

ELECTRICAL ENGINEERING®

ADD CLOBBERED CLICHES: "Reaching for the Moon."

"THE IMPOSSIBLE took longer" (again) —and cost more money.

HUNDREDS OF IEEE MEMBERS were in it, up to their eyebrows.

"ELECTRICAL ENGINEERING" (E. E.) salutes them, and notes that long years of friendly international rivalry and cooperation in electrotechnology were a heritage resource upon which they drew . . . and to which they added.

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IEEE'S POSTURE ON LAUNCH-PAD in August is that of countdown-before-blastoff. In September, meetings get under way, after vacations. By the time October E. E. appears, the whole organization is aloft and all units in stable equilibrium.

Of our 201 Sections, 189 operate July-to-June. Locally, then, most of our key administrators are getting an initial "feel" of things.

AUGUST ISSUE OF E. E. is traditionally designed to help the newly-installed Section, Subsection, and Chapter officers. Three of their checkpoints on August countdown are to familiarize themselves with 1) what's going on, 2) what's available in way of aids, 3) how to get them. See the part of this newsletter center-headed Section News.

CHALLENGES AND OPPORTUNITIES

BALLOTS FOR IEEE OFFICERS and Directors will be mailed to all members the last week in August. . . Encourage all to vote! . . . Innovation this year is a more informative selection of biographical facts about the candidates. . . After mailing your vote, don't throw away the biographies—not obtainable elsewhere and useful when you meet those elected.

LOOKING TO THE FUTURE, consideration is being given to requiring provision for write-in voting in all elections of IEEE and its units.

MEMBERSHIP DIRECTORY 1970. E. E. Apr., pp. 4B, 4C, 4D, 5, noted preparation of an all-member questionnaire, needed for compiling the biennial Directory, and designed to ascertain members' interests and activities. Second notices are going out Aug. 1.

Responses are important. Objectives were: 1) Accuracy, usefulness of the Directory. 2) An all-member technical-interest profile, to bring IEEE services into line with members' expressed (not guessed-at) needs. 3) Updating the BPA (Business Publications Audit) statistics which we furnish, describing, for the benefit of potential advertisers, the type of people who read our publications.

The nearer we come to 100% response, the more certain we'll be that our finger is on the pulse.

TOP-SIDE DEVELOPMENTS

WORLD FEDERATION OF ENGINEERING ORGANIZATIONS (WFEO), successor to EUSEC, the Conference of Engineering Societies of Western Europe and the United States, meets in Paris in October. President Willenbrock and General Manager Fink will participate, in behalf of IEEE Regions 1 to 6 (U.S.), as part of the U.S. National Committee of WFEO.

In many ways, it is anticipated, IEEE as a "non-national" society will profit by developing and sharing its world view with participating national bodies.

SPECIAL PRESENTATIONS TO BOFD.

BofD has instituted a practice of receiving, during each of its two-day meetings, one or more comprehensive functional presentations of a major phase of IEEE activity calling for searchlight illumination at the moment.

It is possible that notes, facts, tables, and graphs used as back-up in these presentations may be made available, upon occasion, to interested members. For a case in point, see item under Education News, below.

AWARDS BOARD is recommending some changes in the portfolio of awards as a result of its decennial review (E.E. June, p. 4). Results will be reported in October E.E.

EXTRA-MURAL HONORS. The President of the United States has appointed IEEE Director Hugh Heffner, of Stanford University, to be Deputy Director, Office of Science and Technology, Executive Office of the President. He will be Deputy in Washington of Lee A. DuBridge, the President's science advisor and head of OST.

JTAC CHANGES ITS NAME after 21 years to Joint Technical Advisory Council (formerly Committee). This cooperative endeavor of IEEE, an engineering society, and Electronic Industries Association (EIA), a trade association, is a prime

example of how engineers can pool their knowledge and give unbiased opinions in a social sphere, namely, conservation of the natural resource which is the electromagnetic spectrum.

For a resume of JTAC's forte, see Spectrum, June '69, p. 90. There, and in E.E. Aug. '68, pp. 6-7, reference is made to an exhaustive report: "Spectrum Engineering—The Key to Progress," prepared at instance of entities of the U.S. Government but having worldwide impact due to the nature of the spectrum.

In June, JTAC issued a press release tracing the effectiveness of its recommendations in either triggering off or coordinating efforts in numerous private and government bodies to deal with aspects of spectrum usage. In the interest of E.E. readers who may have wondered just how effective the unbiased voice of engineers can be in the public domain, the release is printed in full as a canary-yellow insert, p. 4G.

