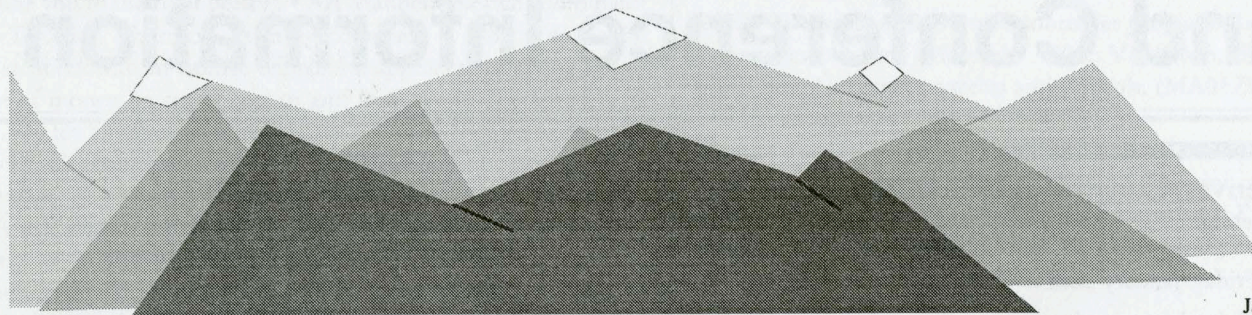


RockIEEE Overlook



January 1994

Sitting in THE chair

Darrell Sabatka, Section Chairperson

The holidays have come and gone. I hope you had a happy holiday season. I and the Executive Committee wish you a healthy and prosperous new year. I sincerely wish you obtain all your personal and career goals for 1994.

As we start a new year, we usually start with new budgets at home and at work. IEEE operates the same way. The Board completed the 1994 budget at the November 29, 1993 Board meeting. I might add that we held our 1993 budget to planned levels. In 1994, the section income will be approximately \$24,500 and our expenses will be 29,000. Yes, this is deficit spending. Hey, if the Federal Government can do it, so can your IEEE Section. Actually, the Board is very aware of this deficit. The Board reviews each line item and our most able Treasurer uses the most advanced accounting software to monitor and balance our budget.

The section income varies year to year due to the amount of member rebates the Section receives from Headquarters and conference distributions. The Section has significant cash reserves to cover our deficit years. Several large conferences are scheduled in the next several years which will replenish our reserves. The section will not raise your taxes. Unfortunately, our membership dues did go up.

Speaking of up coming conferences, the Denver Section was notified that the IEEE Regional Activities Board has selected Denver as the location for the 1996 Sections Congress. Denver won over Atlanta and the Twin Cities sections. John Martin will chair the local organizing committee. Denver won because of the central location, international flavor, and enthusiasm of the nominations committee. Past Section officers are responsible for positioning the Denver Section to land Sections Congress 96. John Tary keeps adding conferences to bring in money for the Section.

One of the responsibilities of the Section Board is to carry out the goals and requests established by the Executive Committee. With the recent elections, vacancies exist for the Educational Activities Chair, Society Chapters Chair, Membership Chair, and Pre-college Student Activities Chair. I need your help to fill these positions. One of my responsibilities as chair is to recommend replacements to the Section Board. Are you interested? Do you know an IERE peer that is a leader with a desire to serve the membership? These positions come complete with budgeted money, unlimited opportunities for advancement, IEEE credit card, and most basic of all, free food.

Call me or any board member for more information.

