

# ELECTRICAL ENGINEERING®

DECEMBER 1976

NUMBER

# 67

ANNUAL ASSEMBLY ELECTS TEN 1977 MEMBERS OF THE BOARD OF DIRECTORS DURING BoD MEETING IN ORLANDO, FLA.; BOARD CREATES NEW DIVISION AND STANDARDS SEAT

Ten key seats on IEEE's 30-member 1977 Board of Directors have been filled by the annual Assembly. Chosen during a two-hour session held in concert with the BoD's final meeting of the year were:

- Irene C. Peden--Vice President for Educational Activities, 1977
- Jerome J. Suran--Vice President for Publication Activities, 1977
- Douglas M. Hinton--Vice President for Regional Activities, 1977
- Franklin H. Blecher--Vice President for Technical Activities, 1977
- Robert D. Briskman--Secretary-Treasurer, 1977
- James J. Vasseleu--Director for Region 10, 1977-1978
- Herbert A. Schulke, Jr.--Executive Director, 1977
- John J. Guarrera--Vice President for Professional Activities, 1977
- John E. Barkle--Director-at-Large, 1977
- William R. Kruesi--Director for Standards Activities, 1977

The list represents, without exception, the slate recommended to the annual Assembly by IEEE's Nominations and Appointments Committee headed by 1976 Junior Past President Arthur P. Stern. The Assembly is composed of 17 members of the Board who are directly elected by the membership--i.e., the President, Executive Vice President, and the Directors of Regions 1-9 and Divisions I-VI--plus the Senior and Junior Past Presidents. (Further details on the newly appointed of-

ficers will appear in future issues.)

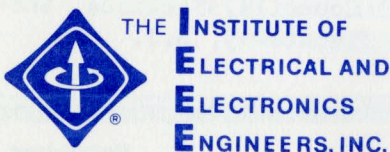
The Board, itself, took several significant actions during its two-day deliberations in Orlando, Fla., on December 4-5. Among these, one seat was added to the Board as a result of a three-part decision. Established was a seventh Technical Division to be composed exclusively of the Power Engineering Society. Also approved was a second new seat to be filled by a Director of Standards. And a seat now held by the Vice Chairman for Technical Activities was eliminated.

A proposal that would have increased the number of Regional Directors both on the Regional Activities Board and the BoD was rejected by both bodies. During RAB's meeting, which preceded the BoD meeting in Orlando, a Bylaw amendment that would have given a second Director to any Region whose membership passed  
(continued, p. 4, col. 1)

## SAUNDERS TAKES PRESIDENCY

Robert M. Saunders, 1976 Vice President for Regional Activities, has won a three-way race for 1977 IEEE President. Dr. Saunders was the candidate of the Board of Directors. Elected 1977 Executive Vice President was Carleton A. Bayless, a petition candidate who is outgoing Region 6 Director. Contests were also decided for four Regional Directorships, three Divisional Directorships, and a Regional Vice Chairmanship--and three ballot propositions were defeated. For details on these important races, see the December Spectrum, p. 47.

**EXTRA:** 133 new IEEE Fellows have been elected by the BoD. Their names and citations appear on pp. 2C-2J of this issue (gray insert). New Fellows are asked to advise IEEE by January 14, 1977, whether they would like their certificates to be presented by a local Section or by a Group or Society. Soon after, certificates will be furnished to the designated unit to be presented at an appropriate ceremony. For nominators interested in resubmitting a candidate's name or in submitting a new name, Fellow Nomination Kits are now available from the Staff Secretary of the Fellow Committee at HQ.



**A management newsletter on IEEE operations . . . to encourage communication among all organizational entities and the staff . . . ELECTRICAL ENGINEERING is published bimonthly by IEEE, 345 East 47 Street, New York, N.Y. 10017**



RESEARCH GRANT OFFERED

A grant of \$10,000 will be awarded on a competitive basis to a member of IEEE as part of a program sponsored by the Engineering Foundation in cooperation with the five Founder Societies, of which IEEE is one. February 1, 1977, is the deadline by which applications must be postmarked to be eligible for a 1977-1978 Engineering Research Initiation Grant. Winners--one per Founder Society--are expected to devote at least one fourth of an academic year, plus full time following that academic year for two or three months, to the proposed research in a field of mutual interest to the Founder Society and the Engineering Foundation. Eligibility rules and instructions for preparing a proposal can be found on the green insert, pp. 2Q-2V, in this issue.

DELEGATES SOUGHT

Headquarters is seeking delegates to attend the 1977 U.S.S.R. Popov Society Congress as part of its annual exchange. The four-day Congress will take place in Moscow in late May 1977. Its theme will be "Significance of Radio Technology, Electronics and Electro-communications To Increase the Effectiveness of National Economy and Quality of Production." Plans are for the IEEE delegation to stay in the U.S.S.R. about two weeks, attending the Congress and visiting several Soviet cities where the delegates will tour research centers, educational institutions, and operating installations.

Interested members should submit applications, together with a biography, to their Group or Society President as soon as possible. Applicants will be expected to provide their own funding for the trip, perhaps by their own institutions or companies. In making nominations, the Group and Society Presidents will give precedence to applicants who are interested in the topics of the Congress, who are likely to be known by their Soviet hosts through professional achievement and/or positions, and who speak Russian. Final choices will be made by a subcommittee of the Intersociety Relations Committee (ISRC). Further information may be obtained from A. L. van Dort, Secretary to the ISRC, at IEEE Headquarters.

CAREER AIDS AVAILABLE

Tax tips and career planning are the subjects of two new publications available from IEEE. Sponsored by USAB, the 1976 IEEE Manpower Report, entitled "Career Paths in E/E Engineering," teaches EEs how to avoid typical employment pitfalls and how to develop a structured approach to successful career planning. The report begins with an analysis of employment trends in electrical and electronics engineering and then considers how the individual EE can best react to these trends and even take charge of his or her career.

"Engineers and Federal Taxes," a second USAB-sponsored publication, attempts to dispel some of the mystery surrounding Federal Tax law. Assuming that many EEs handle their own returns without employing expert advice, the authors of this booklet have included everything from how to fill out a return to how and when to take deductions.

Both "Career Paths in E/E Engineering" (EH0117-2)--at \$15 for members; \$25 for non-members--and "Engineers and Federal Taxes" (EH0121-4)--at \$2 for members; \$5 for non-members--may be ordered from: IEEE Service Center, 445 Hoes Lane, Piscataway, N.J. 08854.