By no means is this the first time JTAC's findings have had profound effect. Other instances are set forth in a pamphlet: "JTAC Through the Years," updated annually. (Copy, Audrey van Dort)

(Note to newcomers: A name, thus inserted in a paragraph in E.E., is that of the staff member handling the matter. In this instance, Miss van Dort's address and staff assignment can be found per footnote at bottom of last page of each E.E. Mail and phone responses to these "shorthand" offers are welcome—they confirm the utility of E.E. in sparking interest and supplying wanted information.)

PUBLICATION NEWS

spectrum gets a new cover, beginning in July. . . Various aspects of publication are being reviewed with the purpose of maximizing readership. . . New departments and improved typography are likely this fall. . . Staff personnel has been augmented to carry out a program

of editorial improvement. (See "Welcome aboard")

OTHER PUBLICATIONS. The editorial handling of Transactions of the IEEE Groups will be speeded up by changes incident to the appointment of an IEEE Transactions Managing Editor. . . The IEEE Student Journal now has a managing Editor. (See "Welcome Aboard")

In "Spectral Lines," the Editor of Spectrum (June '69, p. 25) raised pertinent questions about IEEE Transactions and other Group publications. "Required reading" for Group chairmen, AdComs, and Editors.

INSTITUTION OF ELECTRICAL ENGINEERS (IEE, London). Measures of cooperation between IEE and IEEE in the information abstracting, indexing, and processing fields, and in marketing each other's products, worldwide, have been traced in E.E.: Oct. '67, p. 6; Dec. '67, p. 6; Feb. '68, p. 3; Oct. '68, pp. 5-6; also in Spectrum: Dec. '67, p. 17; Jan '68, p. 43.

By agreement reached in May-June '69, IEEE will continue in 1970 to market in the Americas, and IEE elsewhere: Electrical & Electronics Abstracts (EEA) and Computer & Control Abstracts (CCA); also the two current-awareness journals, Current Papers in Electrical & Electronics Engineering (CPE) and Current Papers on Computers and Controls (CPC).

By the new reciprocal agreement, IEEE obtains unrestricted access to the IEE's computer data base for EEA and CCA, covering world literature in all the fields of interest to both societies. Provisions are made for mutual advance consultation on modification of the respective data bases; on changes in policy, techniques, coverage, and indexing; and for mutual availability of innovations. The agreement runs for 3 years, then from year to year.

IEEE will deepen and enrich the coverage in the IEE data base of its own published literature, and derive its indexes from this expanded base. Work also continues on computer-assisted indexing methods, under a grant from the National Science Foundation.

EDUCATION NEWS

EAB ACTIVE ON MANY FRONTS. EAB revealed its philosophies to BofD at latter's March meeting, summarized its activities and those of its committees, reported the status of ongoing projects, raised policy questions, and forecast programs for the future. (A shift of emphasis on high school career guidance is reported in the next item.)

The speakers' working papers—not their talks—are being made available. They will be found useful by members seriously concerned (as the Directors are) in the direction and adequacy of IEEE's activities in the field of engineering education. (Copy, Jack Kinn)

CAREER GUIDANCE, by IEEE at least heretofore, has been the art of persuading qualified youth to secure an education leading them to careers in the electrical and electronics engineering. It has had its primary pre-college incidence in the high schools (although there is a school of thought which looks at anything later than junior-high as too late). IEEE has produced multi-hued pamphlets of persuasion, and has encouraged its Sections to use them in benign proselyting. (E.E. Oct. '66, p. 4; Aug. '67, p. 2.) Some members have dedicated many hours to these labors.

The Engineers' Council for Professional Development (ECPD), of which IEEE is a constituent, also has a program in guidance of youth into careers in engineering, but not necessarily into electricity-electronics. One phase is its sponsorship of the Junior Engineering Technical Society (JETS), with local units of which IEEE Sections have been encouraged by BofD to cooperate. (E.E. Oct. '66, p. 4)

There is now a trend toward accommodation of our objectives, to avoid fractionating, within engineering itself, the promise held out to career-seekers; and to obtain any advantages inherent in attracting youth to engineering-and-science as a package, at that impressionable stage of their course-planning.

Our EAB's Pre-College Guidance Committee, for example, favors coordinating IEEE's approach with ECPD's; having our

guidance program look to a supply of skilled craftsmen and technicians as well as engineers-by-profession; continuing the promotion, by Sections and Groups, of distribution of brochures and films giving accurate information, especially to high school students and guidance counselors, on career opportunities in engineering as we know them.

Samples of IEEE's 4-color, 16-page brochure addressed to high school students: "Your Challenge in Electrical Engineering," are available. (Copies, Jack Kinn)

SECTION NEWS

DISTILLED WISDOM from Emily Sirjane, who, more than anybody else, has helped Section Chairmen to set high standards:

1) Get all Manuals and records due you from predecessor. They belong to you. You'll need them.

