

ELECTRICAL ENGINEERING®

TEAM-THEME. Comes October-November. Away from virtuoso golfers, tennis stars, jockeys. Into football, soccer, the World's Series, with basketball and hockey coming up. As in sports, so in IEEE: when the busy season rolls around, the team's the theme.

IEEE's players are its organizational Units: its Groups, Conferences, Committees, Boards, Regions, Councils, Sections, Subsections, Chapters, Branches, and Headquarters. Together they form a Team of Teams.

Each unit may have its quarterbacks, pitchers, crack goalies, masterminders, and 7-foot (2.2m) centers; but what counts most is teamwork—through to the last man. Ask any chairman!

IN THE FALL, NEW FACES shine in our counsels, new hands seize the helm, especially in the Sections. "Electrical Engineering" (E. E.) seeks to guide newcomers (and old-timers, too) in four ways: 1) in its opening, calendar-oriented paragraphs and under "Needles and Prods," to remind them of things that need planning or doing right now; 2) to call attention to action-worthy projects, or ways to make their influence felt, under "Challenges and Opportunities;" 3) under "Tools and Aids" to tell them of material and helps available, where to find them or how to get them; 4) under "Top-Side Developments" and "For Your Information" to give news of Institute operations so that they may relate their work to the larger IEEE picture.

Read E. E. Mark it. Save it.

DOMINANT TOPIC IN THIS E. E. 13 is the decision of the August Board of Directors

(BoFD) to come to grips with the now-apparent shortcomings of IEEE's total program of continuing-education. By creating an Educational Activities Board (EAB), on the same plane as the Technical Activities Board (TAB) and the Publications Board, BoFD has put impetus behind its intent to meet the educational needs of certain segments of our membership now inadequately served.

E. E. asked Senior Past President Oliver, whose Committee on Educational Activities analyzed the problems and recommended the adopted solutions, briefly to summarize this historic step, in the lead article on page 2. E. E. also asked staff Director of Educational Services Kinn to make a synopsis of the Oliver Report and to forecast the possible direction EAB may take; his appraisal appears as the white Supplement to this issue.

November IEEE Spectrum is scheduled to carry the Oliver Report in full.

NEEDLES AND PRODS

"BONUS" NEW-MEMBERSHIPS now timely to exploit. New applicants, from October 1 until the end of 1967, pay only the usual full year's IEEE dues and Group fees, or subscriptions to all periodicals for 1968; but in addition they receive without further charge full benefits during the remaining months of 1967. (See recently revised Bylaws, last paras. of 108.5, 405.7, 501.7.) (Also see E. E. 12, Aug., p. 1.)

Membership & Transfers Committee is promising "an aggressive campaign" soon.

By B. M. Oliver, Chairman, Ad Hoc Committee on Educational Activities

On August 22nd of this year your Board of Directors moved your Institute a significant step forward by authorizing the creation of an Educational Activities Board. This new board will have the same status as the Publications Board and the Technical Activities Board, and its chairman will be a member of the IEEE Executive Committee. This action on the part of the Board was taken on the recommendation of the Ad Hoc Committee on Educational Activities appointed by the Executive Committee in the late fall of 1966.

In essence, the IEEE Board has said that the educational activities of the institution are not only a major area of activity, on a par with its publications and technical meetings, but also that these activities warrant the same kind of support from staff and membership as do these other areas. This, in turn, means that in the future there

will be a marked increase in interaction between the Sections, Groups, and EAB--so that the ideas, challenges, and opportunities facing the Institute in the educational area can and do receive the highest level of attention and maximum effective effort that this collective body is capable of bringing to bear.

The recommendations of the Ad Hoc Committee are outlined in a Supplement to this issue of E. E. In addition, a complete treatment is scheduled to appear in November Spectrum. I urge you to read them both.

There is no question that IEEE educational activities will improve and expand in the ensuing years. But we must crawl before we can walk. Therefore, do not expect revolutionary changes in the next six months--do expect to see and participate in evolutionary changes during the next few years.

RELATIONS WITH THE COLLEGES. Autumn is always timely for cultivating them. This year EAB is a conversation piece: when we talk education we talk academic language.

Regions encourage their Sections, Subsections, and Chapters 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 preparatory time for any college papers contest to be run in the Spring; students have to be interested and start work well in advance.

Student Branches and Student Associate Branches are a major source of new IEEE members. By fostering such Branches and arousing students' interest in electrical/electronics technology, we build IEEE and further the engineering profession.

SOURCE OF MEMBERS TO BE TAPPED. Community colleges and Junior colleges

and Institutes which do not grant degrees are often overlooked by Regions and Sections as sources of future engineers. Indeed some of them have been off-limits for the enrollment of Student Associate Members and the establishment of Student Associate Branches, by their failure to receive ExecCom approval, yet, many do have significant programs in engineering and physical sciences.

BofD in August made a significant change in the Bylaws, by virtue of which this type of school no longer has to apply for and receive Executive Committee (ExecCom) approval to meet criteria for the enrollment in IEEE of its bona fide students, [hence for formation of an Associate Student Branch.]