Pension planning is the topic of a shopping list of recently published books being recommended by USAB. On the list are: "Everything You Should Know About Pension Plans" by Fay and Leo Young (Bethesda Books, P.O. Box 34567; Bethesda, Md. 20034--\$4.95); "Handbook on Pension Reform Law" (Prentice-Hall, Inc., Englewood Cliffs, N.J. 07632--\$4.50); "Highlights of the New Pension Reform Act" (The Bureau of National Affairs, Inc., Washington, D.C. 20037--\$4.50); and "Pension Reform Act of 1974, Law and Explanation" (Commerce Clearing House, Inc., Chicago, Ill. 60646--\$4.50).

Reminder: See ivory USAB inserts, pp. 2E-2H, this issue, for survey results.

ELECTRO HITS NEW YORK

April 19-21, 1977, are the dates when ELECTRO/77 returns to New York after a highly successful run in Boston in 1976. Some 300 exhibitors are expected to rent more than 500 booths at N.Y.C.'s Coliseum, while the technical program (continued, p.3, col.1)

E.E. is sent without cost beyond dues to officers of IEEE Boards, Committees, Divisions, Societies, Groups, Technical Councils, Conferences, Regions, Regional Councils, Sections, Subsections, Chapters, and Branches. Second-class postage is paid at Piscataway, N.J.

# Continuing education services

Is there anything wrong with the following sentence?

"Since all the spare parts needed for the overhaul have been received, work will be able to start immediately; orders for additional spare parts are neither envisaged nor necessary."

If you found little or nothing wrong then may we suggest you enroll in our new self-study course---Technically Write?

Actually the test sentence contains--13 unnecessary words--superfluous words--low-information-content words, and --words that erect hidden barriers between writer and reader.

Technically Write! will do just what its name implies. Upon satisfactory completion you will bring your writing and speaking skills to the new level you must reach in order to achieve your full career potential.

The course is designed to teach proven techniques for producing attention-getting written and verbal communications of every type. Created by Ron Blicq, Chairman of the Education Committee of the IEEE Group on Professional Communications, it has been selected by the IEEE Educational Activities Board as a worthy course for improving the communications skills of our engineers.

It has been designed as a practical "hands on" self-study course for engineers. Students are asked to read specific sections of the text and submit written assignments for correction and evaluation by a personal instructor.

You cannot "read" how to write.

Each student who enrolls is assigned to an instructor who is a specialist in the communications field. Eleven broad topic areas are covered and assignments are based on real-life situations facing you every day. True mastery of the material is achieved by the dialogue that will develop between you and your instructor. Completion of the course takes 3½ months on average and a Certificate of Completion is awarded all students who successfully fulfill all course requirements.

Typical topics covered are:

- Sharpening style and organization.
- Informal reports (field trips, progress inspection, etc.
- Formal reports, feasibility studies.

We will be glad to put "Technically -- Write" to work for you. Learn first hand how we can improve your written and verbal communications. Fill out the registration coupon and send it to us today.

Note: This is a tax deductible program if taken to maintain or improve your job skills.

## TECHNICALLY-WRITE! Enrollment Form

Mail this form with payment to:

**IEEE Service Center  
445 Hoes Lane  
Piscataway, N.J. 08854**

Yes, I am an IEEE member and would like to enroll immediately in the Technically -- Write! correspondence course. Please send me the textbook and the 11 instruction packages for the course fee of \$80.00 plus \$2.00 for handling and delivery. My check in the amount of \$82.00 is enclosed. I understand that I may return all course materials, in good condition, within two weeks after receipt for a full refund if dissatisfied.

Nonmember fee: \$105.00 plus \$2.00 for handling and delivery.

Name \_\_\_\_\_ TW

IEEE No.  \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State/Country \_\_\_\_\_ Zip \_\_\_\_\_



THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

FOR ADDITIONAL INFORMATION CONTACT VINCENT J. GIARDINA  
445 HOES LANE, PISCATAWAY, NEW JERSEY 08854





# TECHNICAL ACTIVITIES BOARD

## ENGINEERING RESEARCH INITIATION GRANT

The Engineering Foundation has announced the availability of 1977-78 Engineering Research Initiation Grants of \$10,000 in each field represented by a Founder Society.

The Technical Activities Board has been designated by the IEEE Executive Committee to evaluate and rank order proposals to be submitted by the IEEE to the Engineering Foundation.

The announcement, eligibility rules and instructions for preparing a proposal appear on the following pages.

**NOTE:** Proposals must be postmarked by February 1, 1977

Mail proposals to:

Dr. H. A. Schulke, Jr., General Manager  
The Institute of Electrical and Electronics Engineers  
345 East 47th Street  
New York, N.Y. 10017

WHAT'S BETTER THAN SPEED READING? Speed Learning...(Speed plus comprehension).

Our New Speed Learning Program shows you step-by-proven-step how to increase your reading skill and speed so you can understand more---remember more---and use more of everything you read.

If your answer is "yes" to any of the questions below---the course can help you build exceptional skills in reading:

- Do you have too much to read and too little time to read it?
- Do you mentally pronounce each word as you read?
- Do you frequently have to go back to re-read words or whole paragraphs you just finished reading?
- Do you quickly forget most of what you read?
- Would you be willing to devote a few minutes each day to discover a new way to read?

Imagine the new freedom you will have when you learn how to dash through all types of reading material at least twice as fast as you do now and with greater comprehension.

The Speed Learning Program was created by Dr. Russell G. Stauffer at the University of Delaware and scientifically planned by Learn Inc. It was approved by the IEEE Engineering Management Society and the Educational Activities Board as a worthy self-study course for our members.

You will find out how to "shift gears" and read at different speeds for different types of materials.

It brings you a "teacher-on-cassettes" who guides you, instructs, encourages you, explaining material as you read. And the printed material consisting of three learning manuals and assorted texts will assist you in achieving new freedom from reading frustrations.

Think of being able to get on top of the pile of newspapers, magazines, reports etc. you wanted and probably need to read.

No special practice sessions---no refresher courses required. Just your daily reading ---using your new skills---will continue to make you a better and better reader.

You can elect to take the course yourself or to pass this information along to a colleague---or to interest a relative. Whichever the case, fill in the Enrollment form today and return it to us with the course fee. You have everything to gain and nothing to lose.