2) Read the Section Manual—or neglect it at your peril. It answers most questions that will face you. It lists the materials and services available for the asking.

3) Read the Section Bylaws—they are unique to your Section.

4) Appoint Section Committee chairmen. Early appointments mean smooth continuity. Manuals are ready on request for: Awards, Finance, Group Chapter Operations, Membership & Transfers, Program (Meetings & Papers), Publicity and Public Relations, Section Publication. There are also nuggets in the Section Manual for them; also for the other appointees: Fellowship, Nominating, Section History, Student Activities.

5) Schedule an early meeting of the Section Executive Committee—during August (unless you did it in July!)—to organize and to plan for Fall and Winter.

6) Follow up those chairmen! Have them list the members asked to serve, and the acceptances. Check the committee's size for adequacy. Ask chairmen for copies of their schedules and targets, in writing, from August to June.

7) Know your Regional Director. Learn to consult him for advice and

guidance, whenever needed.

SECTION HANDBOOK FOR FELLOW GRADE NOMINATIONS, new, will be distributed in mid-September. Those wishing copies now may have them. (Requests, Emily Sirjane)

SELF-HELP FOR NOVITIATES. To help IEEE's "rolled-up shirtsleeves brigade" tackle almost any Institute problem, pamphlets and forms are available for the asking; articles for the looking-up. Over 200 were listed in "Where to Find It"—the blue Supplement issued with E. E. Apr. '68. (Copy, Audrey van Dort)

E. E. is punched for a 3-ring binder: get one, use it . . . When reading E. E., make underlines, marginal ticks, notes, in immediately-usable matter or for future reference, retrieval . . . Section Chairmen get 4 copies—3 for "fanning out" for action on marked items. Saves memos.

Skim all of E. E. See how the pieces fit together. And if you are a little overwhelmed, take comfort: No one is more vital than you in your appointed function. The life of the whole is the life of its parts—machine, man or IEEE.

Help others. Share your experiences. Our mathead says E. E. is here to encourage communications among the units of organization. We thrive on new slants. Write them up. (Address editor)

CRAM-COURSES ON SECTION OPERATIONS? E. E. Feb., p. 4. referred to TAB's first orientation seminars for Group chairmen, officers, and AdComs. Life becomes complex: pedagogy must adapt.

Is there a demand for formal orientation "courses" in Section work? The time-hallowed method is for the fledgling to go into communion with the Section Manual(s). . . There may be no better way. . . But hovering in the background is the becoming-ubiquitous tape-playback cassette (to be distinguished from the larger 8-track cartridge). In its capability of steering a listener through a Manual, and varying the treatment to suit the size of the Section, it holds promise. With Manuals in hand, and with cassettes playing back at the elbow for a long enough



IEEE NEW COMPUTER

Jack Fraum, Manager - EDP and Systems
William J. Keyes, Director - Administrative Services

- I What Do We Have?
- II How Does It Work?
- III What Can It Do For You?

I-WHAT DO WE HAVE?

An IBM 360/40 under full operating system. It is our "Third Generation Computer" installed at the end of April, 1969.

CONFIGURATION

- Central Processing Unit (2040) Internal storage capacity of 128K alphanumeric characters.
- Disk (2314) - Eight active file modules. Stores up to 29.17 million bytes on each disk pack.
- Card Read Punch (2540) Reads at rate of 1,000 per minute, punches 300 per minute.
- Tape (2415) Density 800 bytes per inch.
- Printer (1403) Maximum speed 1100 alphanumeric lines per minute. Print span of 132 characters.
- Display (2260) up to 960 characters.

ACCURACY - The measurement of the value of a mailing list is its degree of accuracy and the fact that it is up-to-date at any particular time. IEEE mailing files are updated weekly with all pertinent and current information.

SELECTIVITY - Another value of a good list is the degree of selectivity. Here again there is an outstanding file that affords complete flexibility and manipulation. We can produce names or names and address or other information within the confines of our large intricate data base.

SPEED - The pace of modern business more and more points to the computer as the necessary medium of list management. The computer is capable of handling updating, sophisticated selection, and label printout at speeds far superior to other methods. It will also eliminate duplication on many files; integrate all data on an individual member or subscriber in a single location; provide for tabulation of a broad spectrum of counts; facilitate further profiling and verification.

II - HOW DOES IT WORK?

Each new applicant for membership at IEEE, or a Group, or Subscriber to a service, supplies data about himself on his Application Form. As soon as this

application has been approved all basic information is keypunched into cards; and then processed to the member or subscriber computer record: The Member or Subscriber record contains basic information such as the record key (State, Zip Code and IEEE Number), which is the address of the record on the file, the name and address, membership status, grades, dates and status, Groups and subscriptions.

