



# IEEE MAGNETICS SOCIETY NEWSLETTER



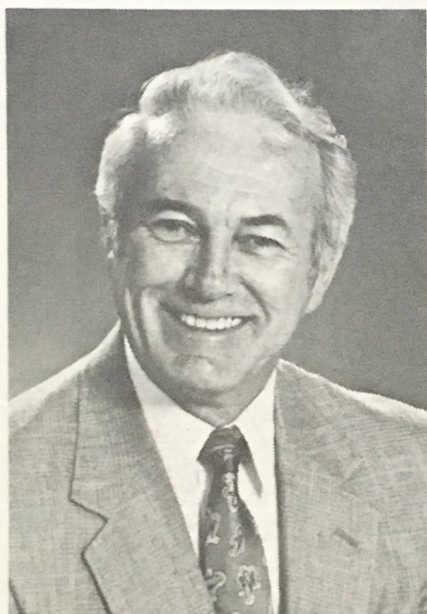
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October 1990

CRAIG PERLOV, EDITOR

## DIVISION DIRECTOR'S REPORT

B. Leonard Carlson



*Leonard Carlson*

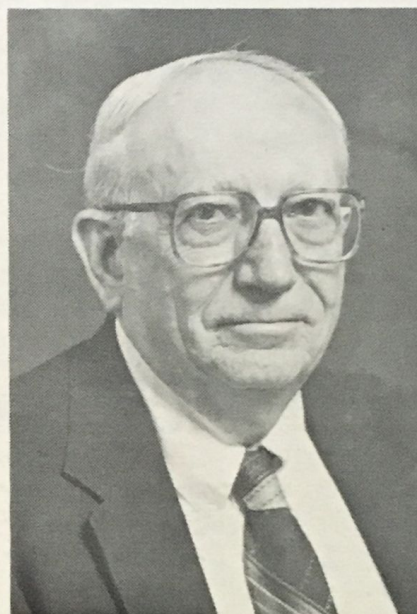
Since the beginning of the year, I have been assigned to several ADHOC and standing committees. This report is intended to give you an overview of what is happening as it pertains to society activities.

ADVOSC, Volunteer Reinstrucing committee. Although not a very popular subject, none the less, this committee was chartered to look at the volunteer structure and determine if changes could be made which would enhance our transnational commitments and responsibilities. The comments, as a result of the preliminary report submitted to the BOD in July of 1989, have now been incorporated in the report. Each society will receive copies of the report and TAB will have the chance to vote on it in November.

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## TECHNICAL PUBLICATIONS REPORT

Chester Smith



*Chester Smith*

The Periodicals Council and the Technical Publications Board (TechPubs) met on the 24th and 25th. The agenda for the two days was quite full and any Society officers wishing to see the minutes should contact Publications Services.

**Timeliness.** The problem of timeliness seems to revolve around two issues. First, author complaints about the delay from the time of submission of a paper until it finally appears. Of course, the review cycle can absorb two or three months, but delays of 18-24 months are not acceptable. The Periodicals Council will be monitoring this situation quite closely as only a few publications are involved. The second source of delay came from Publications Services. Since the transfer to Piscataway is virtually complete, this source of delay should disappear.

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## PHILADELPHIA CHAPTER MEETING

On Tuesday, September 12 the Magnetics Chapter of the Philadelphia Section of the IEEE held its first meeting of the fall season. In attendance were some forty people including Dr. R. Josephs, the current President of the Magnetics Society, as well as Dr. C. D. Grapham, Dr. X. Moyer and Dr. R. Coren who were past officials of the Magnetics Chapter. The featured speaker was Dr. K. J. Strnat, a noted expert on rare earth permanent magnets, who spoke on *Structures, Properties of R-Cc and R-Fe-B Compounds and Techniques of Producing Permanent Magnets*. He was followed by his son, Mr. R. M. W. Strnat, Manager of KJS Associates Magnetics Engineering, who concluded with a talk on *Methods and Equipment for Measurement of the Magnetic Properties of Hard Magnetic Materials*. A special thanks goes out to our industrial host, SPS Technologies (especially Dr. J. Bogatin) located in Jenkintown, PA, who so graciously offered their facilities and financial support to make this meeting a success. What made this session especially noteworthy, is that it is the first meeting of the newly reactivated Magnetics Chapter after several years of inactivity.



*Drs. V. Bogatin and C. Krafft*



*Drs. R. Josephs and B. Lorenz*



*Dr. Karl Strnat*

The IEEE Magnetics Society Newsletter is published quarterly by the Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017. The objective of the Newsletter is to publicize activities, conferences, workshops, and other information of interest to the membership of the Society and technical people in the general area of applied magnetics. Copy is solicited from the S-Mag membership, organizers of conferences, officers of the Society and local chapters, and other individuals or organizations with potentially relevant material. Copy should be sent to Dr. C. M. Perlov, Hewlett-Packard Labs, MS-2U, P.O. Box 10490, Palo Alto, CA 94303.