### Speed Learning Order Form

Mail order with payment to:  
**IEEE SERVICE CENTER**  
445 Hoes Lane  
Piscataway, N.J. 08854

**Yes, I am an IEEE member and want to take advantage of your Speed Learning offer.** Please send me the complete Program at \$59.95 plus \$3.00 handling and insured delivery. My check in the amount of \$62.95 is enclosed.

Nonmember price: \$69.95 plus \$3.00 for handling and delivery.

Name \_\_\_\_\_ SL

IEEE No.

Address \_\_\_\_\_

City \_\_\_\_\_

State/Country \_\_\_\_\_ Zip \_\_\_\_\_

Please make check payable to IEEE. Residents of New Jersey please add state sales tax.



THE ENGINEERING FOUNDATION

announces the availability

of

ENGINEERING RESEARCH

INITIATION GRANTS

during

1977-1978

sponsored by the ENGINEERING FOUNDATION  
with the cooperation of its FOUNDER SOCIETIES

American Society of Civil Engineers  
American Institute of Mining, Metallurgical and Petroleum Engineers  
American Society of Mechanical Engineers  
Institute of Electrical and Electronics Engineers  
American Institute of Chemical Engineers

Applications Must Be Postmarked by  
February 1, 1977

ENGINEERING RESEARCH INITIATION GRANTS

Sponsored By

THE ENGINEERING FOUNDATION

with The Cooperation Of Its Founder Societies

American Society of Civil Engineering  
American Institute of Mining, Metallurgical and Petroleum Engineers  
American Society of Mechanical Engineers  
Institute of Electrical and Electronics Engineers  
American Institute of Chemical Engineers

GENERAL

The ENGINEERING FOUNDATION announces the availability of Engineering Research Initiation Grants during 1977-1978 in fields represented by its FOUNDER SOCIETIES.

The program is directed toward young full time engineering Faculty members who are without research support.

A grant of \$10,000 will be awarded on a competitive basis to a member of each of the FOUNDER SOCIETIES for a proposed research project in a field of mutual interest to his FOUNDER SOCIETY and to the ENGINEERING FOUNDATION.

It is expected that the investigator will devote at least one-fourth time during one academic year as part of his normal academic assignment and full time (2-3 months) during the summer following the academic year to the proposed research on the campus of his institution.

ELIGIBILITY

One proposal may be submitted per department on behalf of an individual who:

1. holds a full-time regular academic appointment on the engineering teaching faculty of an institution of higher education.
2. a). was awarded the Doctor's degree not longer than two academic years prior to the submission of the proposal.  
or  
b). holds the Doctor's degree, has gained several years of industrial experience and is within his first two years as a full time member of the faculty.



#### STATEMENT BY DEPARTMENT HEAD

The proposal must contain a signed statement by the Department Head indicating: investigator's eligibility with name of the institution who conferred the Doctor's degree, date and title of the dissertation; the normal full time teaching load of the applicant during the current year at the present institution; and that anticipated during the grant duration; endorsement by the Department Head.

#### STATEMENT OF ENGINEERING RELEVANCE

The proposal must contain a short specific statement of the relevance of the proposed research to engineering.

Projects directed toward innovative engineering approaches to the solution of major national problems or toward the development of new engineering principles, applications and techniques are encouraged.

#### EVALUATION AND SELECTION OF PROPOSALS

Proposals should be sent directly to the Executive Officer of his professional society. A panel organized by his professional society will evaluate and select meritorious proposals. They will be submitted (in rank order) to the Projects Committee of the ENGINEERING FOUNDATION who will make the final selection of a proposal in the technical field of each of the FOUNDER SOCIETIES for submission to the Board of the ENGINEERING FOUNDATION for final approval.

#### DEADLINE

All proposals being submitted to the FOUNDERS SOCIETIES must be postmarked by February 1, 1977.

Selected proposals by the FOUNDER SOCIETIES to the Projects Committee of the ENGINEERING FOUNDATION must be postmarked by April 1, 1977.

#### ANNOUNCEMENT OF GRANTS

Grantees will be notified by a grant letter from the Secretary of the ENGINEERING FOUNDATION on or about June 1, 1977, with copies to their FOUNDER SOCIETIES. Grants will be effective as of September 1, 1977.

#### REPORTS AND PUBLICATIONS

A semi-annual progress report and a final report are required and shall be submitted to the ENGINEERING FOUNDATION by each grantee.

Continuing payment of supporting funds will be contingent upon satisfactory progress as evidenced by the progress reports.

It is the policy of the ENGINEERING FOUNDATION that results of all investigations shall be available to the engineering profession and to the public. If the results of an ENGINEERING FOUNDATION supported project are not otherwise published, the ENGINEERING FOUNDATION reserves the right to publish the material giving due credit to those who conducted the work.

Appropriate recognition of the ENGINEERING FOUNDATION and the cooperating FOUNDER SOCIETY must be prominently displayed on the title page of any publications resulting from projects supported by the ENGINEERING FOUNDATION.

#### INSTRUCTIONS FOR PREPARING A PROPOSAL

The formal proposal shall include the following information. Twelve copies are needed.

##### The Cover Sheet

The first page of the proposal shall include the title of the project; name of principal investigator, title, institution and location; name of person financially responsible for administering project funds.

##### Statements

The Department Head's statement should be on page 2. The engineering relevance statement should be on page 3.

##### Abstract of Proposed Research

The fourth page of the proposal should contain an abstract of the proposed research. It should be limited to approximately 250 words and be of a style suitable for direct insertion into a technical journal.

##### Proposed Budget

The proposed budget should be on page 5. The funds provided may be used to defray such costs as support of the investigator's salary, expendable supplies, some travel, publication costs, and computer time. The ENGINEERING FOUNDATION reserves the right to make adjustments in budget categories.



Budgets will be prepared on the above basis and may not exceed \$10,000. Indirect costs will not be covered by the grant. Although these grants are nonrenewable, the recipients are eligible to apply for continued support under the ENGINEERING FOUNDATION's regular Grant Policy.

#### Biographical Sketch

Following the proposed budget, a biographical sketch of the principal investigator should be presented including a listing of publications.

#### Description of Proposed Research

The next section should contain the research proposal in sufficient detail to allow evaluation of its engineering merit, including statement of the problem and its significance, approach to execution of the project, and timing of project work. Names of two or three recognized authorities in the field should be provided.

#### Dissertation Abstract

As the last page, the proposal should contain an abstract of the investigator's doctoral dissertation.