UPDATE OF THE FILE - The function of the update is to effect current changes to the record, i. e., adding or renewing Groups and subscriptions, transfers in grade, changes of address, renewing membership upon payment of dues, etc. It can also add or delete records on the file.

- A list is published at the end of each update of all transactions processed with exception codes, if any.
- All cash transactions are assigned account numbers and held for subsequent processing through the Accounting system.
- Certain changes to the Member file, such as transfers in grade and address changes create subsequent printings of Notices to IEEE Sections, Membership Cards, and Group Acknowledgments.

The Report Phase of the Update System generates Reports and Special Forms for use both in-house and distribution to members and Sections. These Reports are generated in either a weekly, bi-weekly, monthly or quarterly cycle.

WEEKLY:

Transaction Listing - This Report will contain all the Transactions that entered the update system for that week and lists any conditions that prevented a change to the master file. This listing is for both member and subscriber transactions. The Audit and Control Section of IEEE receives this listing for researching and correcting any erroneous or exception transactions.

Membership Cards - For each new election to the Institute and for each member who changes grade, a membership card is issued as a notification of present grade.

Group Acknowledgments - For every member who alters his Group enrollment (either by addition or deletion) a notification is to be produced listing all the Groups which he is with currently.

Membership Statistics - This Report, used for in-house purposes, lists by category, all members who joined or left the Institute. For example, a typical Report might have a page labeled 'Elections' followed by the name, grade and membership number of each member who was elected in the past week. Other categories include Resigned, Deceased and Transfers in grade. The last page of this report is a tally sheet which notes the total amount per category by grade.

MONTHLY:

Transaction Listing - This listing is almost identical to the one produced weekly except that only those Transactions which affected the master file are listed. It is used as a reference listing of all changes made to the files in the past month.

Monthly Section Journals - This Journal details, for the Sections, each change that took place in the past month that affects their membership. For example, a new addition to the Section, or a member moving out of or into the Section.

Certificates and Mailing Labels - This Report is a listing, for the engraver, of those people who have become eligible for certificates of Membership by either Election or grade transfer. Also produced are mailing labels for these certificates.

QUARTERLY:

Quarterly Section Journal - This is a listing sent to each Section of its total membership. It contains name and address information, member number, grade and group enrollment.

OTHER FUNCTIONS

MEMBERSHIP BILLING - The membership dues billing is done on an annual basis. It is a composite bill which itemizes membership dues, subscriptions and group enrollments payable for the calendar year. The first notice is produced early in November notifying members of the amount due for the following calendar year. The first notice bill also includes the annual membership card.

As required, a series of three additional billing notices are produced with the fourth and final bill mailed early in April. For accounting purposes, the billing program also provides statistics on each billing notice of the dollar amounts billed by grade, membership dues, subscriptions and group enrollments.

Members may elect to remit payment of their annual bill in two equal installments. A separate billing program produces reminder notices to these members, advising them of the total amount of the balance that is still due. The first reminder is mailed early in June. As required, two additional notices are produced with the final bill mailed early in October. As in the annual composite billing program, accounting statistics are also provided on the dollar amounts billed.

IEEE DIRECTORY - IEEE Members above the grade of Student are forwarded a Directory Questionnaire Card. The member's previous Directory listing

information is printed on the questionnaire card, and he is asked to make any changes or corrections. If the member was not listed in the previous Directory he is asked to provide full information.

A follow up questionnaire card is mailed to those members who did not respond to the first request. If a member does not return either questionnaire card, the mailing address for all other IEEE mail is used for the Directory listing information.

The final phase in accumulating Directory listing information is to extract from the membership files, the grades and dates of election for each member.

SUBSCRIPTION FULFILLMENT - In addition to all the functions performed under List Management, IEEE systems meet the special needs of Subscription Fulfillment. These new and specialized techniques will provide advertisers and circulation auditors with more comprehensive statistics. In Subscription Fulfillment IEEE systems provide virtually a revolution in data handling. In addition to constantly updated names and address printed on all standard labels 1 up through 4 up, we print 4 and 5 address lines with one variable identification line. We are up to date in the processing of 2nd class mailing zone numbers and the whole changing world of zip coding. We give overnight reference to all file data status such as paid, non paid delinquent, expiration dates and billing date.

STATISTICS - Bi-annual statistics are produced for Spectrum and Proceedings based on the Business Publications Audit code of each member and subscriber record on our files. The statistics are accumulated by state and are represented in the form of a table which gives a total for each business category, a total for each occupational category, and a total for each business/occupational combination. Additional totals are provided for each state giving the number of qualified member, student, and APO/FPO subscriptions.