STUDENTS (Continued from p. 1). Under revised Bylaws 105.6.b and 105.8, the base for Student Associate membership is broadened to include (apart from students

III-A --- COMMITTEE MEETINGS

The editor of "Electrical Engineering," in his informal and unofficial compilation of four Green Papers, is examining The Why and How of Successful Committees under the headings: I - Committees' Purposes (June issue); II - Committee Personnel (August); III - Committee Meetings (in two issues). Instalment III-A, this issue (October) deals with general matters of conduct; III-B (December) more specifically with Rules of Order.

Applying material herein. IEEE organization entities (units) differ widely in size and function. No one set of rules would apply equally well to the conduct of business by a committee-of-three, say, and a large board; by a Group, on one hand, and a Section on the other; nor by disparate committees dealing variously with policies, administrative matters, persons' qualifications, or technologic details.

Each committee or unit ought, therefore, to adopt its own rules of conduct. Those given in this Green Paper and the next one are based upon the relatively complex requirements and experience of a large committee (a recent Technical Activities Board). Smaller units may trim them sharply to their lesser needs if, indeed, some of the procedures and reasons therefor prove suggestive.

A certain informality will be noted in rules adapted to the needs of units in engineering societies that would be out of place in rules adopted by bodies in which there are parties or factions (like legislatures) or by a body (such as a Board of Directors) whose actions are legally binding.

More than half a century of committee work in IEEE and its antecedent societies lies behind some of the rules included. Some of the principles are much, much older. Francis Bacon, around 1597 A. D. included many of them in "The Essays," especially "Of Dispatch," "Of Counsel," "Of Innovations," and "Of Ceremonies and Respects." Quoted sayings in this instalment, not otherwise credited, are paraphrased adaptations from Bacon's writings.

General duties of a committee. In a technical society a portfolio of interlocking committees operates in several echelons, each unit having a stated relationship to the others and a well-defined scope or area of interest as covered in Green Paper I.

Each committee is a creature of the superior body to which it reports and is bound by the superior's scope, rules, and practices, as well as by its

own bylaws and procedural rules. In turn, it is usually free to create standing or ad hoc committees of its own to help it get its work done.

A unit's continuing posture is therefore dual: sensitive to its obligations to its parent; demanding of its sub-entities, in its supervision of them.

Scheduling meetings. "Committee achievement is not to be measured by the number of its meetings." Hold only so many as are needed to advance and complete all unit objectives.

At the first meeting of a unit after a change of officers and members, a schedule should be adopted of dates, places, and times of meeting throughout the year, so that all are put on advance notice to block their calendars.

The chairman should be empowered to revise date, place, or time of any meeting or to cancel it, in either event upon x days' notice to all members.

An ad hoc committee should estimate its meeting requirements for concluding its work and similarly schedule them.

Any n voting members, upon m days' notice setting forth the reasons, should be able to request a special meeting of the unit at its usual meeting place. If so requested, it may be provided that the chairman must call the meeting and that the secretary must transmit the agenda and supporting documents.

INVITATIONS

Notices to unit members. Official notices of each unit meeting (place, date, time) are sent with the agenda to all members (voting and non-voting, where there is a distinction). Chairman and secretary collaborate in the wording of the notices. It is desirable that the call of the meeting state not only the time of convening but also the projected duration of recesses and hour of adjournment, so that members may fit travel reservations, business appointments, and long distance telephone calls to them.

Any member not able to attend a meeting in person may request the chairman to recognize an alternate to attend and participate. When a sub-unit is involved and there is a vice-chairman able to attend, he shall be so invited. Whether such stand-in members are permitted to vote should be spelled out in the rules adopted. (In TAB, they are.)

Any member not able to attend a meeting in person may ask the chairman to have his communicated views read (if of reasonable length), but not to record any vote on the strength of the occurrence.

Under Article XIII, Section 1, of the IEEE Constitution, the President of IEEE is, ex-officio, a member of every committee. As such he is entitled to an invitation to every committee meeting, but to have so many tendered would lead to a surfeit. It is appropriate to invite him if it is known he will be in the vicinity. Items on the agenda of known interest to him may be marked and transmitted.

Invitations to others. Depending upon circumstances and agenda, an invitation, if appropriate, may be extended to other IEEE officers, a Regional or other Director, an Executive Committee Coordinator, a Section or Group chairman, the chairman of the unit's superior committee, or the designee of any of them. No voting rights attach.

Invitations, with or without copies of the agenda, may be sent to other persons designated by the chairman, to attend without vote. By arrangement, these may include members of the headquarters staff mutually agreed upon by chairman and General Manager.

Any unit member, by advance arrangement with the chairman, may invite a non-member of the unit to attend all or part of a meeting, without vote, in order to facilitate consideration of agenda items. Included might be a person or persons to give support to a petition or resolution.

The chairman decides whether such advocates may be admitted, how many, and how long they may stay. "Let petitioners," cautions Bacon, "be heard by a subcommittee first, then, if the occasion serve, before the committee. Let them not come in numerical or undisciplined force, for that is to clamor the committee, not to inform it."

AGENDA

Compilation. Agenda for a meeting are prepared in advance by the chairman and secretary in collaboration, to insure that no item shall be forgotten and that deliberations shall come up in a logical order.

Agenda are mailed to all voting members (at least) y weeks before the meeting.

Cumulatively, agenda reflect pressing phases of the unit's objectives and planning. (See chairman's introspective checklist, Green Paper, E. E. 11, June.)