# United States Activities Board

## EMPLOYMENT ASSISTANCE

Objective: To provide employment assistance programs for IEEE members.

Summary and Background: The USAB has undertaken a program of employment assistance with a dual thrust. One phase has been to provide direct and immediate employment assistance to IEEE members. Some of the activities involved are national in scope and other strictly local. In all instances the activities help a member seeking employment to establish contact with potential employers.

The second phase supports the first through the following activities: training and support required to implement the first phase; effort directed at obtaining government support for special assistance programs, improved national employment and economic statistics through ongoing USAB surveys, and legislation affecting the engineering job market; and a survey and data-gathering mechanism for the continuous evaluation of these programs and for monitoring the status of engineering employment in government and industry...

*(The above was taken from the preliminary version of the 1977 USAB Program Plan.)*

Current (1976) Employment Surveys: During 1976 the USAB is conducting three sample surveys to determine the employment status of our members by each of the six U.S. Regions. Combined with the monthly employment data compiled by the Bureau of Labor Statistics for almost 200 labor market areas, this data should help Sections and Professional Activities Committees determine the need for local employment assistance efforts.

On the reverse side are the results of the June and August Employment surveys. The results of the November survey will be released at the end of the year.



## 1976 Employment Surveys

## June 1976 Survey

(1) Area	(2) Sample Size	(3) Number of Responses	(4) Number Tabulated	(5) Response Rate (3)/(2)	(6) Unemployed Involuntarily		(7) Unemployed Voluntarily		(8) Sum of (6) + (7)		(9) Employed Full-Time But Seeking Change		(10) Sum of (6) + (7) + (9)	
					No.	Pct	No.	Pct	No.	Pct	No.	Pct	No.	Pct
US Total	3271	1954	1945	59.74	48	2.5	8	0.4	56	2.9	98	5.0	154	7.9
Region 1	835	458	454	54.85	17	3.7	2	0.4	19	4.2	27	5.9	46	10.1
Region 2	604	372	370	61.59	7	1.9	1	0.3	8	2.2	16	4.3	24	6.5
Region 3	354	239	239	67.51	3	1.3	0	0.0	3	1.3	12	5.0	15	6.3
Region 4	391	231	228	59.08	5	2.2	2	0.9	7	3.1	7	3.1	14	6.1
Region 5	326	200	200	61.35	3	1.5	1	0.5	4	2.0	6	2.5	9	4.5
Region 6	761	454	454	59.66	13	2.9	2	0.4	15	3.3	31	6.8	46	10.1

## August 1976

(1) Area	(2) Sample Size	(3) Number of Responses	(4) Number Tabulated	(5) Response Rate (3)/(2)	(6) Unemployed Involuntarily		(7) Unemployed Voluntarily		(8) Sum of (6) + (7)		(9) Employed Full-Time But Seeking Change		(10) Sum of (6) + (7) + (9)	
					No.	Pct	No.	Pct	No.	Pct	No.	Pct	No.	Pct
US Total	3271	1980	1970	60.53	44	2.2	11	0.6	55	2.8	105	5.3	160	8.1
Region 1	835	489	487	58.56	12	2.5	4	0.8	16	3.3	27	5.5	43	8.8
Region 2	604	402	400	66.56	11	2.8	0	0.0	11	2.8	18	4.5	29	7.3
Region 3	354	214	213	60.45	1	0.5	2	0.9	3	1.4	14	6.6	17	8.0
Region 4	391	244	241	62.40	2	0.8	1	0.4	3	1.2	12	5.0	16	6.2
Region 5	326	178	177	54.60	6	3.4	2	1.1	8	4.5	11	6.2	19	10.7
Region 6	761	453	452	59.53	12	2.7	2	0.4	14	3.1	23	5.1	37	8.2



Contact: Ray Mendolia

# ADMINISTRATIVE SERVICES UNIT

## IEEE ADDRESSING, PRINTING AND MAILING SERVICES (Effective January 1, 1977)

**MAILING LISTS.** Mailing lists addressed to IEEE members can be furnished by: Regions, Sections, Subsections, Chapters of Groups and Societies, IEEE Groups and Societies, and Technical interest profiles.

**USE OF MAILING LISTS.** Each request for a membership list, in any form, shall be accompanied by a statement as to the purpose for which the list will be used.

**LEAD TIME.** Please allow three weeks to schedule production of your request for a mailing list; allow up to eight weeks for preparation of rosters.

**AUTOMATIC PREPARATION OF MONTHLY LISTS.** IEEE organizational units having regular monthly meetings or monthly publications are encouraged to enter a standing order to receive automatic shipments of addressed labels on a specified day of each month. (Uniform mailing date required for monthly shipment.)

### MATERIAL ADDRESSED.

	COST PER NAME*
Labels:	
3-1/2" ungummed Cheshire flat striplis, 4 names across	\$ .022
3-1/2" perforated gummed flat striplis, 4 names across	.022
3-1/2" Avery label (self-adhesive), 4 names across	.024
Rosters:	
A. Alphabetical list, 4 names across	.024
B. List by membership grade, 4 names across	.024
C. List by company affiliation, one name across	.033
(Cost of multiple copies of above lists furnished on request.)	
	COST PER THOUSAND *
Paper Only:	
8-1/2 x 11 Plaza Offset: used for routine printing	\$ 4.50
8-1/2 x 11 Mead Cockle: used for letterhead	12.00
Postcards:	
Single, government stamped	At Cost
Double, reply, government stamped	At Cost
Single, unstamped	6.00
Double, unstamped	12.00
Envelopes:	
G-18 IEEE return envelope (8-3/4 x 4) postage paid (Permit #1332)	14.50
G-20 First Class #10 with IEEE logo and address	12.00
SEC-23 First Class #10 with IEEE logo (no address)	12.00
GS-23 Government stamped #10 with IEEE logo (no address)	5.00 + postage
K-2 10-1/2 x 7-1/2 gummed flap and clasp with IEEE logo and address	34.00
K-3 9 x 12 gummed flap and clasp with IEEE logo and address	36.00
K-7 9-1/2 x 12-1/2 gummed flap and clasp with IEEE logo and address	40.00
K-10 10 x 13 gummed flap and clasp with IEEE logo and address	43.50

\*Plus postage charges for shipment of addressed material for handling and mailing locally.