Monthly statistics are produced on the number of members in each grade of membership and the number of members enrolled in each group. Each set of statistics is broken down by Region, Council, Section and Subsection with totals for each as well as a grand total, for use by the IEEE Accounting Department and other Administrative Services.

In addition, statistics are produced on Subscribers to group transactions, giving the number of subscriptions received through agencies and the number of subscriptions given at the special library/college rate.

COMMITTEE/SUBSIDIARY FILE - The Committee/Subsidiary data base is a file that contains three (3) distinct types of records:

- (1) Committee
- (2) Promotional
- (3) Subsidiary Lists

- A basic Committee record consists of the committee member's member number, name and address, IEEE geographical coding and an indicator as to whether he is an IEEE member. In addition there is information concerning each

committee to which he belongs: committee code, start date, office held, and IEEE geographical coding if desired, as in the case of a committee associated with a particular IEEE Region or Section. When a member's service on a committee terminates, the committee information is retained on the data base for historical purposes. Upon termination an inactive flag and termination date are added to the above information.

- The Promotional portion of the file is used to record the names and addresses of individuals who receive complementary copies of one or more of the IEEE publications: Spectrum, Proceedings, Student Journal and Electrolatina. The publications are indicated on the record by a publication code. Associated with the code is a series of seven (7) possible interest area codes
- The Subsidiary Lists are used to record the names and addresses of people who attend various conferences and conventions. The record contains a subsidiary code which identifies the specific conference or convention.

Updating the File - The Committee/Subsidiary data base is updated weekly in order to add new records and apply necessary changes or additions to existing records. As output of the update 3 x 5 record cards reflecting additions and changes are produced for distribution to IEEE staff personnel who maintain files on the committee members and promotional recipients. No cards are produced for Subsidiary lists.

Purpose of the File - The primary function of the Committee/Subsidiary data base is as a source for producing lists via the Selection Program. Examples of such lists are as follows: Mailing labels (name and address) for all members of a specific committee to announce a committee meeting; mailing labels for recipients of a promotional copy of an IEEE publication to be affixed to the publication; a listing of name address and committee affiliation of all members in a specific IEEE geographical area for use by a Region or Section officer; or mailing labels for all persons with a certain subsidiary code to announce a conference or convention.

ACCOUNTING

Cash Receipts Program - The input for the cash receipts program consists of three files which have their origin in the edit program and the update program. These files are made up of the following information:

1. Miscellaneous Cash - contains all miscellaneous cash payments, payments on advertising receivables, and any cash receipt which cannot be accepted during the running of the edit program.
2. Member Cash - This contains all cash transactions which affects the member file through the update program. This file also

contains cash which cannot be accepted by the update program.

3. Subscriber Cash - This contains all cash transactions which affects the Subscriber file through the update program. This file also contains cash which cannot be accepted by the update program.

The programs then update the accounts receivable file and produce the following reports:

- 1) Weekly cash report by member number
- 2) Weekly cash report by account by member number
- 3) Weekly advertising cash receipts by invoice number
- 4) Weekly advertising cash receipts by sales territory
- 5) Monthly cash receipts by member number
- 6) Monthly cash receipts by account by member number

Accounts Receivable Program - The input for the accounts receivable programs is data from the invoices sent to our customers. This data is used to update the accounts receivable file.

After the file has been updated a report by invoice number is printed for the new invoices which have been added to the file. This report contains the invoice number, name of customer, account number, invoice amount and a break down of the distribution of each invoice.

Reports are prepared for the new Advertising receivables by sales territory and by invoice number. These reports contain the following information; invoice number, customer name, magazine code, territory code and amount.

At month end an aged trial balance of the accounts receivable file is produced. This trial balance is aged in the following manner: 0-30 days old, 30-60 days old, 60-90 days old, 90-120 days old, over 120 days old.

Vouchers Payable Program - Authorized voucher input data is prepared for updating the Vouchers Payable File. After being added to the file a report is prepared listing the new vouchers. This report contains the following information: voucher number, fiscal week, payable name, member number, total amount, account number, distribution amount.

The Accounting Department will request checks prepared for a certain fiscal week. This fiscal week will then be typed into the computer and compared to the voucher payable file. Checks will be prepared for all vouchers containing the fiscal week requested. After the checks have been prepared a report will be printed containing the following information: voucher number, check number, payable name, tax code, check amount.

General Ledger Program - Input to update the general ledger is received from the following source programs; cash receipts, accounts receivable, vouchers payable, check distribution and advertising accounts receivable. In addition to the input from the above programs cards are prepared from journal entry input.

The input from each program is posted to the various general ledger accounts which it affects.