Items included. If a member has indicated by corresponding with or talking to the chairman that a certain matter should be brought up at a meeting, the

chairman will include the item in the agenda for consideration on its merits. This is consonant with a general invitation to unit members to furnish agenda items.

Included also are all sub-unit resolutions, petitions, reports; and items which have developed since last meeting in correspondence or in course of operations. If received too late for the mailed-out agenda, the items are worked in at the meeting by the chairman as time permits. To support late items, documents may have to be distributed at the meeting; this precludes desirable advance study and consultation.

Preparatory work. Supporting papers sent out with the agenda are, indeed, a significant part of the record of the meeting not customarily repeated as attachments to the minutes.

Supporting papers are frequently the work of subcommittees or headquarters personnel who have wrestled with details and wrapped the subject up in a well-ordered study. Each member is supposed to have read and digested this material before he comes to the meeting, as a valuable time-saver.

If a chairman wastes time in meeting by permitting this compilation to be read, his members will thereby be encouraged to neglect their home-work. "The three parts of committee work are preparation, debate, and conclusion. If you look for progress, let the middle part, debate, only, be the work of the whole committee; and preparation and conclusion the work of a few."

Order of agenda. The chairman usually tells the secretary the order in which to present the mailed agenda. Items are given consecutive or decimal numbers for convenience in identifying attached papers, correspondence, reports, and exhibits. The chairman may direct a time-dividing of items by categories, such as Action, Discussion, Information.

THE MEETING PROPER

Seating arrangements. The chairman and secretary work out the best arrangement of table and chairs within the limits afforded by hotel, headquarters, convention, institution, or other meeting place.

The chairman selects the position which he will occupy at the table, usually placing the secretary next to him, with ample table space for their papers. The vice-chairman's and stenographer's positions are also designated.

Selection of table positions by members, as they arrive, is ordinarily left to them. If there is a scarcity of places at the table, these should be reserved for voting members, with invitees occupying chairs along the walls.

It will be found that initial seating positions taken by the members will automatically fall into a pattern maintained in successive meetings.

Seating arrangements have an effect on members' participation; or, conversely, the pecking-order is a self-determinant of seat positions. "A long table, or a square table, or seats about the walls, seem things of form, but are things of substance. At a long table, a few at the upper end, in effect, sway all business. In a square formation there is more use of counselors who sit lower."

A square table, or a round table, or a hollow square of tables, is not always available. Some chairmen seek the partial advantages of these types, when only a long table may be used, by presiding at the middle of one long side, instead of at one end.

The T-formation adopted sometimes at IEEE headquarters for reasons of space, with the chairman flanked by others at the top of the T, has been criticized by occupants of seats at the long table for total eclipse of the flanking members. The latter could rise when speaking so that their thoughts might be weighed equally with others'.

Identification of participants. When comparative strangers meet in committee (even a small one), it is helpful to supplement the usual stand-up-sit-down oral self-introductions (most of which will be modestly mumbled and incomplete, and presented too fast for members to record) with some kind of blackboard notation or mimeographed hand-out, for study and reference throughout the meeting and subsequent ones. Simple place-cards may be used. When a person is speaking, others have a natural curiosity as to who he is, where he comes from, what he does (or did) for a living, and where he fits otherwise in the IEEE family. The sooner names and faces are associated, the quicker an esprit de corps can be built up to tackle problems together. The chairman, who is most likely to know the maximum number personally and has his secretary to consult, can help the members by referring to speakers both by family name and nickname in the early stages, as he learns them himself.

The Chair. The chairman of the committee presides at meetings. When he is absent for the day, or out of the meeting room temporarily, his place is taken by the ranking vice-chairman or other person, usually as provided in bylaws or operating manual. In the absence of those so designated, the chairman may select anyone present to preside.

However chosen, the chairman's alternate, having been "passed the gavel," assumes all the chairman's powers for the conduct of the meeting.

Whether the actual chairman of the unit or his alternate, the presiding officer is called "the chair." He is addressed as "Mr. Chairman."

The Gavel. More symbolic in IEEE than actual, the gavel is the badge of authority of the chair. When used, all attendees become silent at once so that the chair may make a ruling or give direction to the business.

In the absence of an actual gavel, the chair improvises one, say by striking a water tumbler; its first use is to call the meeting to order. All members should be attentive to its employment from time to time.

Order of business. The chair announces the order of business and any additions to or departures from the mailed agenda known to him at the outset.

Cogent reasons for departing from announced order are: immediate non-availability of members and others expected to be present; known early departures of key members on topics well down on the agenda; presence of non-members invited to be present during particular items.

If a member intends to bring up at the meeting a matter not on the mailed agenda, it is preferable that he should have mentioned it to the chair before the meeting began, for inclusion in the opening announcement. Failing that, he may say, after the chair's announcement and upon being recognized: "With the chair's permission and unless the matter has come up previously, I should like to have time reserved under New Business for consideration of (identify) ." The secretary takes note and reminds the chair privately at the proper point in the agenda.

Approval of minutes of the previous meeting is one of the first items of agenda, to clear the way for further business.

The secretary should be first succinctly to correct errors which have been called to his attention. It is a time-saver if a member, (who upon reading the minutes has detected an error, or has found himself misquoted, or his vote not correctly recorded, or himself not properly marked present or absent while certain items were being considered,) shall have notified the secretary by mail, so that these changes may be included with others.