The following additional charges apply on requests involving IEEE printing and mailing services:

Printing only: Labor - including collating, stapling and folding \$ 10.80/hour  
 Paper - 20# bond 8-1/2 x 11 4.50/thousand  
 Paper - Fine finish for letterhead 4.50/thousand

Mailing: The following charges apply for Avery labels (manually affixed) and Cheshire labels (in excess of 1,000 names using automatic equipment):

	<u>Manual</u>	<u>Automatic</u>
Affixing labels	\$ 7.70/hour	\$ 8.00/thousand
Inserting and mailing	7.70/hour	8.00/thousand
Sorting, tying, sacking	7.70/hour	

Sorting: All second and third class nonprofit mail must be sorted manually into five groups (Post Office regulations) and is therefore subject to the hourly rate: \$7.70/hour.

Inserting: The inserting machine will accept envelopes ranging in size from 3-1/4 x 6" to 6" x 9". The paper must be 20# stock or better. Maximum inserts - 6. Each single enclosure is to be at least 3" x 5" but smaller than 6" x 9". Other inserting jobs handled manually at the \$7.70 per hour rate.



IEEE

IEEE FELLOWS ELECTED AS OF JANUARY 1, 1977  
GEOGRAPHICAL LIST BY SECTION AND SUBSECTION

ALABAMA

Martial A. Honnell

For contributions to electrical engineering education and electronic instrumentation.

ALBUQUERQUE

Peter Dorato

For contributions to sensitivity analysis and design in automatic control systems.

Bob L. Gregory

For contributions to the field of radiation-tolerant semiconductor devices and integrated circuits.

A. William Snyder

For contributions to and management of research in the fields of nuclear measurements and reactor safety.

ATLANTA

H. Allen Ecker

For contributions in the application of radar scattering analyses and measurements to radar discrimination.

Glen P. Robinson, Jr.

For leadership in microwave antenna measurement instrumentation.

Ronald W. Schafer

For contributions to digital signal processing and speech communication.

Kendall L. Su

For contributions to the theory of active and distributed-parameter networks and to engineering education.

BALTIMORE

Lawrence E. Dickens

For contributions to the field of low-noise microwave mixers and parametric amplifiers.

BINGHAMTON

Frithiof V. Johnson

For contributions in inertial sensors and avionic systems.

BOSTON

George S. Haralampu

For contributions in the field of power system protection and in the applications of computers to the analysis, design, and operation of large electric power systems.

Harold M. Hart

For contributions to missile fire control radars, air traffic control, and landing systems.

Alexander Kusko

For contributions to education in power electronics and to the application of solid-state power devices to industry.

James R. Melcher

For contributions to electrohydrodynamics and its practical application.

Alan V. Oppenheim

For contributions to digital signal processing and speech communications.

William F. Schreiber

For contributions to the understanding of image enhancement, and for the design of image processing and transmission systems.



BOSTON (continued)

Fred C. Schweppe

For contributions to the application of state estimation, load forecasting and system dynamics to the control of electric power systems.

Gerald L. Wilson

For contributions to electric power engineering education and to the understanding of arc and noise phenomena in power systems.

CENTRAL ILLINOIS

Saburo Muroga

For contributions to switching theory, computer design, information theory, and engineering education.

Daniel L. Slotnick

For contributions to the development of centrally controlled array computers.

Gregory E. Stillman

For contributions to the characterization of ultra-pure gallium arsenide, to the extension of the long wavelength range of extrinsic photoconductors, and to the development of avalanche photodetectors.

Timothy N. Trick

For contributions to the analysis of communication circuits and to engineering education.

CENTRAL INDIANA

Leslie A. Geddes

For contributions to biomedical instrumentation, including techniques for measuring pulmonary function from the body's electrical impedance.

Paul C. Krause

For contributions to electric machine theory and hybrid computer simulation of power system components.

David A. Landgrebe

For leadership in the application of remote sensing to enhance knowledge of the earth's resources.

Zane G. Todd

For leadership in power system operations and engineering.

CENTRAL TEXAS

Jack H. U. Brown

For contributions to biomedical engineering theory and practice.

CENTRAL VIRGINIA

John E. Gibson

For leadership in electrical engineering education and contributions to automatic control and systems engineering.

John N. Warfield

For contributions to systems engineering, automatic computation, and engineering education.

CHICAGO

Carl G. Eilers

For pioneering contributions to the FM stereophonic broadcasting system.

Edward F. Koncel, Jr.

For innovations in technical and economic development of a major electric utility and for pioneering the computerized accounting of nuclear fuel.

CLEVELAND

Joseph A. Boyd

For engineering and managerial contributions to communications and information handling systems.

Robert Flonsey

For contributions to the application of electromagnetic field theory to problems in electrocardiography and electrophysiology.

COLUMBIA

Joseph M. Biedenbach

For contributions to the continuing education of engineers.

COLUMBUS

Wai-Kai Chen

For contributions to graph and network theory.

Aharon A. Ksienski

For contributions to signal processing antennas.

CONNECTICUT

Walter F. Fee

For contributions to the management of power systems engineering.

Loering M. Johnson

For contributions to nuclear power and to professional engineering practice.

DENVER

Norris S. Nahman

For contributions to time domain metrology.

EGYPT

Mahmoud A. B. El-Koshairy

For leadership in the development of his Nation's power system, and engineering education.

Mohamed A. H. El-Said

For leadership in electronics research and engineering education in his Country.

FLORIDA WEST COAST

J. Lamar Allen

For contributions to the characterization, analysis, and application of ferrimagnetic materials in microwave devices.

FRANCE

Gilbert L. A. Ruelle

For contributions to the development and construction of very large electrical rotating machines.

GERMANY (WEST)

Walter E. Proebster

For contributions to and technical leadership in the development of computer components and systems.

Rudolf Saal

For contributions to filter design and to engineering education.

Hans W. Schuessler

For contributions to the theory of analog and digital filters.

Gerhard M. Sessler

For contributions to the field of electroacoustic transducers, particularly the electret microphone.

Herbert Weiss

For contributions to the development and applications of semiconducting galvanomagnetic devices.

HAMILTON

Colin D. diCenzo

For contributions to the development and design of detection and control systems.

ITHACA

Chung L. Tang

For contributions to the development of lasers and nonlinear optical devices and processes.

Charles B. Wharton

For contributions to the understanding of plasmas and to the development of plasma diagnostic techniques.



LONG ISLAND

Jorge F. Dopazo

For contributions to computer methods for analysis, real-time monitoring, and economic operation of power systems.