### Director's Report (continued)

**VIDEO TRAINING COMMITTEE.** This ad-hoc committee is chartered to prepare video training material for societies and chapters. Currently, a video training script has been prepared and taping is being done at the North Carolina State Video Studios in Raleigh, NC. The title of the first tape is *Society Leadership--An Introduction--Your Society and TAB*, approximately 15 minutes, the second tape entitled *Society Organization and Governance*, also 15 to 20 minutes. The script is in approval routing. The third tape planned for this year is *Society Finances* and the outline is being finalized and a preliminary script being written.

**TRANSNATIONAL COMMITTEE.** Comprised of both RAB and TAB directors, this committee is essentially chartered to help enhance the transnational aspects of the IEEE. There are currently four task forces: 1. establishment of an IEEE office outside the U.S. is currently underway with space being provided by the Computer Society in Brussels, Belgium; 2. a task force to establish IEEE relationships with non-IEEE entities; 3. a task force on value added aspects and, 4. international participation. All the above have some impact on societies since societies are, by nature of their existence, transnational.

**EDUCATIONAL ACTIVITY BOARD.** As the TAB representative, I attended the EAB meeting in Vienna, Austria on July 1, 1990. The meeting was held in conjunction with the FIE symposium held 2-5 July 1990.

**AUDIT COMMITTEE.** I'm also a member of the IEEE audit committee which has met two times this year and one of the issues that keeps coming up is General and Administrative (G&A) costs and how should they be recovered. The end result is that the Finance Committee at its meetings on G&A in July received a report that the 1990 General Fund would have a \$2.5M deficit. The committee discussed the possibility of a general dues increase and a G&A percentage of 3.5% to be assessed for services rendered (this was not accepted). The committee discussed various possibilities, as follows: across the board percentage cuts; program reviews by staff; increased dues (\$10 generates \$2.0M); allocation of G&A; increased service rates; conference surcharges; and, new income sharing. The following proposal was recommended for forwarding to Budget Development Committee and BOD:

\$2.00 dues increase for student member;  
\$6.00 dues increase for members;  
reduce deficit \$1M, a 2% reduction in spending;  
ask TAB Long-Range Finance Committee to recommend a G&A mechanism to IEEE Finance Committee for implementation in 1991.

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### Technical Publications (continued)

**Problem Publications.** Some Societies have indulged in the practice of using Transactions issues for Conference Records. TAB has ordered this stopped. One remedy proposed was that the Transactions of any Society doing this be suppressed. It is very unlikely that such drastic measures will be resorted to, but it is being made clear that these "Conference Bricks" (as one member called them--not me!) are not to be used as Transactions

**Technical Content:** In the past, a few Societies, being low on material, have reprinted (with permission) articles that had appeared in the "trade press." This is contrary to IEEE policy, and since it has been some time since we have had a case, it has probably been stopped. Transactions *et cetera* stress research and are heavily biased toward the type of work done by university researchers. A good "how-to-do-it" paper would be turned down on the basis of lack of originality. IEEE magazines are not restrained by the need for total originality and are better vehicles for applications papers than the Transaction-type publications. As more IEEE magazines come along the applications area will be better served.

**Over-length Papers.** Most Transactions papers are fairly short, but once in awhile, one of fifteen or more pages comes through. For some reason, the matter of charging a special over-length page fee was brought up. There is no mandatory page charge for any paper no matter whether it is long or short. Voluntary contributions of \$110 or more may be solicited, but if not forthcoming, cannot be used to reject a paper or discriminate in any way. Publishing an over length paper is strictly up to the Editor and the Society.



## DISTINGUISHED LECTURER PROGRAM

The Magnetism Society is pleased to announce that Ching Tsang is one of the Distinguished Lecturers for 1990-1991. The Distinguished Lecturer Program is intended to provide tutorial overviews of topical subjects in magnetism, to expose students to the excitement and challenges of magnetism, and to introduce developments in magnetism to the non-technical community. Local magnetism chapters, universities, and other technical, educational, and business groups have an opportunity to hear outstanding members of the magnetism community. The cost will be borne by the Magnetism Society. Any interested group should contact the lecturer directly or the program chairman, Jack H. Judy, Department of Electrical Engineering, University of Minnesota, 200 Union Street, SE, Minneapolis, MN 55455, (612) 625-7381.