Sidetones

Signals from/about the Membership

• We wish to express the Section's appreciation to **Bryce Chapman** and **Mark Shriver** for them serving on the Conference Committee of the 1993 LAN Fair. Through their efforts the IEEE was represented on the Technical Program with contributed papers. Thanks! • Do you know or remember who named the *Rock-IEEE Overlook*? **Carl Stubenrauch** with NBS (NIST), Boulder did and his prize was an HP 45, donated by Hewlett Packard. Still use the HP 45 Carl? • The January 1994 printing and distribution of the *Overlook* is 5200. • We welcome **Phil Gold** as an associate editor to our publication. Phil is the Newsletter Editor for IEEE Industrial Electronics Society and

please continue on page 4

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*The Denver IEEE Consulting Network is starting up!
Call Tim Davis 466-1117 to get involved!*

Society Chapter Meetings and Conference Information

IEEE Denver Consulting Network Charter Meeting.

Date: Friday, January 28th @ 7:30am.
Location: To be determined.
Speaker: Dan Ganousis
"New Trends in Consulting"
Contact: Tim Davis @ (303) 466.1117

IEEE Joint Vehicular/Communications Societies Chapter Meeting

Date: Tuesday, January 11th, 1993
6:00 pm - Dinner (The Parlour,
846 Broadway, Denver)
7:00 pm - Program
Location: Television Station KUSA, 500 Speer Blvd, Denver
Speaker: Myron Oliner, VP of Engineering/Chief Engineer
"KUSA's News Gathering Capabilities, Overview of Studio
Equipment and Tour."
Future: February 8th meeting will feature Scott Zumbahlen of
SynOptics and a presentation on the state-of-the-art
bridges and routers for the computer networks.

Laser and Electro Optics Society Chapter Meeting

Date: Thursday, January 20th, 1994
7:30 pm
Location: National Institute of Standards and Technology (NIST)
325 Broadway, Boulder, Colorado
Speaker: Dr. Archibald W. Smith
Storage Technology Corporation
"Advances in Optical Data Storage"

IEEE Denver Section Awards Presentation & Membership Meeting

Date: Wednesday, January 19, 1993
6:30 pm - Cash Bar

7:00 pm - Dinner
7:45 pm - Awards and program
Location: Radisson, North Denver, Graystone Castle
83 East 120th Avenue (I-25 and 120th)
Thornton, Colorado
Cost: \$15.00
Reservations: Marilyn Peterson at 329-1615 by Friday, January 14th
Speaker: Dr. Gary Leininger
Professor of Engineering
University of Colorado, Denver
"Electrical Engineering Education in the Front Range"

Dr. Leininger will present an overview of the academic and research opportunities in electrical engineering at various universities in Colorado. Specific topics will include the new ABET guidelines for academic accreditation in EE, perceived strengths in university department academic programs, research laboratories and centers across the front range, and a discussion of the new integrated research program in manufacturing at CU-Denver.

IEEE Electromagnetic Compatibility
February 8, 1994 @ Woodward Governor Co.
Call Ev Evans, (303) 761-9447

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Sidelines: continued from page 1

brings many years of experience to our group. • If you are looking for good technical program, please call Robert Mohling, electro-optics/Cryogenics Division, Ball, (303) 939-6551 and he will guide you to the right person. • Art Mander, research coordinator at Tri-State, Thornton, recently converted a 1980 VW Rabbit Hatchback into an electric vehicle. He appears to be saving a bundle of money on travel cost to and from work. Top speed is 50 m.p.h. for 50 miles or 40 m.p.h. for 70 miles. Nice going Art. • In 1990, 22 people were killed by handguns in Great Britain, 13 in Sweden, 91 in Switzerland, 87 in Japan, 68 in Canada, and 10,557 in the United States (The Urban Age, Urban Violence Issue, Summer, 1993) • "By participating in the IEEE Standards program, you can directly impact the future direction of technology and, in the process, advance your professional stature", Page 5, IEEE Standards, Supporting World Standards brochure, IEEE Standards, 445 Hoes Lane, Piscataway, NJ 08855-1331. To our seven IEEE members in Zip Code 80807 land east of Denver, we send greetings. They are David Bryan and John Zambo - Fort Morgan, Terry Hill - Akron, Paul Schmidt. Daniel Jones, David Rewert and Keith Richling - Sterling.