Ivan T. Frisch

For contributions to the development and application of network theory.

LOUISVILLE

Thomas L. Wilson

For leadership in the development of high-powered dielectric heating equipment.

MOHAWK VALLEY

SAINT LAWRENCE INTERNATIONAL SUBSECTION

Robert F. Cotellessa

For contributions to engineering leadership and education.

MONTREAL

Morrel P. Bachynski

For contributions to the fields of electromagnetic waves and plasmas.

Ray Bartnikas

For contributions to the field of dielectric and corona loss mechanisms in electrical insulating systems.

NEW JERSEY COAST

Clyde D. Hardin

For contributions to and leadership in the development of radar and ordnance electronics.

Ernest R. Kretzmer

For contributions to the understanding of video signal transmission, and for leadership in the development of data communication systems.

David G. Thomas

For contributions to the understanding of luminescence in semiconductors and to the development of light-emitting diodes.

Fred D. Waldhauer

For contributions to the development of pulse code modulation systems and of design techniques for feedback amplifiers.

NEW YORK

Egon Brenner

For contributions to engineering education.

Joseph Reed

For contributions to communication, automatic control, and navigational radar by the application of electronic, mechanical, and hydraulic technology.

Robert L. Schoenfeld

For contributions to the development of instrumentation and techniques for automatic collection of real-time biological data.

Theodor Tamir

For contributions to guided wave propagation, with application to electromagnetics, optics, and acoustics.

WESTCHESTER SUBSECTION

Willard G. Bouricius

For contributions to design and diagnosis procedures leading to increased reliability of computer systems.

Hisashi Kobayashi

For contributions to data transmission and to modeling and performance analysis of computer communication systems.

NORTH JERSEY

Mauro DiDomenico, Jr.

For contributions to optoelectronic devices for optical fiber transmission systems.

Richard W. Dixon

For contributions to the theory and realization of acoustooptical modulators.

Raymond A. Huse

For technical leadership in developing innovative energy conversion and transmission technology for bulk power systems.

G. Lorimer Miller

For contributions to nuclear instrumentation and its innovative extension to measurements in other scientific fields.

Bernard T. Murphy

For contributions to the field of integrated circuits.

James J. O'Connor

For contributions to the advancement of communication to the engineering profession.

OAKLAND-EAST BAY

David A. Hodges

For design and evaluation of semiconductor integrated circuits, and for education in digital electronic circuits and devices.

Elijah Polak

For contributions to the theory and implementation of numerical algorithms in optimal control and nonlinear programming.

Theodore Van Duzer

For contributions to superconducting devices and to engineering education.

ORANGE COUNTY

SADDLEBACK SUBSECTION

Allen R. Stubberud

For contributions to the theory and application of time variable systems and to engineering education.

PALM BEACH

Samuel J. Rosch

For contributions to the development, manufacture, and application of high-voltage and specialty cable.

PHILADELPHIA

Aravind K. Joshi

For contributions to man-machine communication through work in natural language processing by computer and mathematical theory of languages.

Josh T. Nessmith, Jr.

For leadership in and technical management of radar systems engineering.

Nathan Swerdlow

For contributions to the development of the high-current isolated phase bus.

Jay N. Zemel

For contributions to solid-state electronics and the development of IV-VI compound semiconductors for infrared photoconductive applications.



PITTSBURGH

Aubrey M. Curry

For contributions to the design of electrical systems for aluminum rolling mills.

Angel G. Jordan

For educational leadership in the field of solid-state device research.

James E. O'Neil

For leadership in and management of innovative EHV projects.

PORTLAND

Donald A. Gillies

For contributions to high-voltage equipment reliability through evaluation and maintenance.

Robert V. Wachter

For leadership in the development and application of silicon power conversion equipment.

PRINCETON

Bernard J. Lechner

For contributions to flat panel displays and two-way cable television systems.

Dalton H. Pritchard

For contributions to the development and improvement of color television.

Robert O. Winder

For contributions in switching theory, computer structure, and microprocessor design and applications.

REPUBLIC OF CHINA

Simon M. Sze

For contributions to semiconductor device research and to education.

SAINT LOUIS

Jerome R. Cox, Jr.

For contributions to the application of computers to clinical medicine.

SAN DIEGO

Victor A. J. van Lint

For contributions to the understanding of radiation effects and to the application of this knowledge to improve the survivability of military and space systems.

SAN FERNANDO VALLEY

Victor Galindo

For contributions to the theory and analysis of phased array and reflector antennas.

Edward D. Wolf

For contributions to scanning electron beam diagnostic and microfabrication techniques.

SANTA CLARA VALLEY

Tien-Chi Chen

For contributions to computer organization and multicomputer systems.

Donald L. Hammond

For contributions to the technology of quartz crystal and their applications as transducers.

Richard H. Pantell

For contributions to electron devices and to quantum electronics.

Norman F. Parker

For achievements in inertial navigation and leadership in engineering management.

SANTA CLARA VALLEY (continued)

Leslie L. Vadasz

For leadership in the development of semiconductor memories and microcomputer components.

Robert L. White

For teaching and research in the fields of magnetic and optical properties of materials and of biomedical engineering.

Frank S. Young

For contributions to the engineering and management of laboratory facilities for underground transmission technology.

SANTA MONICA BAY

Edward Bedrosian

For contributions to the fields of nonlinear circuit analysis and communication systems.

Thelma Estrin

For contributions to the design and application of computer systems for neurophysiological and brain research.

SCHEENECTADY

Frederick W. Baumann

For improvements to alternating current motors and generators.

Leonard L. Garver

For development of advanced computer techniques in the solution of transmission expansion problems.

Dale E. Hedman

For contributions to the development of solutions for wave propagation and electrical transients on extra-high-voltage transmission systems.

SEATTLE

A. William Guy

For contributions to the understanding of microwave interactions with living tissues, and to methods of tissue dosimetry in microwave irradiation.

SOUTH BAY HARBOR

H. John Kuno

For contributions to the field of solid-state generation and modulation of millimeter-wave signals.

SOUTHEASTERN MICHIGAN

Mark K. Enns

For contributions to the development of hybrid computers and their application to the operation and control of electric power centers.

Edward F. Weller, Jr.

For leadership in automotive electronics and instrumentation and for electronic control of automotive emissions.

SOUTH PLAINS

Richard E. Saeks

For contributions to circuit and system theory.

SPOKANE

John F. Szablya

For contributions to the design and theory of electric machines and for leadership in engineering education.