The time of approving the minutes is not the proper one to seek to modify actions heretofore actually taken and factually recorded.

THE CHAIR AS MODERATOR

Recognition of rights and interests. The chair jealously safeguards the right of voting members to be heard on any pertinent subject at an appropriate time. He also extends due courtesy to invited participants in the meeting.

The desideratum is that each member shall be heard on every item of the agenda to which the member feels he can contribute constructively.

It has even been found feasible in some committees to provide that all who attend some unit meetings, whether members of it or not, may participate in the deliberations at such times as they receive recognition of the chair. However, this is by far not a general practice.

The chairman as a model listener. While in some instances the chairman exerts leadership (especially in the preparation of agenda material) to sell an idea to his committeemen, in other matters his position is that of eagerly seeking counsel on which way to go. In the latter cases, "let him beware lest he reveal his own inclination too much in that which he propoundeth, for else counselors will but take the wind of him instead of giving advice freely."

The chair will "listen carefully to one who presents a new subject, not interrupting to take a short cut; because a person so interrupted will in the end take longer than if he had been permitted to follow his own course." Through lapses of this kind, says Bacon, "the moderator becomes more troublesome than the speaker."

Cautious exercise of power. In the dispatch of the business, a point is sometimes reached where the chair must exercise his prerogative of withholding recognition of anyone, including both committee members and invitees. In so doing, he is careful to defend himself against any imputation that he has arbitrarily or capriciously prevented reasonably full expression of a viewpoint. One way is to set a time limit on further debate.

Talking it out. "Stay a little, that we may make an end the sooner," goes the aphorism. "Things have initial and thought-out aspects, which differ. If they be not tossed upon the avenue of discussion, they will be tossed upon the waves of fortune and be full of inconstancy, doing and undoing." These sayings have a message for committees having a history of motions passed and rescinded.

After full debate, bring things to a head if you can. "Business handled without conclusion goes backward and forward in an unsteady manner."

Confining debate to the motion. "Repetitions commonly lose time, but for the chair to repeat often the status of the question is to gain time by chasing away non-pertinent speeches."

In the first stage of consideration of an unfamiliar subject, the chair may elect to permit ad lib discussion; but after a reasonable interval he should

call for a seconded motion, and thereafter confine debate to the motion and its amendments. "Keeping close to the subject, and not taking on too much at once, hastens conclusions."

Dividing a problem into parts. In dealing with a complex and controversial subject which may have bogged down in debate, the chair (if he be a seer) will suggest that the motion be withdrawn by agreement, to be replaced with three or four motions, which he will entertain, beginning with one on which he senses agreement will quickly be found, afterwards proceeding to motions in the several areas of disagreement. This is "dividing a problem into parts... Above all things, singling out the parts, putting them in order, and distributing them, is the life of dispatch."

Good timing. "To choose time is to save time. An unseasonable motion is but beating the air."

Only a seasoned chairman is likely to translate this saying into the language of early morning freshness, mid-morning intransigence, before-lunch hunger, postprandial drowsiness, and pre-adjournment fatigue. On more than one occasion, though, a much-amended motion, stuck on dead center at 11 a. m. and by agreement set aside, has encountered no trouble at 3 p. m., especially if a noon caucus or lunch-hour redrafting committee has been put on the job.

Nailing down a passing idea. Submerged in clutter irrelevant to a motion, the alert chairman will seize upon a potentially good idea no matter when or by whom it was introduced. While dismissing it as irrelevant, he will be careful to schedule it for subsequent consideration under New Business.

MEMBERS' ACTIONS AND ATTITUDES

Participation by neophytes. Like a Senator attending his first session, a new committee member listens more than he talks at his first committee meeting. (Might it ever be thus!)

However, it is proper for him to speak on an item or two with which he is particularly concerned or well qualified, so that his chairman may be reassured that he hasn't come up with a dead fish on his hook.

Having thus found himself, the new member will be more at home with the committee's objectives at ensuing meetings.

Degrees of participation by members. It is inevitable, and not necessarily bad, that some members participate in discussion of more topics, and in greater

detail, than others. Parkinson* satirically says of Committees-of-Nine, for example, that "policy would be made by three (the folly of including more than three able and voluble men on one committee being well established), information would be supplied by two, and warning by one. With a neuter chairman, that accounts for seven. We know little as yet about the two silent members but we have good reason to believe that the committee might be unworkable without them."

Common sense in debate. In discussion, get to the point. "To use too many circumstances before one comes to the point is wearisome; to use none at all is blunt."

"References of a speaker to himself are wastes of time; though intended to proceed from modesty, they are only self-serving."

"Eliminate persiflage except to make an idea penetrate."

Verbosity. "Long speeches are useless."

The too-wordy participant unnecessarily harms himself along with his cause. "He that is too much in the discussion, so that he give another an occasion of satiety, maketh himself cheap." "If there be any who would take up all the time, let the chair find means to take them off."

The member as a good listener. It makes good sense for any member, new or old, although vigorously championing his point of view, not to freeze his position until he has heard the views of others. Goodwill consists in finding an accommodation on controversial matters. Furthermore, no one wishes to paint himself into a corner and publicly walk out over wet paint.