### HIGH DENSITY MAGNETIC RECORDING

Ching Tsang  
 IBM Almaden Research Lab  
 650 Harry Road  
 San Jose, California 95120

Tel: (408) 927-2094; FAX: (408) 927-2100

Magneto-resistive (MR) sensors have exhibited significant potential and importance in magnetic recording applications. The first part of this talk will be a general introduction to the operating principles of the MR sensor, followed by a discussion of the fundamental issues of linearity and Barkhausen noise, and a comparative analysis of the commonly used biasing techniques for addressing these issues. As an example of MR head applications, the second part of this talk will focus on magnetic recording experiments at the very high areal bit density of 1 Gigabit/square inch. The principal recording components in the head, disk and channel areas as well as their resultant performance will be discussed.

### MERIT SCHOLARSHIP WINNER

The winner of the 1990 National Merit Scholarship, sponsored by the IEEE Magnetism Society, is David R. Liu, son of Nai-Li H. Liu and Shiang F. Liu of Riverside, California.

David will attend Harvard University. He hopes to become a professor and do research in physics or in neurobiology. David has been successful in a number of science fairs and is the recipient of both a Westinghouse Scholarship and a Century III Leaders award.

## EQUIPMENT AWARDS PROGRAM

It is expected that the Magnetism Society will reinstitute the Equipment Awards Program in 1991. It is strongly recommended that those interested should get their proposals ready in anticipation of the final announcement.

### SCHOLARSHIP PROGRAM

We are pleased to announce the 1992 competition of the Magnetism Society Scholarship Program, established for children of Society members through the annual, nationwide National Merit Scholarship Corporation (NMSC), an independent, nonprofit organization.

NMSC's major purposes are, 1) to identify and honor exceptionally talented high school students and to aid as many as possible in obtaining a college education, and 2) to enable business enterprises and other organizations to contribute more readily and effectively to the support of higher education through scholarship grants.

One Magnetism Society Scholarship will be awarded Spring, 1992 to a high school student eligible to enter a regionally accredited U.S. college in 1992 to pursue courses of study leading to one of the traditional baccalaureate degrees.

The Magnetism Society winner will be chosen through the facilities of NMSC from those children of Society members who meet established competition requirements. The winner will be chosen on the basis of test scores, academic record, leadership, and significant extracurricular accomplishments.

The Magnetism Society Scholarship will be a renewable award covering up to four years of full-time study or until baccalaureate degree requirements are completed, whichever comes first. The amount of the stipend accompanying the scholarship will be related to the individual winner's financial situation and the costs of attending the college of choice. The maximum amount that may be awarded is \$4,000 per year; the minimum, \$1,000 per year.

Descriptive material and entry blanks are available from the Program Director at this time. Entries must be returned to the same address by January 1, 1991.

Contact:

Dr. Bernard R. Cooper, Program Director  
 c/o Department of Physics  
 West Virginia University  
 Morgantown, WV 26506



**JOINT MAGNETISM  
AND MAGNETIC MATERIALS  
INTERMAG CONFERENCE, June 18-21, 1991**

The Fifth Joint Magnetism and Magnetic Materials-INTERMAG Conference (5M<sup>3</sup>I) will be held at the Pittsburgh, Pennsylvania Hilton. This meeting combines the Annual Conference on Magnetism and Magnetic Materials and the INTERMAG Conference; *it will also be the only meeting of either of these two major conferences in 1991.* The Conference is jointly sponsored by the American Institute of Physics and the Magnetics Society of the IEEE, in cooperation with the American Physical Society, the Office of Naval Research, the Metallurgical Society of the AIME, the American Society for Testing and Materials, and the American Ceramic Society.

Members of the domestic and international science and engineering communities interested in recent developments in magnetism and its associated technologies are invited to attend the Conference and to contribute to the technical sessions. The scope of the Joint Conference embraces all areas of basic science, applied science and engineering in magnetism. These include experimental and theoretical research in magnetism, the properties and synthesis of new magnetic materials (including superconductors), new developments in applied magnetics (dc to microwave), information storage technology, magnetic separation, and applied superconductivity. The program will consist of invited and contributed papers. Selection of contributed papers is based on abstracts whose submission deadline is January 23, 1991.

The General Chairman of the Conference is Robert M. White and Local Chairman is Daniel Stancil. Persons or organizations who desire further information on the Conference or who wish to make additions to the Conference mailing list should contact:

Ms. Diane Suiters  
5M<sup>3</sup>I Conference Coordinator  
655-15th Street, N.W., Suite 300  
Washington, DC 20005  
Tel. (202) 639-5088 FAX: (202) 347-6109

**FUNDAMENTALS OF CAD**

From December 10-14, 1990 the Laboratory for Electrical Machines and Drives of the K. U.

Leuven in Belgium organizes two complementary courses on the analysis and the design of electromagnetic systems. The first three days will deal with the fundamentals of the finite element technique in electromagnetic field calculations. The second three-day course describes the use of numerical field calculation techniques in CAD systems for electromagnetic systems.