SPRINGFIELD

Lewis E. Franks

For contributions to the theory and application of periodically variable networks and filters.

SWEDEN

A. Christian Jacobaeus

For pioneering in the theory of switching systems and technical leadership in the development of telecommunication systems.

Lars H. Zetterberg

For contributions to communication theory and medical signal processing and to engineering education.



SYRACUSE

Theodore A. Bickart

For contributions to theory and education in circuits and systems.

TOKYO

Kenji Kakizaki

For development of traveling-wave tubes and for leadership in development of semiconductor memories for computers.

Masasuke Morita

For contributions to microwave communications and leadership in development, manufacture, and installation of radio communication systems.

Bun-ichi Oguchi

For contributions to microwave and millimeter-wave transmission and for leadership in the research and the development of telecommunication.

Risaburo Sato

For contributions to transmission line theory and engineering education.

Hisayoshi Yanai

For contributions to research and development in the fields of semiconductor devices and microwave technology, and to engineering education.

TORONTO

Wasył Janischewskyj

For contributions in power systems analysis, long-distance transmission, and high-voltage corona research.

Walter M. Wonham

For contributions to multivariable control system theory and design.

TWIN CITIES

Raymond M. Warner, Jr.

For continued contributions to the field of semiconductor devices.

UNITED KINGDOM AND REPUBLIC OF IRELAND

Robert Spence

For contributions to the theory of and education in the algorithmic, linguistic, and perceptual aspects of computer-aided circuit design.

UTAH

Thomas G. Stockham, Jr.

For contributions to engineering education and to digital signal processing.

VIRGINIA MOUNTAIN

Samuel Noodleman

For contributions to the design of electric motors.

WASHINGTON

Roger L. Easton

For contributions to the development of navigation satellites and worldwide precise time transfer.

John G. Puente

For contributions to the development of digital techniques and multiple access methods for satellite communications.

Robert R. Stone, Jr.

For contributions to the field of precision frequency and time control.

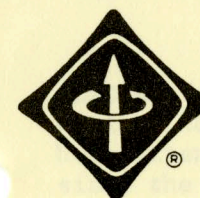
Barry N. Taylor

For contributions to the understanding of electron tunneling in superconductors and for leadership in the development of Josephson junction voltage standards.

NORTHERN VIRGINIA SUBSECTION

Wilfred Dean, Jr.

For leadership in engineering and management of the nation's radio frequency spectrum.



# United States Activities Board

RESULTS OF AUGUST 1976 IEEE/USAB  
SAMPLE SURVEY ON MEMBER OPINION TOWARD  
IEEE'S ATTEMPTING TO REGULATE  
QUALITY AND QUANTITY OF ENGINEERS  
AN UPDATE

1(a) Do you favor IEEE's attempting to regulate the quality of electrical engineers?

357 or 33% NO                      723 or 67% YES

1(b) If yes, how?

310 or 29% By promoting universal registration.

206 or 19% By certification of technical societies.

258 or 24% By validation of continuing education courses by the technical societies.

443 or 41% By promoting higher accreditation standards for engineering curricula.

153 or 14% By examination to become an IEEE member, at the "Member" level or above.

2(a) Do you favor IEEE's attempting to regulate the quantity of electrical engineers?

531 or 51% YES                      535 or 49% NO

2(b) 221 or 21% By working more actively through IEEE's student branches to educate high school students about the career opportunities available through the engineering profession.

333 or 32% By raising the standards for accreditation of colleges teaching engineering.

141 or 13% By increasing the number of years of study for an initial engineering degree through the accreditation process.

314 or 30% By obtaining for publication, and/or distribution, manpower reports on supply vs. demand of engineers.

\*\*\*\*\*  
\* Sample Size: Approx. 2500 \*  
\* No. of Responses: 1094 \*  
\* Response Rate: 44% \*  
\*\*\*\*\*



AUGUST 1976 IEEE/USAB  
SAMPLE SURVEY ON MEMBER OPINION TOWARD  
IEEE'S ATTEMPTING TO REGULATE  
QUALITY AND QUANTITY OF ENGINEERS

At the request of Paul Carroll, Richard C. Benoit, Jr., and their Task Force, the Washington, D.C. Office conducted a nationwide sample survey of approximately 2500 non-student U.S. members to determine their responses to the questions printed on the reverse side. The October issue of EE carried the preliminary results of that survey. The data presented on the reverse side is an update of that information reported in October. Although the response rate has increased from 37% to 44% since October, the percentage of responses for and against each issue has remained consistent.

In addition to the national sample survey, the survey form was printed in the October issue of EE which was sent to 3,477 U.S. members who hold either elected or appointed office in IEEE. The national sample was printed on a postage-paid return postcard, while the EE survey was distributed as an insert on the back of the preliminary sample survey results.

Although the 4% response rate to the EE survey is very small, it is interesting to note that respondents favored attempting to regulate both quality and quantity by a much higher percentage than respondents to the random sample survey of all non-student U.S. members.

As of November 3, 1976, 29 Sections had responded to Dick Benoit's request that Sections also survey their members to determine their opinions on these questions. There were no survey guidelines given to Sections so each conducted its survey in its own way. A total of 3,319 members were represented in the Sections surveyed; 264 members responded to the survey. Responses were generally consistent with responses to the national random sample and EE survey.

ELECTRO (cont'd)  
will be held at the Americana Hotel. The huge attendance and exhibit size--the largest since the Golden Sixties--at September's WESCON in Los Angeles, following hot on the heels of ELECTRO/76's success indicates a long-awaited upturn in the fortunes of these conventions and you can be a part of this. For information, contact ELECTRO/77 Convention Manager Joe Antonaccio in Piscataway, N.J., at (201) 981-0185, or the Exhibit Sales Department in El Segundo, Calif., at (800) 421-6816.

TAB NEWS

"How To Organize An IEEE Conference" (T-18) is the title of a newly revised and enlarged reference manual available from IEEE at no charge in single-copy quantities. Topics in the booklet, issued by the TAB Meetings Committee, are: how to initiate a conference, what committees should be formed, publicity, publications, finances, exhibits, and local arrangements. Also included are excerpts from the "IEEE Policy and Procedures Manual" regarding publications and conferences. Although originally written for Group/Society/Council activities, much in the booklet is applicable to Region and Section conferences as well. To obtain a free copy, write IEEE Service Center, Attn. Rochelle Tannenbaum, 445 Hoes Lane, Piscataway, N.J. 08854. Questions should be addressed to Joe Casey at Headquarters.