Engineers Seeking Employment Quality engineers available.

The following IEEE members are seeking employment. If you have a position open or know of one please contact Marilyn Peterson at (303) 329-1615. Please give your name, address, phone number and the special identification code to Marilyn. She will have the member contact you directly.

1992 BSEE Graduate. Strong technical and computer background seeks engineering employment. 6 years experience as field/bench technician and 5 years programming low and high level languages. (A2GO1)

Innovative Engineer. I am a solution oriented, technically current individual experienced in processing control monitoring, process characterization/improvement, continuous improvement, PLC, motor controls. Event driven real time programming background-DOS, OS/2, UNIX and others- Manufacturing R&D in machinery controls instrumentation. (A7G02)

MSEE. Experience with PLCs instrumentation controllers and power electronics. Developed 6805 controller for small machine. Three years supervision experience with large manufacturer. Prefer design or R&D position. Will relocate (A19W01)

Computer Science Ph.D. 30 years experience (14 years aerospace). Designed, implemented, managed and taught commercial application, scientific system and operating system development from single embedded microprocessor to some of the largest distribution supercomputer systems. (A22BO1)

B.A., Mathematics. 20 years experience software development, software management, project and program management. Strategic planning/process innovation. Perform SEI maturity assessments. State Government/Fortune 50 background. (A26B02)

BSEE. Two years of 3480 tape controller programming. SCSI-2, diagnostics. Others: Motorola 6800, VM/CMS, REXX, 'C'. GPIB bus. Also power systems and controls. (MA01Z01)

Human Factors. Experience, Product and system development, assurance and manufacturing. Telecommunications; Videotex, Laboratory and field usability testing. Occupational Ergonomics. Enjoy diverse teams; strong presenter. Creative and practical. Take multiple roles. MA plus. (A28K01)

Professional engineer with BSEE and BSBA degrees. Experience Record: 9 years telecommunications, 7 years test, 3 years marketing, 1 year project engineering and a proactive supervisor. (JY24H01)

Masters level professional. I have 7 years Systems Engineering experience and am seeking an opportunity in product development or test in Biomedical Electronics, Control Systems or Communication Electronics. Willing to relocate (Au03H02)

BSEE. Problem solving and adaptable individual, seeking opportunities in product development for instrumentation or communications. Strong customer support and technical writing background. (SO4I01)

Software Development Manager. Know 2167A, TQM tools, SEI and ISO 9000. Managed development and system integration/test on variety of hardware, language and DBMS in engineering and scientific application, planning, problem solving. (S04L02)

December BEEE. graduate. Have substation control and protection experience. Seeking entry level engineering employment. Extensive computer experience. Vice-Chairman IEEE student chapter. Passed the EIT exam 4-93. (S28S01)

Communications Application Engineer. Over twenty years in communication applications engineering with extensive project experience in designing, purchasing, and installing Data, Voice, Telemetry, SCADA and Pictorial networks over radio, telephone, cable, fiber and TWPR, microwave and satellite communications with network switching and management facilities. (001WO2)

Hardware/software Engineer. Over 10 plus years in computer hardware software experience as well as instrumentation seeks employment with environmental company. Knowledge of computer PLC based monitoring systems and sensors. (O01S02)

Positions Available

EE Test Engineer

TRW Vehicle Safety Systems, Mesa, Arizona. Hardware and software aspect of data acquisition and processing in manufacturing environment. Application of advanced technologies such as neural networks and fuzzy logic is highly encouraged. Fax resume to (602)396-1209

Operations Team Engineer (6 positions)

Background: Electrical appliance, instruments, equipment, automotive, medical devices Experience in: R & D engineering; manufacturing engineering salary range \$55,000-\$90,000 Location: Ohio (Company paid relocation). Top 50 benefits package. Fax resume to (813) 758-0547

Cellular Communications

Wanted an industry standards representative for personal communications/microcellular systems. Represent industry leader at forums to develop standards in TIA and ANSI. Rep at TR46 and TR45.4 subcommittee. Manage tech standards in company and interpret market requirements. Five years experience technical standards, speech transmission. EE or Computer engineer. To \$75,000 plus bonus. Resume to McHale & Associates, 1001 4th Ave. Suite 3200, Seattle, WA 98154.