For further information contact:

Dr. R. Belmans  
Lab EMA-Dep. EE  
Kard, Mercierlaan 94  
B-3030 Leuven, Belgium  
Tel. (+) 32.16.22.09.31  
FAX (+) 32.16.22.18.55

**1991 TMRC CONFERENCE**

Next year's Magnetic Recording Conference, sponsored by the IEEE Magnetics Society, will expand beyond conventional coverage of magnetic recording technology, the 1991 theme being *recording and storage systems.*

The Program Chairman solicits nominations of speakers and of specific technical work for presentation. The Call for Nomination is December 31, 1990. Topics include analog and digital systems; disc and tape; fixed and removable storage; magnetic and magneto-optic; instrumentation and computer data recording. Papers are solicited on channel characterization, electronics/optics for writing and reading, coding, equalization and data detection, access servos and track following servos, error correction and system reliability, and system integration of heads, media and electronics.

The conference will be held in Hidden Valley, a retreat near Pittsburgh, and the number of accommodations available are limited. Most papers will be invited. There will be no parallel sessions.

Further information will be distributed to members of the IEEE Magnetics Society in the fall of 1990. Others interested in the conference may call:

G. F. Hughes, Publicity Chairman  
Seagate Technology  
900 Disc Drive  
Scotts Valley, CA 95066  
(408) 439-2626 FAX: (408) 438-4190



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# CONFERENCE CALENDAR

Call for Speaker Nominations and abstracts by December 31, 1990. The Magnetic Recording Conference (TMRC), June 12-15, 1991 is a satellite conference preceding the 1991 Intermag Conference. Program Chairman: Roger Wood, (408) 284-5241. See page 5 for further information.

ISEM-Sendai, The International Symposium on the Application of Electromagnetic Forces, January 28-30, 1991, Sendai, Japan. For information, contact: Dr. T. Takagi, The Institute of Fluid Science, Tohoku University, 2-1-1 Katahira, Aoba-ku, Sendai 980, Japan. Telefax: 022-223-2748.

EMMA '91, European Magnetic Materials and Applications Conference, Dresden, April 16-19, 1991. For information contact: Dr. S. Roth, Secretary of the Organizing Committee of EMMA '91. AdW d. DDR/ ZFW Helmholtzstr. 20/PF, DDR-8027 Dresden. Phone 4659327, Telex: 2131 zfw da.

Second International Conference Rare Earth Development and Applications, May 27-31, 1991 in Beijing, China. For further information contact:

Senior Engineer Siu Aisheng  
The Chinese Society of Rare Earths  
76 Xueyuan Nan Lu, Beijing 100081  
P.R. China  
Phone: 8312541 or 891666  
Telex: 222297 CISRI CN  
Fax: 8312144

Joint Magnetism and Magnetic Materials INTERMAG Conference, June 18-21, 1991, Pittsburgh, PA. See page 5 for further information.

Power Electronics Specialists Conference, June 24-28, 1991, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA. Contact Conference Chairman for further information: Professor Martin F. Schlecht, Room 39-553, Department of EE and Computer Science, M.I.T., Cambridge, MA 02139, Tel: 617 253-3407

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**MAGNETICS SOCIETY CHAPTERS**

Chairman: H. S. Gill (408) 256-2308

CHAPTER	CHAIRMAN	ADDRESS	DAY & TIME
Santa Clara Valley	Geof Bate	IIIST Santa Clara University Santa Clara, CA 95053 (408) 554-4105	3rd Tuesday, 8:00 P.M.
San Diego	Frank Talke	CMRR R-001, UCSD La Jolla, CA 90093 (619) 534-3646	3rd Thursday, 7:00 P.M.
Pittsburgh	W. A. Soffa	University of Pittsburgh Dept. Materials Sci. & Engineering Pittsburgh, PA 15261 (412) 624-9728	2nd Thursday, 7:00 P.M.
Twin Cities	Ed Wollack	3M Company 236-1B-99, 3M Center St. Paul, MN 55144 (612) 733-9863	2nd Thursday, 7:30 P.M.
U.K.	David Melville	Lancashire Polytechnic Preston PR1 21Q U.K. (44) 772-26-2840	2nd Thursday, 7:30 P.M.
Boston	Shyam Das	Digital Equipment Corp. 333 South Street Shrewsbury, MA 01545 (508) 841-3369	2nd Wednesday, 6:00 P.M.
Los Angeles	F. Carlson	7333 West 90th Street Los Angeles, CA 90045 (213) 515-1546	3rd Wednesday, 8:00 P.M.
Philadelphia	Bryen Lorenz	Widener University School of Engineering Dept. of EE Chester, PA 19013 (215) 499-4040	N/A
Washington, D. C.	E. Della Torre	George Washington University EECS Department Washington, D.C. 20052 (202) 994-5517	Two meetings a year. Difficult people with diverse professiona
West Lafayette, IN	Herbert Pietsch	7740 N. 100 W. West Lafayette, IN 47906	N/A



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