Reminder: See green TAB insert, pp. 2Q-2V.

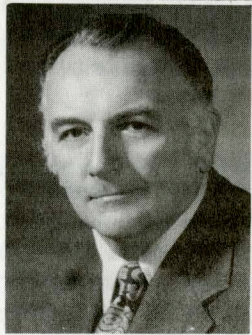
RAB NEWS

Section year-end reports are due at HQ by February 1. Annual meeting and financial forms have been sent to Section Secretaries and Treasurers.

Speakers are wanted for inclusion in a directory RAB will publish during 1977. The idea is to facilitate Section, Chapter, and Student Branch program planning. Recommended names, appended to annual reports, should be forwarded to Bob Asdal at Headquarters.

Section Chairmen, you are about to be elected Captains of IEEE's all-out, hardly-any-holds-barred 1977 membership drive. Yeoman Asdal at HQ has the membership promotion material that will back you up, and will be in touch with you shortly.

USAB, IEEE's professional arm, gets on-staff director



As of October 31, following ten months that encompassed the most ambitious and productive period in the five-year history of IEEE's U.S. Activities Board, the IEEE Washington Office lacked a full-time on-staff director. Serving as Acting Chief was devoted volunteer Hans Chorney whose task it was to shuttle back and forth to Washington from a full-time job with IBM. This is now remedied with the appointment of USAB Chief Program Manager John M. Kinn as Staff Director of Professional Activities.

Jack is well known to thousands of members through his prior service as Staff Secretary to the Educational Activities Board. Before joining IEEE, he was an engineer with Western Electric and Bell Labs, an editor for Electronics, and an IBM staffer. In his new position, he promises a 1977 that will be even more fruitful than 1976 in serving the members' career needs.

Assisting Jack will be: Leonard Farrell, in charge of Government and Industry Relations; Ralph Clark, Consultant and long-time Washington hand; Leo Fanning and Dorothy Bomberger, Project Managers; and Virginia Harrison, Washington Office Coordinator.

The fourth in a series on key Headquarters staff functions.

STUDENT NEWS

With Student Paper Contest deadlines not many months away, Branch Counselors and Chairmen are asked to encourage Student members to develop their current projects into Branch, Area, and Regional prize paper candidates. Examples of past award winners are available at \$8 from IEEE's Piscataway, N.J., Service Center--ask for "IEEE 1975 Student Papers." The 1976 edition will be available within the next several months. Says Student Services Coordinator Judy Rundle, cash awards and recognition are incentives, but the practical experience gained by writing and presenting a paper makes everyone a winner.

Report deadline: February 1 for Student  
(continued, p.4, col. 1)



## STUDENTS (cont'd)

Branch Annual Reports and Financial Statements. Please include on your report names and addresses of recommended speakers.

### PUB NEWS

Spectrum's January special issue will be its annual technology review of major developments in the state of the art. Covered: computers, components, and communications; power, instrumentation, and transportation; medical, consumer, and industrial electronics; military/aerospace and sociotechnology.

The Pub Board Transactions Evaluation Committee, chaired by Glen Wade, has completed its annual review of one third of IEEE's Transactions and Journals. 1976 Presidents and Editors of those reviewed will receive final reports within the next month.

### BoD ACTIONS (cont'd from p. 1, col. 2)

30,000, excluding students (e.g., Regions 1 and 6), was rejected by a narrow margin. Nevertheless, Region 1 asked that the proposal be reconsidered by the Board of Directors. There, the proposition was soundly defeated, though not without the sympathy of many members who voted no but felt Regions 1 and 6 are underrepresented. However, the BoD has felt for some time that its numbers are already unwieldy and, consequently, it was suggested that Region 1 consider other methods of equalizing representation--such as redrawing Regional boundaries--that would not increase the Board's size.

In other actions taken by the Board, an important IEEE Policy was amended that may encourage future Boards to open meetings--or portions of them--to observers. Not limited, according to Policy Statement 9.7D, is "the right of the Board of Directors, Executive Committee and other regularly constituted boards and committees of IEEE to restrict attendance... ." However, the Board has now added to this its encouragement to all IEEE boards and committees "to open a portion of their meetings to guests... ."

In terms of actions taken by the BoD that may have significant future impact, two are of particular note. Completely revised is Bylaw 112.1 now titled, "Expulsion, Suspension

or Censure of a Member." While there is not room here to reprint the new text of this Bylaw, it can be reported that detailed procedures have been developed for dealing with "conduct which the Board of Directors determines (i) to constitute materially unlawful conduct, a material violation of the Constitution, Bylaws or Code of Ethics of IEEE, or other materially unprofessional conduct, and (ii) to be seriously prejudicial to the best interests of IEEE."

A second action with potential impact on the Institute's future was the BoD decision to study a recommendation of the Long Range Planning Committee that the election for IEEE President should take place a full year in advance of the time he or she takes office. The rationale for such a procedure is that the President-Elect currently has only two months to prepare for the term of office and that this is insufficient considering the complexities of that office's duties. Several concerns were raised by individual BoD members with this procedure, including the fact that there was no recourse in the LRPC proposal for the members should they become dissatisfied with the President-Elect during the year preceding accession to the Presidency. No action on this proposal will be taken by the BoD until its study is completed.

### SECTION/CHAPTER NEWS

Established--the Communications Chapter of the San Francisco Section

Changed--the status of the Joint Vehicular Technology/Communications Chapter of the Toronto Section to individual Chapters of the VT Group and COM Society

Expanded--the Bahia Section to include the following Brazilian states: Acre, Alagoas, Amapa, Amazonas, Ceara, Maranhao, Para, Paraiba, Pernambuco, Piaui, Rio Grande do Norte, Rondonia, Roraima, Sergipe

Affiliated--the Bahia Section with the Brazil Council

### CORRECTION

The yellow insert, pp. 2G-2H, of October's EE showing a page of the U.S. Congressional Record on the front side was sponsored by--and should have been headed--United States Activities Board. EE's apologies to USAB and our readers for this error.

### Centerfold inserts

Blue--Revised HQ cost sheet	2A-2B
Gray--Newly elected Fellows	2C-2J
Ivory--Job program and survey	2K-2L
Ivory--EE quality/quantity survey	2M-2N
Pink--Continuing education	2O-2P
Green--Engineering grant	2Q-2V