Electrical Design Engineer (Denver)

At least one year of experience, preferably with a consulting firm, Must have strong CAD experience, performing complex-based calculations. Salary depending on experience. Call Denise at (303) 425-8721.

Director of Engineering

Supervise manufacturing and design department of approximately 10 individuals. Extensive rf and microwave design and technology experience. Product development, scheduling budget planning experience essential. Excellent opportunity for versatile, experienced individual. Location, Westchester County, New York. Call Elizabeth Kangas Homsby, (203)834-1111, FAX (203) 834-2686,

Product Development Engineer Power Electronics

Position will be responsible for developing advanced technology control, driver and protection circuits and customer interface circuits for 400 Hz inverters up to 300 kVA. Candidates must have design experience in the field of power inverters and be familiar with all critical aspects related to the design of such products such as alternative pwm schemes, snubbers, harmonic distortion, voltage regulation, response time and stability issues and factors influencing audible noise and EMI. Location Central Connecticut. Contact, Catherine A.H. Mathews, (203) 834-1111, FAX (203) 834-2686.

Variety of Positions. Computer Engineers, Field Engineers, LAN Systems, MultiMedia, Product Engineers, Network Hardware Development Engineers, Software Managers and more: Contact

CONSERVA RESOURCES. INC., (718) 981-8343, Fax (718) 981-8864

Applications Engineer. Two years design or application experience in mixed signal components and micro controllers used for machinery. DSP experience a big plus. 10 to 15% traveling withing the U.S.A, BSEE, \$40k-50k, location Wilmington, MA, Contact Deborah Auaire at (508) 481-9500, FAX (508) 481-8519.

Telecommunications Engineers. (Fiber optics, satellite, transmission systems, lightwave, facility development and data support: Contact Sid Wugalter at (602) 279-5544, FAX (602) 264-9856

ATTENTION!

Somethings on fire in this column!

• **Industry 2000 Workshop.** May 12-13, 1994, Denver, Colorado solves a need faced by electrical engineers trying to maintain technical currency during a time of rapid technological change. Many organizations that have traditionally provided steady employment are "right-sizing" and "flattening" to remain competitive No longer can young engineers rely on the mentoring and training once taken for granted. Experienced engineers face similar challenges as technology moves beyond the levels that were current at the time of their formal education. This workshop will identify continuing education needs of industry and define a strategy through which IEEE, industry and academia can work together to maintain the technical vitality of engineering professionals. The Workshop participants all grapple with practical issues based on the experience of fellow participants and their organizations. Industry 2000 will offer a rare opportunity to develop effective continuing education in the face of worldwide competition. For additional information, contact John Meredith, (719) 590-1900.

• **The Ninth Annual Battery Conference** on Application and Advances will be held on January II - 1 3, 1994 at California State University, Long Beach, CA. Due to increasing emphasis on high performance and reduced costs, technical challenges and business opportunities have increased in battery-interactive electrical and electronic power systems for almost all scientific and engineering endeavors. This conference provides an opportunity for an in-depth examination of issues associated with the analysis, design and selection of batteries and power conditioners that meet the performance and cost goals of various applications. Info... Contact Renee Madrid and/or Nga N. La (310) 985-4605.

• **A new technology called Geographic Information Systems (GIS)** is rapidly changing the way businesses and governments manage data, analyze information and target markets. GIS technology includes the cartographic capabilities of traditional computer mapping systems with a strong analysis system built around a relational database. The University College at the University of Denver has developed a certificate program in GIS. For additional information call 871-3155, ext 213.