In addition to affecting the general ledger accounts the card journal entry input also will update the following files: accounts receivable, vouchers payable, advertising accounts receivable.

After all files are updated a listing of the general ledger in account order will be produced.

III - WHAT CAN IT DO FOR YOU?

Plenty - depending upon what organization or unit you are connected with and if you ask!

SELECTING FROM THE FILE - The basic concept of the selection system is the capability of extracting information from the records of the people on our files, and representing this information in a variety of output formats. We have designed the system to provide optimum flexibility without loss of efficiency.

The criteria upon which selections are made can vary with each execution of the program. The determining

factors are who needs what information for what purpose. For example, it might be necessary to know the names and address of all the people living in New York and who subscribe to Proceedings. Some one might like to know how many members attended a particular college; or a Section might wish to have labels produced to be used to mail information to its members.

Once, the extraction of desired information has been made, this information may be represented in various ways. These include standard mailing labels (Cheshire and Avery), lists of names, lists of names and addresses (with or without additional data), 3 x 5 cards, and counts. Within the above formats there are other options available which enable us to conform as closely as possible to the needs of the people we service.

Selections are made on a regular weekly basis, and more frequently when necessary. The mailing labels for IEEE publications are produced through this system.

We also have a complete mail follow through system within the Administrative Departments of IEEE. (Brochures, inserting, affixing, mailing). Direct inquiries to Miss E. Sirjane.

IEEE - EDP is distinctly service-oriented and has been made flexible to perform in the style and degree dictated by the membership. The most valuable service we offer is people with talent and skill to efficiently handle your work on our own third generation hardware. The department management believes in both speed and accuracy that will economically serve your needs.



Technical Activities Board

* Field of Interest of Engineering Management Group Redefined

On the recommendation of TAB, the IEEE Executive Committee at its meeting on June 26, approved the following revision of the Field of Interest statement of the Engineering Management Group:

"The field of interest of the Group encompasses the management sciences and technology applicable to organizations engaged in or overseeing research, development, design, evaluation, production or operation of electrical or electronic equipment/systems or allied activities. These areas of interest include: characteristics of technical people; effective laboratory or work environments; economics of invention, innovation, and application; relations between engineering and other functions in the organization; techniques for program/project management, including schedule and cost controls; organizational structuring; and related subjects. Also of concern are the socio-economic impacts of technology on society."

* Special Conference Publication Prices for Overseas Members

Dating back to 1966, a special price of one-half the listed IEEE member price has been in effect for overseas members, who seldom can arrange to attend IEEE conferences held in the United States. Recognizing that a conference publication is usually included with the registration fee on the basis of the actual printing costs (normally about one-half the listed price), the above special price for overseas members was adopted.

* Warehouse Inventory of Conference

Publications

In 1967, TAB adopted an inventory control policy for conference publications in the IEEE warehouse, based on the experience that under normal circumstances the number of copies sold in the first year of availability of an item was approximately one-half of the total number that would ever be sold. The control formula that was adopted is based on annual inventories and a reduction of stock through sales, or otherwise, of 50% per year until a base of 25 copies is reached. This means, for example, that, if the stock was reduced through sales by only 40% in a calendar year, an additional 10% would be disposed of in order to achieve the formula reduction of 50%.

The above formula was held in abeyance for two years because many individuals said there were "better ways" to dispose of the excess stock. These better ways have not appeared (giving stock to commercial organizations and other potential customers was not considered to be a better way). The warehouse is now jammed with publications. Each conference sponsor will be informed by individual letter of stock on hand and our proposal to start implementing the above formula in September.

* Group Awards

Group Awards, including both those sponsored directly by the Group or through its Conferences, are a part of the total IEEE awards program and thus come under the purview of the IEEE Awards Board. The IEEE Awards Board is responsible for the review and approval of the proposals for new awards. A proposal for a new award should cover the following items:

- a. Statement of award or recognition objective.
- b. Form of the award, i. e., plaque, certificate, monetary, etc...
- c. Criteria for selection.
- d. Mechanism for selection.

The TAB Office attempts to cooperate with the Awards Board Office in maintaining an up-to-date list. We are frequently surprised however to discover an award not previously included in the master list. Starting with the next issue of EE, we will undertake a review of all Group Awards.



PROGRESS IN SPECTRUM ENGINEERING SEEN BY THE JTAC

The Joint Technical Advisory Council, marking its 21st anniversary as of June 17, took note of the many programs now underway in the offices of the DTM, the FCC, and elsewhere in industry, government and research institutions that are supportive of its major recommendations made in the recently published JTAC report SPECTRUM ENGINEERING—THE KEY TO PROGRESS. The report culminated a comprehensive four-year study by over 200 of the nation's leading experts on the use of radio spectrum.