Motions offered in writing, with copies made available, have much to commend them. In the compilation of a written motion the mover has pinpointed the action he desires to meet his need. His seconder knows exactly what he is backing, and even may have had a hand in drafting it. A written motion makes it easier for a chairman to keep debate on the track. Those who offer amendments are compelled to be specific.

A motion in writing is a fitting accompaniment to a resolution which has been introduced.

* "Parkinson's Law," C. Northcote Parkinson. Houghton-Mifflin Co., Boston, 1957.

"Reduction to writing facilitates dispatch. Though the motion be rejected, yet the negative decides the future direction better than an oral motion about which there may be some question in the minds of those who vote."

Seconding another's motion. "It is a good precept, in seconding another, to add somewhat of one's own. If you grant his opinion, let it be with some distinction; if you allow his counsel, let it be with alleging farther reason."

Receptivity to innovation. It is of utmost importance that IEEE remain tuned to an ever-changing technical environment. Inventiveness is so rare that it may suffer if put to majority vote of those satisfied with the commonplace.

"New things piece together not so well: though they help by their utility, they trouble by their inconformity. Yet the unjustifiable retention of an old custom is as turbulent a thing as innovation. They who reverence too much old times are but a scorn to the new."

"He that will not apply new remedies must expect new evils, for time innovateth greatly but quietly and by degrees scarce perceived."

Single-purpose voting. Members of an IEEE unit discuss and vote for the good of the unit, in accordance with best individual judgment, after weighing all sides of a question. The Institute as a whole prospers when the purpose of each unit is to serve well the interests of its constituents.

Dual responsibility. It sometimes occurs that a chairman of a unit sits as a member of the unit's parent committee, and must act there as an advocate of some resolution or viewpoint adopted by vote of his unit. What are his obligations, during the deliberations of the parent body?

He has dual responsibilities in such a situation: (1) faithfully and with due emphasis to present to the parent the formal actions passed by the unit he heads, together with reasons and background; (2) within the parent committee to aid in reconciling and resolving divergent views. He will therefore be careful to preserve for himself freedom of independent judgment, as he sits in the parent body, to evaluate its proceedings and participate in its votes. His responsibility to the superior committee is to represent the entire spectrum of its scope and to work for the good of that committee (hence of the Institute as a whole). Accordingly he must be prepared to be influenced by, as well as to influence, the parent committee's deliberations. His unit should understand his dual position and be sympathetic with it, before and after he reports back on any action taken.

Each representative of the Institute to an intersociety or other outside organization, duly nominated by a unit and appointed with the recommendation

of the Intersociety Relations Committee, also has a dual responsibility, including one to IEEE, as he sits in the outside body. This special situation is best dealt with here by reference to Statement of Policy #9, q. v. (In Statements of Policy, blue Supplement to E. E. 12, August '67.)

Fiscal autonomy. Power to authorize expenditures varies widely among committees. Sections enjoy geographical fiscal autonomy through authorization to raise money by specified means and through IEEE's system of dues and meetings rebates.

As to Groups, it has been authoritatively stated that "the IEEE Board is devoted to the propositions that the Groups have proprietary rights as defined in the bylaws, and that they operate autonomously, subject only to reasonable restrictions where the larger interests of the Institute must be observed."*

Conference committees may authorize expenditures within the limits of budgets approved by the General Manager. (See Statement of Policy #2, loc. cit.)

Ordinarily, standing committees are not authorized to receive or disburse funds except by specific advance authorization of their respective senior bodies (Board of Directors, Executive Committee, Technical Activities Board, etc.)

FINAL ACTIONS

New Business. In addition to scheduled New Business, it is not unusual, during the course of a meeting, for a new idea to develop, or the timeliness of a previously-shelved idea to become apparent. Under New Business, decisions may be reached as to what to do and how to refer such subjects for study and recommendation.

"Meetings at this day oft run too swift to be accommodated to the order or act of counseling. It were better that, in causes of weight, the matter were introduced at one meeting and not debated until the next."

Next Meeting. The committee acts to confirm date, time, and place of the next meeting. This is often the last item in the minutes.

* See Linder, February 23, 1965, quoted in Technical Activities Manual, Introduction. The "larger interests of the Institute" are protected in part by the requirement that Group budgets secure Executive Committee approval.

Unfinished Business. Some committees are under instruction to recess as necessary but not to adjourn until the agenda have been completed.

Other committees adjourn with unfinished business, sometimes for lack of a quorum at the close, sometimes because of a previously agreed-upon adjournment hour.

While a quorum is still present, action may be taken on selected remaining items, to refer to subcommittees for study and report; or authority may be delegated to the chairman, another member, or a subcommittee to act at its discretion and afterwards to report. Certain items may be tabled for next meeting.

A rule may also be adopted that, in the absence of a quorum (when no motion except to adjourn may be passed), the chair may elect to have discussion proceed without finalization, not for the minutes but for the purpose of better preparing items for already-voted reference to subcommittees, or to members for mail ballot.

Mail ballots. These have the disadvantage of depending for action solely upon supporting papers instead of debate. But if the chairman decides that a pending matter urgently requires a vote before the ensuing committee meeting is convened, he may resort to a mailed ballot, drawn up by the secretary and returnable to him by a fixed date, on which a voting member may vote Yes or No to a proposition framed by the chairman. A majority is required for the proposal to pass; the chairman may vote if to break or make a tie. The result is recorded by the secretary in the first minutes issued after the result is known.

