants similar success.

Overlook Advertising

Yes, I want to advertise in the RockIIEEE Overlook. Please place the following ad in the next issue(s) of the Overlook (circle one):

Ad Size	Rate
Business Card	$25.00/mo.
1/8 page	$60.00/mo.
1/4 page	$150.00/mo.
1/2 page	$250.00/mo.
Full Page	$400.00/mo.
Insert B-1/2 x 11	$200.00/mo.

Business card ads must be actual business cards. All other ads must be provided in camera-ready format or additional set-up charges may apply. Inserts must be provided (quantity approx. 3000) and delivered to the printer.

Deadlines
April 1990 newsletter, March 2
May 1990 newsletter, April 4

Please make checks payable to Denver Section IEEE. Send business card or ad copy and check to: Anita Vanberg, dba Trade Services, P.O. Box 4056, Englewood CO 80155-4056, 220-8042.

Schedule of Conferences and Meetings

Feb. 3 - 10, 1990 Vail Aerospace Applications
April 17 - 20, 1990 Vail 13th Annual IEEE Workshop on Design of Testability
April 23 - 25, 1990 Denver Indium Phosphide & Related Mat.
June 17 - 21, 1990 Colorado Springs Utilities Communications
March - April, 1991 Fort Collins Region 5 Conference
June 23 - 27, 1991 Denver International Communications Conference
May 11 - 13, 1992 Denver Vehicular Technology Conf. (VTC '92)
Sept., 1995 Denver Petroleum & Chemical (PCIC)

Leo Mallette (213) 334-2909
Richard Day (714) 863-0350
T.W. Williams (303) 924-7692
Jim Coutts (303) 231-1261
George Stoll (303) 571-2677
Tom Mills (303) 229-3737
George Flagg (303) 452-6111
Russ Johnson (303) 796-9100
Don Cottrell (303) 871-3752
John Nelson (303) 431-7895

Proposed Conferences and Meetings
IAS 1994 - 1995
ACM/IEEE Design Automation 1994
PES Joint Power Generation 1994
PES Summer Meeting 1995
MTT 1997
Transmission & Distribution 1997
ITC 1997-2000
The Institute of Electrical and Electronics Engineers - Denver Section

Executive Board

Chairman
John R. Reesy
Public Service of CO
2420 W. 26th Ave.
Suit D
Denver CO 80211
480-6940

Sr. Vice Chairman
Gary A. Peterson
Public Service of CO
5525 E. 38th Ave.
Denver CO 80207
329-1506

Vice Chairman
Members Services
H. Paul Meisel
Microsemi Corp.
800 Hoyt St.
Broomfield CO 80020
469-2161

Vice Chairman
Student Activities
Don Cottrell
Engineering Dept.
University of Denver
Denver CO 80208
871-3752

Secretary
J.A. Tony Thomas
Automatic Switch Co.
5161 E. Arapahoe Rd.
Suite 410
Littleton CO 80122
779-6990

Treasurer
Lew Beck, Jr.
Petersen Company
4949 Colorado Blvd.
Denver CO 80216
939-6322

Past Chairman - Keith Henderson, Electric Power Testing, Inc. 428-1655
Professional/Industrial Liaison - Dennis Edwardson, Black & Veatch Engineers, 671-4245
Student Branch Activities - Doyle Ellerbruch, Metropolitan State College, 556-0007

Executive Committee (Includes Executive Board)

Standing Committee Chairman

Society Chapters -
Educational Activities - Pankaj K. Sen, EE & CS Dept., Univ. of CO Denver, 556-2872, 556-2685
Conferences - John Tary, Tri-State Generation and Transmission Association, 452-6111
Awards - Charles Wright, Public Service Company of Colorado (retired), 233-5553
Student Fund - John Richards, Public Service of CO, 329-1177

Executive Committee (Ex-Officio Members)

Subsection Chairman

Black Hills - (Acting Chairman) Dr. Larry Simonson, Electrical Engineering Dept, South Dakota School of Mines & Technology, Rapid City, SD, 57701, (605) 394-2459
Centennial - Louis Thomas "Tom" Mills, Hewlett-Packard Company, Fort Collins CO 80525, 229-3737

Society Chapter Chairmen

Aerospace and Electronics - Henry Rackley, Ball Aerospace, 690-1600
Electromagnetic Compatibility - Andy Anderson, Martin Marietta Aerospace, 971-6422
Engineering in Medicine and Biology - Darrell Jones, University of Colorado Health Sciences Center, 270-8552, Jochen Edrich, University of Colorado Denver, 759-4002
Joint Antenna and Propagation/Microwave Theory and Techniques/Geoscience and Remote Sensing - John Dunn, University of Colorado, 492-5487
Joint Computer/Information Theory - Rory Laiho, IBM, 924-7534
Joint Communications/Vehicular Technology - Ken Shugge, Martin Marietta Information and Communications Systems, 977-9164

Joint Electromagnetic Compatibility/Instrumentation Measurement - Richard Groves, Colorado School of Mines, 273-3677
Joint Power Engineering/Industry Applications - John Barnick, ABB Power T & D Co., 969-0391
Laser & Electro Optics Society - Arun K. Majumdar, University of Colorado Denver, 556-2715
Power Engineering - Kenneth McBryde, Colorado Ute Electric Association, 249-4501
Reliability - Juan Hernandez, (719) 590-8880 x410

Senior Past Chairman - Michael J. Foley, Forensic Engineering, 730-7707

The Institute of Electrical and Electronics Engineers
Denver Section
P.O. Box 4056
Englewood CO 80155-4056
Phone: 220-8042

The Month at a Glance

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Reliability Forum

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