• **ISN.** Users and implementors interested in the Integrated Services Digital Network, which utilizes telephone lines to transmit voice, graphics and computer simultaneously, are welcome to attend the 1994 meetings of the North American ISDN Users' Forum,. The NIUF will meet first on Feb 8-11, 1994, at the Hyatt Regency Tech Center, Denver, CO. For more information, contact Dawn Hoffman, (301) 975-2937, fax (301) 926-9675.

• **The National Association of Communication Systems Engineers** has announced its formation as an independent certification organization for education and testing of communications professional. For information on NACSE contact Bob Kile- (303) 689-0825.

Did You Know...

Information on the benefits of your IEEE membership

• What! You aren't a member...Call 1-800-678-IEEE for membership information. Its the RIGHT thing to do.

• The Denver Section will be presenting another employment seminar in March. The employment picture is changing in the Denver Section and not always for the better. If you anticipate the need to change your employment, if you are unemployed, or if you are unhappy in your job, you should attend this seminar. The dates and this seminar will be listed in the February issue. WATCH FOR IT!

PROFESSIONAL ENGINEER REGISTRATION - SUNSET REVIEW

By Michael J. Foley

The 1994 Colorado Legislative session will conduct a "Sunset Review" of the Professional Engineer registration law. The Colorado Engineering Council (CEC) of which the Denver Section is a member, has participated in review of the registration law. of major interest is the definition of "the practice of engineering" and the municipal exemption.

The Section Executive Board supported the CEC original proposal to eliminate the municipal exemption. After meeting with representatives of Colorado municipalities and counties, CEC prepared the draft revision to the law maintaining the municipal exemption as follows:

"Practice of engineering" means the performance for others of any professional service or creative work requiring special engineering education, training and experience and the application of special knowledge of the mathematical and engineering sciences to such professional services or creative work, including consultation, investigation, evaluation, planning, design, surveying, and the observation of construction to evaluate compliance with plans and specifications in connection with the utilization of the forces,

energies, and materials of nature in the development, production, and functioning of engineering processes, apparatus, machines, equipment, facilities, structures, buildings, works, or utilities, or any combination or aggregations thereof, employed in or devoted to public or private enterprise or uses. The term "practicing of Engineering" shall not include acts and services performed by municipalities and counties, or other persons, including but not limited to planning, incidental landscape architecture, minor public work design, construction (including replacement), maintenance, restoration, construction observation, research, the administration or enforcement of laws, regulations, or codes, and the operation of equipment or machinery.

The above draft removes wording regarding "supervision of construction for the purpose of assuring compliance with specifications and design... the last paragraph of the draft maintains the exemption for municipal and county employees.

At the August 4, 1993, Denver Section Executive Board meeting, a Position Statement was adopted to support the removal of the municipal exemption as follows:

The Denver Section Executive Board of the institute of Electrical and Electronic Engineers, Inc. (IEEE) supports the Colorado Department of Regulatory Agencies recommendation that the legislature eliminates the municipal exemption from the Registration Law C.R.S. 12-25-103. This resolution was unanimously passed by the IEEE Denver Section Executive Board at a regular board meeting held on August 4, 1993. it represents the considered judgement of the Denver Section Executive Board rather than the entire IEEE.

After review of the above revised draft, your Executive Board, at its November 29, -1993 meeting reaffirmed the August 4, 1993, Position Statement and will encourage our CE6 representative to support elimination of the municipal exemption.

If you have comments or questions regarding the Sunset Review, please contact Michael J. Foley at (303) 730-7707.