Telephone ballots. These are resorted to by a smaller administrative committee when a pending matter does not warrant a special meeting. The chairman may direct the secretary to resort to telephone balloting of voting members, a majority of whom must vote affirmatively if a proposal, framed by the chairman, is to pass. The chairman chooses, of all voting members, 50% by lot to be polled by telephone. If, in his 50% canvass, the secretary encounters two or more negative votes, the entire voting membership must be polled if they can be reached. Where applicable the rules pertaining to mail ballots govern telephone ballots.

MINUTES

Form of minutes. The secretary keeps and distributes copies of the minutes of the meeting. With the chairman's concurrence he determines the form of minutes. Usually they report only motions passed and lost, and comparable broad results of

discussion, including consensuses reached, omitting particulars. Whether members' names are to be cited as makers and seconders of motions is a matter for decision.

Exceptional form has been adopted in reporting forum-type, committee-of-the-whole, meetings where, in the absence of votes, opinions worth recording are aired, suggestions are made worth follow-through, and in some instances a consensus or the result of a straw-vote can be reported.

Voting record. Divided votes are recorded in the minutes. Unanimous vote is to be assumed if a divided vote is not shown. If a voting member so requests, his vote on a measure is recorded in the minutes.

Sequence of events. The agenda order may, if desired, be adopted also as the consecutive order of the minutes, with identical numbering system. If this is done, there should be included in some fashion a record of the order in which the items were taken up and disposed of. One method is to record and show the time (hour-and-minute) of conclusion of each item. If this is done, and times are also recorded of call to order, recesses, and adjournment, the sequences of the meeting may be reconstructed by anyone interested.

The minutes list persons present and members absent. Times (or agenda numbers) of late arrivals and early departures are shown so that individuals' participation in votes may be traced.

Summaries of actions to be taken. The chairman, upon occasion or as a standing order, directs the secretary to summarize the minutes in tabular form, showing the individuals' responsibility to follow up the action items. Such listings also include "unfinished business" and "items not reached," with an indication of the next steps to be taken and by whom.

Distribution of minutes. Copies are sent to all members of the committee, voting and non-voting. Copies may be furnished other persons who attended, at the initiative of the chairman. The President of IEEE should be sent a marked copy if the minutes contain action on any topic in which it is known he is interested.

Approval and ratification of minutes. Each unit approves (or votes changes in) its own minutes.

In addition, it is sometimes required that the parent of an administrative or operating committee approve or ratify the actions of the latter's minutes. The parent has reserved the right to take one or more of the following steps: (1) to overrule any act or decision of its administrative creature; (2) to suspend, at any meeting of the parent, any power theretofore conferred upon the creature; (3) to direct any action or plan of the creature committee.

who can qualify for the higher Student Member grade) all bona fide students pursuing courses relating in any way to electrical/electronics. This brings the Student Associate grade requirements into conformity with those for Associate grade, and makes it unnecessary longer for ExecCom to approve "institutions other than 'schools of recognized standing.'" (The action also made it unnecessary to change Bylaw 105.11, defining "schools of recognized standing.")

The new criterion for Student Associate Members is simply a specified degree of personal involvement in "an institutional course of study related to IEEE fields of interest."

Thus liberalized, the rules now encourage Sections to check these schools in their areas, determine from the IEEE staff whether students therein qualify under new Bylaw 105.6.b, then actively promote memberships. Upon meeting the further tests of (amended) Bylaw 407.4, Student Associate Branches may be established. (Correspondence, materials, Mrs. Emma White)

Once Student Associate Branches are in operation, Sections should use every opportunity (student nights, etc.) to help them on comparable footing with the Student Branches in "schools of recognized standing."

Note: Student Members may join IEEE under Bylaw 105.6.a, and Student Associate Members under revised Bylaw 105.6.b, even if there is no Branch at their school. (Cf. Section Membership & Transfers Manual)

MARCH 1968 CONVENTION. Undissipated momentum of past practice accounts for a member's present mistake in voluntarily offering a paper for the 1968 Convention.

All International Convention material is now being invited by session organizers (Group or individual). The former Convention-wide "call for papers" has not and will not be made.

The new TAB/ExecCom philosophy for planning Convention technical program appeared in E. E. 10, Apr., p. 5. To get the types of presentation needed, the technical

program committee has adopted an all-request policy: blueprinting their session first, then obtaining material to fit.

It is suggested that specialized papers, characteristic of International Conventions of the past, hereafter be used to enhance the value of specialized meetings and conferences, and/or be published in the Groups' Transactions.

OTHER TOP-SIDE DEVELOPMENTS

BYLAW CHANGES. The IEEE Board of Directors (BoD) August 22 made a number of changes in the Bylaws, noted for comment in E. E. 12, Aug., p. 1 (educational role), p. 4 (General Committees); E. E. 11, June, p. 2 (membership references, Student Associates). These and other changes are either treated separately in this issue of E. E. or are summarized under this heading.