One of the JTAC's prime recommendations in this report was to establish a modern spectrum engineering and system-design philosophy for the technical procedures relating to the allocation and assignment of the radio spectrum. Adoption of such a philosophy would be essential in order to establish the "next generation" spectrum engineering system. To implement this recommendation, JTAC outlined a pilot project which would put the new frequency selection concept into experimental operation in a trial region. Results obtained from the project would then provide the basic information required to proceed further with the development of a flexible full-scale system.

Many steps have been taken on the part of numerous private and government entities which will ultimately provide the much-needed data required to fulfill the JTAC recommendations. Among them include the following:

- The Office of Telecommunications Management and the Electromagnetic Compatibility Analysis Center (ECAC) have been studying the role they could play in data collection and analysis of specific problem areas. Their findings point more and more to the need for a separate facility, space limitations being a major factor. Planning effort is now moving forward for the creation of a Nationwide Electromagnetic Compatibility Analysis Facility (NECAF). The OTM plans to seek funding for this new facility in the fiscal 1971 budget.
- Some work has also been done on defining and expanding the parameters needed for the data base which will be required for the new spectrum engineering system. Meetings among representatives of the Department of Defense, Electromagnetic Compatibility Analysis Center and Office of Telecommunications Management on the design of the data base are underway.
- Some preliminary work has been done among users in the Los Angeles area as a potential pilot project trial region. A Southern California Land Mobile Users Committee, representing non-government users, has been organized. This organization has volunteered to do initial work on the pilot project until an adequately funded entity is established by the government. The FCC is

considering recognition of this body as an interim agency to handle preliminary pilot project work. Government users would join in later, after funding is available.

In addition, the OTM has initiated a study of spectrum usage in the L band telemetry services (1435 - 1535 MHz), including government and non-government users, which will provide information for use in developing the new spectrum engineering system.

- The FCC contracted with the Stanford Research Institute to study land mobile channel assignment procedures. This study has led to the development of another method of monitoring spectrum occupancy. The method uses a scanning receiver with the output being computer processed to produce a three-dimensional display on movie film. It is automated and very rapid compared to manual monitoring. Further study is necessary to determine what role this method could play in the monitoring effort needed to support an effective spectrum engineering system.
- The FCC has invited bids for a study contract for the development of spectrum utilization criteria and frequency assignment procedures for the frequency range of 1.85 to 15.25 GHz; they also request consideration of frequencies above this range.
- An interdisciplinary advisory council, advisory to the OTM and called the Electromagnetic Radiation Management Advisory Council (ERMAC), has been established by the OTM. Rex Daniels, Chairman of the section of the JTAC report dealing with "side effects," has responsibility for writing a report on the results of work in this field to date. The first volume, "General Considerations," is complete; the second volume, "Technical Considerations," is now being reviewed.
- A public Safety Study, under the direction of IIT Research Institute, has been made for Association of Police Communications Officers (APCO) under the Law Enforcement Assistance Program with regard to the present use and future needs of police frequencies in the Great Lakes area. The study showed that already there was a need for additional channels to meet current load.
- The National Academy of Engineering (NAE) has a Telecommunications Committee which, in turn, has a panel, sponsored by the OTM, looking into the technical, economical, and social considerations involved in a value-based, decision-making process for spectrum allocation.

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time, it could be assured that nothing important would be missed in the training of the newcomer. Your child may be learning that way at school. The quality of playback units is going up, the price is coming down. IEEE's capability of putting the pizzazz on tape is improving. The staff would appreciate reactions, suggestions. (Write Jack Kinn)

SECTION REBATES FOR 1970 are based on Section membership Dec. 31, '69. To boost Section membership before deadline, emphasize to possible applicants that if they mail forms so as to be postmarked just after Sept. 15, they stand to be elected as of Oct. 1. If so elected, applicant pays in advance only the usual full-year 1970 IEEE dues (or Group fee, or subscription to any periodical for 1970) but he will receive as a bonus full benefits for the last 3 months of 1969. (Read Bylaws 108.5, 405.7, 501.7). Applicants receive the first periodical routinely mailed after receipt of application (Bylaw 108.4).

The same principles apply (but with lesser benefits to the applicant, same benefit to Section rebate) for memberships effective Nov. 1 and Dec. 1.

SECTION CAN SAVE POSTAGE on Section bulletins and newsletters by applying to Postmaster for a "Non-Profit" status for mailing. "Non-Profit" standing cuts usual charges for both 2nd Class and 3rd Class mail. IEEE is a non-profit organization. If Postmaster asks questions you cannot answer, consult Ralph Flynn.