Conferences

...of interest to our members

Jan 11-13 1994 **Ninth Annual Battery Conference on Application and Advances.** Long Beach, CA. Contact Renee Madrid and/or Nga N. La at (310) 985-4605

Jan 17-20 1994 **Power System Relaying Committee Meeting.** Orlando Florida. Contact A.T. Giuliente at (914) 347-5166

Feb 8-11 1994 **North American ISDN Users' Forum (NIUF).** Denver, Colorado. Contact Dawn Hoffman at (301) 975-2937

Feb 10 1994 **The Assoc. of Colorado Telecommunications Professionals.** For Information call (303) 627-6964

- Feb 5-12 15th Annual IEEE Aerospace Application Conference. Vail, Colorado. Contact Robert A. Profet, Trans-Spectrum Corp. (310) 545-9670
- Feb 20-26 National Engineers Week. Paul Meisel (303) 673-9930.
- Mar 7-9 ENTELEC. (Energy Telecommunications & Electrical Assoc.) San Antonio, Texas.
- Mar 16-18 INFOCOM. Denver, Colorado. Call Maclean Hunter 1994 Presentation, INC. (303) 696-6100
- Apr 13-15 Rocky Mountain Health & Safety Conference. Denver, Colorado. Call (303) 373-1937 for more information.
- Apr 24-26 IEEE Rural Electric Power Conference. Colorado 1994 Springs, Colorado. For more information contact Don Werner (402) 636-2585.
- Apr 25-27 American Power Conference. Chicago, IL. Contact 1994 Robert W. Porter at (312) 567-3192
- Apr 26-27 IEEE Wichita Conf. on Communications, Networking & Signal Processing. Wichita, Kansas. Chair, David Gilbert, (316) 522-4981 x354.
- May 4-5 Rocky Mountain Technology Expo (ISA/ERA). Denver, Colorado. Contact Anita Wanberg at (303) 202-8042
- May 8-12 1994 IEEE Substations Committee Meeting. Los Angeles, California. Contact Don Laird (213) 481-4764 or Wayne Block (213) 481-3427.
- May 9-10 UTC Region VIII Annual Meeting. Denver, Colorado. Contact George Stoll at (303) 571-2677
- May 12 The Assoc. of Colorado Telecommunications Professionals. For information call (303) 628-6964
- May 12-13 Industry 2000 Workshop. Denver, Colorado. Contact 1994 John Meredith, HP, (719) 590-1900.
- May 23-27 International Microwave Symposium, MTT-S. San Diego, California. Information: MTT-S Symposium 1994, c/o LRW Associates, 1218 Balfour Dr. Arnold, MD 21012, USA
- Jun 18-23 UTC (Utilities Telecommunications Council). Washington, D.C. 1994
- Jun 20-23 The 6th Joint MMM-Intermag Conference. Albuquerque, New Mexico. Sponsor: IEEE Magnetics Society & American Institute of Physics. Contact: William C. Cain, Read-Rite Corp. (408) 956-3301
- Jun 27/Jul 1 Conference on Precision Electromagnetic Measurements. Boulder, Colorado. Call for papers contact: 1994 Gwen E. Bennett (303) 497-3295. For more information contact: Fred McGehan (303) 497-3246
- Sep 8 The Assoc. of Colorado Telecommunications Professionals. Information (303) 628-6964 1994
- Oct? UTC Fall Technical Conference. Fort Collins, Colorado. Contact Mike Schmitz at (303) 299-5269 1994
- Oct 2-6 IEEE Industry Application Society Annual Meeting. Denver, Colorado. Chairman: Paul Meisel, MagneTek 1994 (303) 673-9930

- Nov 10 The Assoc. of Colorado Telecommunications Professionals. Information (303) 628-6964 1994
- Nov 27/Dec 1 GLOBECOM'94. San Francisco California. 1994 Call for papers contact: Dr. Dale Harris, Stanford University (425) 725-9868
- Sep 10-14 IEEE Petroleum & Chemical Annual Meeting. Denver, Colorado. Chairman: John Nelson, Nelson Engineering (303) 431-7895. 1995
- Jul 27/Aug 2 IEEE Power Engineering Summer Meeting. Denver, Colorado. Chairmen: Gary Peterson, Public Service Company of Colorado (303) 329-1506 1996

Book Review

The Life of Herbert Hoover: The Engineer, 1874-1914, by George H. Nash, W.W. Norton & Company, 1983, 768 Pages.