The Bylaws have been reprinted and separately mailed and distributed, incorporating changes of August 22. (Copies, Miss Emily Sirjane)

(Note: When staff members' names end a paragraph in E. E., address them: IEEE, 345 East 47th Street, New York, N. Y. 10017. The phone is Area 212-PL2-6800. Names of staff and assignments in Spectrum monthly, 2nd page after table of contents; sample p. 8, this E. E.)

(106.2) Reduction to 3, from 5, the number of references required by applicants, Member and Senior Member grades. . . (106.2) Requirement that a member of the faculty (in lieu of a Counselor), acting as a reference for students, must be an IEEE member. . . (110.2) In re notices to members in arrears; clarification of arrangements for reinstatement and of interim voting status. . . (303.10) Editorial revision for consistency with 302.14. . . (306.3) Reflecting Publications Board modifications in area of information services and information systems. (E. E. 12, Aug. p. 6). . . (306.5) Changing name of and adding to the Panel of Publication Editors the editors of all technical publications of IEEE or any unit (example, IEEE Electrolatina). . . (307.4.2) TAB's Operating Committee (OpCom) is

henceforth to be responsible for the technical program and Highlight Session of the International Convention. (Cf. E. E. 10, Apr., p. 5, reporting same for 1968 only.) . . . (307.4.5 - formerly (307.6) The New Technical & Scientific Activities Committee to assume active partnership with TAB OpCom in integrating new technology into the TAB Group/General Committee structure. . . (307.7, 307.8) The Research and Safety Committees deleted. (Cf. E. E. 12, Aug., p. 4). . . (308.10) Last paragraph deleted; now redundant.

TECHNICAL ACTIVITIES BOARD (TAB). To increase effectiveness of TAB operations, August BofD made a significant change in Bylaw 304.2 by having TAB report to BofD instead of to ExecCom; and by concomitant changes in 307.1 to 307.4. TAB's recommendations of policies affecting Groups and General Committees hereafter will go to BofD.

TAB itself has consisted of the chairmen of the Groups and General Committees, plus its officers and a number of appointed members-at-large.

TAB officers and members-at-large form TAB's Operating Committee (OpCom). OpCom has had no independent standing in the IEEE Bylaws; it has been an ancillary agent of TAB and has been subject to TAB's ratification of its actions.

Under the Bylaw revisions, OpCom's personnel continues to be derived from TAB's officers and members-at-large; but hereafter the latter will be appointed by successive chairmen in rotation, at least partly from a TAB-generated slate, and subject to approval of BofD.

TAB OpCom assumes a more independent role under revised Bylaws 307.3, 307.4. Briefly, limited to Operational matters OpCom will be considered the executive arm of TAB. Somewhat as IEEE ExecCom members are given duties as Coordinators over various standing committees and boards, so designated OpCom members may be given liaison duties with assigned Groups.

OpCom, in its operating function, will report monthly to ExecCom instead of less frequently to TAB. It will receive special assignments by BofD and ExecCom. It will

interpret policies relevant to the Groups and General Committees and will publish them in the Technical Activities Manual. It is to develop policy recommendations relating to IEEE's total program of technical activity, and is given appraisal and supervisory functions over technical matters.

The Vice President Technical Activities, who is chairman both of TAB and OpCom and sits on BofD and ExecCom, is given wide powers under new Bylaw 307.4.1 to establish organizational means of encouraging cooperative efforts among the Groups, and to facilitate the performance of duties assigned to TAB by BofD and to OpCom by BofD and ExecCom. As technical Coordinator, the Vice President brings before ExecCom matters of concern to the Groups, General Committees, OpCom, and TAB.

MEMBERS' CHOICE OF SECTION. BofD amended Bylaw 402.1 to provide an exception to a member's mailing address's being the sole determinant of his Section affiliation.

In order to provide him notices of Section matters in the locality of his professional contacts (assuming he is receiving mail at home, for example), the revised Bylaw permits him to affiliate with any contiguous Section of his choice by notifying headquarters. Particulars include: which address governs eligibility to serve as Regional Director; which Section received credit for allowances under Bylaw 402.10. Students are not included. A revision of Bylaw 404.3 extends the concession to Subsections.

IEEE PERIODICALS FOR STUDENTS. BofD has provided (new Bylaw 501.5) that Student Members will receive the Student Journal unless they request Spectrum in its place. For \$3 extra a student may receive both. (E. E. 11, June, p. 5) Applies to all Regions. Applies also to college seniors who heretofore automatically received Spectrum during last 6 months prior to graduation; they must request Spectrum if they want it, beginning with September 1967 issue.

LONG-RANGE PLANNING COMMITTEE. August BofD approved establishment of this

SYNOPSIS OF THE REPORT OF THE AD HOC
COMMITTEE ON IEEE EDUCATIONAL ACTIVITIES

By: J. M. Kinn

In recognition of the growing importance of a varied number of educational activities and the need for emphasis in areas such as continuing education, the IEEE Executive Committee established an ad hoc committee on IEEE Educational Activities under the chairmanship of Dr. B. M. Oliver. The specific charge to the committee was: "To define, in the light of the IEEE Board of Directors' action funding a program of continuing education, the types of educational activity in which the IEEE, as a society, should engage, and to recommend to the Executive Committee the appropriate organizational structure bylaw changes and policy statements needed to implement those activities".