SECTION/COLLEGE RELATIONS. Autumn is the time for cultivation. Regions encourage Section, Subsection, Chapter Officers to meet with Counselors and Student Branch officers in person; to arrange exchange speakers and visits, hold joint meetings, undertake mutual tasks.

Fall is also proper time to prepare for any college-papers contest to be run in the Spring. Students have to become interested and start work well in advance. (IEEE Student Paper Contests pamphlets, Mrs. Emma White)

Student Branches and Student Associate Branches are a major source of new

IEEE members. By fostering the Branches, and arousing students' interest in electrotechnology, we build IEEE.

SECTION/BRANCH MEETINGS. One good Section meeting a year on Students is almost a must. Preparations for it will vary with the number of Student Branches and Student Associate Branches in Section territory. Key men are Section chairmen, Student Activities Committee chairmen, and the Counselors (see Organization Roster, p. 71, for names of schools and Counselors). But don't make the mistake of not having some Students in on the planning of the meeting and all its details! They know what they listen to at school all day and what they'd like outside for a change. (Panel types of presentation are often more welcome than lectures, for example.) For suggestions, see Section Manual, 7.4 - Helpful Hints, #9. Students' Night Program, p. 41; also Exhibit No. 1 of 7.4, p. 42.

STUDENTS AT BRANCHES and at Associate Student Branches in your Section are automatically members of your Section. As such, they should see or receive the Section newsletter or bulletin. Direct mailing to each Student is not a requirement—furnishing copies in bulk to the Counselor may be more effective.

But if your publication is mailed to every Student directly, "go all the way" and include Student News.

Fostering ideal Section relations with the colleges is a fine art. E.E. Apr. '68, p. 4, told how Canaveral boosted its college's membership to 140 (from 25!) (Copy, Audrey van Dort)

SECTION PAYS STUDENT DUES. Exec-Com in May gave permission to Nebraska Section to pay all or part of the Student membership dues for Univ. of Nebraska members of the sophomore class in electrical engineering who wish to become Student members of IEEE. (**Best-in-Show Ribbon for this item** - Ed.)

TOOLS AND AIDS

STATEMENT OF POLICY. Current printing (blue) bears revision date "Sept. 1968"

on index page. But if page D of your copy isn't marked "Revised to June 1969" you have an out-of-date version. Statement of Policy 2-G on "Open Attendance at all IEEE Meetings and Other Activities" was importantly revised in Jan. '69. (See blue Supplement, E. E. Feb. '69.)

An unnumbered Statement of Policy, on RAB's not sponsoring Fellow nominees, was reported in E. E. Jan., p. 5. It does not yet appear in the revision of any page.

Revised Statements of Policy are included in re-issues of the Sections Manual and the Technical Activities Manual. Next re-issues will reflect actions up to and including BofD, Ottawa, Aug. 27-28.

All working members of IEEE ought to be familiar with contents of Statements of Policy. For example, no one should attempt to start or run a conference, sole or joint, small or large, local or international, with or without exhibits, until he has become quite familiar with Statement of Policy No. 2, parts 2-A to 2-J.

BYLAWS. The current reprint is that of Mar. 27, 1969. (Copy, Emily Sirjane)

Changes are expected to be made by BofD at Ottawa, Aug. 27-28, report of which will be found in October E. E.

ORGANIZATION ROSTER—SEPT. '69 will probably be sent out in early September. (Copy, Emily Sirjane—after Sept. 15, please.)

IEEE'S NEW COMPUTER, known affectionately as Bill Keyes' Blessed Behemoth, is described, at E. E.'s behest, by Jack Fraum and Bill Keyes, of the IEEE staff, on pp. 4A-4D.

Shake-down was rough in spots, but nothing so useful-in-adversity as somebody else's behemoth which threw down cards on "Sex, M, F" into 6 stacks.

Kidding aside, immediate benefits of the new facility are bewildering, and potentialities are legion, as the article amply indicates.

WELCOME ABOARD!

New Section chairmen, officers, and committeemen in the Sections and their operating units.

India Section, embracing the entire vast country, including territory of the old Kanpur Section.

Monterrey Subsection of Mexico Section.

Education Group Chapter of the United Kingdom and Republic of Ireland Section.

Reconstitution of the Microwave Theory & Techniques Chapter of North Jersey Section by addition of Antennas & Propagation to make it a Joint Chapter.

Staff:

Charles W. ("Chuck") Beardsley comes to us from General Electric and has been named Managing Editor of IEEE Student Journal, and will work with the Editorial Board and Editor Barnes.

William Evanzia (from Electronics World) and Paul Hersch (from Science & Technology), Associate Editors of Spectrum; and Miss Mary Jones, Assistant Editor; all of staff of Ron Jurgen, Managing Editor.

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Canary - JTAC Progress	4G