Say whatever else you like about Herbert Hoover, but understand this about the first president born west of the Mississippi River: The man was a consummate businessman and politician. Work and success were what mattered to the young hoover. His well-organized mind enabled him to attend Stanford at age 17 and take on work there that helped finance his college education. He was a member of the surveying team at Stanford, and used the experience and his geology degree to land an early job with the U.S. Geological Survey. He understood how to turn business opportunities into money making operations, and by the age of 27 he was earning \$75,000 a year. A fortune in the early 1900s. Hoover's drive and work ethic eventually propelled him into the White House.

Locate this excellent book to read about the interesting life of the engineer-president.

Builders

I watched them tearing a building down,
A gang of men in a busy town;
With a ho-heave-ho and a lusty yell
They swung a beam and the side wall fell.

I asked the foreman, "Are these men skilled,
And the men you'd hire if you had to build?"

He gave a laugh and said, "No, indeed!
Just common labor is all I need.
I can easily wreck in a day or two
What builders have taken years to do."

And I thought to myself as I went my way,
Which of these roles have I tried to play?

Am I a builder who works with care,
Measuring life by the rule and the square?
Am I shaping my deeds to a well-made plan,
Patiently doing the best I can?

Or am I a wrecker, who walks the town
Content with the labor of tearing down?

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Transducers and Sensors

by John Webster

Describes the principles, design, and application of many types of sensors. Also includes discussion of design of circuits for interfacing sensors, processing of signals, and calibration.

Program includes a study guide, three videotapes, final exam, and textbook, *Interfacing Sensors to the IBM PC*, edited by Willis J. Tompkins and John G. Webster, Prentice-Hall, 1988.

For a full description of the program and complete ordering information, call IEEE at 1-800-678-IEEE

Or write to: IEEE Educational Activities
445 Hoes Lane, PO Box 1331
Piscataway, NJ 08855-1331



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Send Business cards or copy and check to John Tary, 7739 Spring Drive, Boulder, Colorado, 80303-3036. Make Checks payable to IEEE Denver Section. We will invoice if so desired.



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IEEE's 37 technical societies conduct local activities worldwide. Members meeting members to share the latest technical developments.

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Society Chapters Bob Struthers, United Engineers, (303) 843-2235
Conferences John Tary, Tary Associates, (303) 499-2164
Awards Gary Petersen, Public Service Company of Colorado, (303) 329-1506
Student Fund Edward Pitchkolan, (303) 740-2632
Professional/Industrial Liaison Tony Thomas, GE Micro Switch Control, Inc., 792-1673
Nominations H. Paul Meisel, MagneTek Corporation Automation Technologies, 673-9930
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Wyoming
(307) 766-6268

RockIEEE Overlook

EDITOR:

John Tary
7739 Spring Drive
Boulder CO 80303-5036
(303) 499-2164
(303) 673-9936 Fax

PUBLISHER:

Tim Davis
(303) 466-1117
(303) 466-1118 Fax

Chapters

Chapter	Chair	Vice Chair	Secretary/ Treasurer
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Joint Vehicular Technology/ Communications	Mark Schriver 794-0838	Dave Illiff 347-1942	Lee Castellion 229-6540
Joint Computer & Information Theory	Bryce Chapman 673-4762	Shadzaad Bhatti 673-8915	
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Power Eng. (W. Colo.)	Kenneth McBryde 249-4501		
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The Institute of Electrical and Electronics Engineers



Denver Section
7739 Spring Drive
Boulder CO 80303-5036
(303) 499-2164
(303) 673-9936 fax

RockIEEE Overlook
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IEEE Denver Section



11/29/93 DNVR
DAVID B RICHMOND
2921 SO SIDNEY COURT
DENVER CO 80231