During the course of its study, the committee reviewed all facets of current IEEE activities, possible future activities in which the Institute might become involved, and the possible media available for accomplishing those activities. It identified a number of areas where IEEE could better serve its members, and promote new membership, by strengthening existing activities and initiating new ones. These fall into the broad categories:

1. Continuing education for IEEE members.
2. Assistance to educational institutions.
3. Strengthening the support of student branches.
4. Career guidance for high school students.

Continuing Education for IEEE Members

If, on the one hand, one defines continuing education as "any process by which a person, having been brought abreast of current knowledge in his chosen field through traditional college and graduate courses, continues to keep his knowledge up to date as new developments in his field occur," then the committee felt that this need is being adequately satisfied by the existing publications (SPECTRUM, PROCEEDINGS, TRANSACTIONS) and by our conferences.

On the other hand, if one defines continuing education as simply "the acquisition of any knowledge, on a deliberate and sustained basis, in any field whatever, subsequent to one's formal training," then the committee felt that the archival reporting function of our journals and conferences is not sufficient to meet these continuing-education needs of a large fraction, if not a majority, of our membership.

In this broader sense, IEEE has done very little in continuing education. The committee does not suggest that we should cultivate fields far removed from those of our profession; but it does suggest that right within our profession the tutorial services of IEEE are inadequate.

Three categories of membership may be cited as illustrative:

1. Many of our members are managers, administrators, or sales engineers. Their duties do not permit them to keep fully abreast of the technical aspects of their fields and yet they need to know the basic facts and potentialities of technological developments in order to make correct decisions and in order to be effective at their jobs.
2. Our members change jobs frequently, and more frequently are given new assignments -- new responsibilities -- that require them to "catch up" in a field that was formerly of little or no interest to them. The engineer, or the manager whose business is impacted by technological advances must absorb the new technology or go under.
3. Many of our members have either never had formal college training or have discovered that training to be inadequate for their needs. These people need training in what are now considered basic subject areas in order to realize their latent creativity. The number of inventive technicians who make significant contributions in spite of an educational handicap is legion. We believe IEEE can help, and has an obligation to help, these members as well as the competent researcher.

The committee pointed out that: "the IEEE is unique in respect to the resources on which it can draw in organizing such member-oriented programs of continuing education. It has access to the services of the most competent engineers in our field, regardless of the affiliations or loyalties of the individuals involved. Other organizations are generally hampered in this respect due to problems arising from competition between industrial laboratories, or lack of sufficient prestige to secure the desired cooperation in presenting the latest developments.

Among the forms of presentations of additional educational material, the committee had the following to suggest:

1. Published monographs and course material in new technological areas

To some extent these could be compendia of selected important papers republished in logical order, but in general they would require the preparation of additional tutorial chapters, problems sets, etc. For this service to be effective, IEEE must monitor the literature for emerging developments of great significance (e. g. the transistor, the laser, the integrated circuit) and anticipate the need for introductory courses and monographs. Such first volumes could be followed, when justified, with second and third volumes on the same subject.

2. Lecture Series

IEEE should prepare and distribute both live, videotaped, and slide-tape lecture series in new technological areas. These should be designed for both Section and Student Branch uses, and for use both in conjunction with and independently of the written material recommended in 1., above.

3. Information on Courses and Materials

IEEE should through an appropriate editorial review board, disseminate information to its membership on currently available courses and texts in such basic subject areas as calculus, functions of a complex variable, transform theory, circuit analysis and synthesis, probability and statistics, and computer programming, as well as in new areas of interest such as coherent optics, integrated circuit technology, etc.

Reviews should, in good editorial fashion, indicate the level at which the material is treated, the pre-requisites, and any special features of the courses and material.

4. Workshops

It would be desirable to couple all of the above suggestions to an active workshop program. Lecture series organized at headquarters could be followed by or interspersed with workshop sessions covering the same material. These would involve assignment of problems, solving of these by the participants and question-answer sessions.

The IEEE monographs and the guide to already available materials could form the basis for workshops organized by local sections.

Assistance to Educational Institutions

The committee felt that at present we offer little direct help to faculties in upgrading their curricula, that we could make a greater positive impact on the programs in our colleges and universities, and recommended that:

1. The tutorial materials developed by IEEE for continuing education be made available gratis, or at cost, to educational institutions for use at their discretion.
2. IEEE review, select and publish editorial reviews of selected good educational films prepared by government and industry. This information, and in some cases the films as well, should be distributed for student use. These films often would have continuing education value.
3. IEEE sponsor curriculum workshops on new topics that should be included in electrical engineering curricula, with participation both by educators and by outstanding R&D professionals in industry.

Strengthening the Support of Student Activities

The committee felt that much more could be done toward making students feel they are full members of the institute and to this end recommended that:

1. All student members should be considered members in good standing of the local Section in which their Branch is located. They should receive all Section publications and meeting notices. Appropriate additional rebates to the Sections should be provided to cover the expense.
2. IEEE Student Branch Counsellors should be ex-officio members of the local Section committees. This is already the case in many Sections and leads to greater student awareness of Section activities.
3. Student Branches should come under the purview of the EAB, and its Chairman should be the Coordinator of Student Branch activities on the Executive Committee. He in turn should designate a member of the EAB as the Chairman of a permanent Student Branch Committee of the EAB.
4. The Student Branch Chairman should make all pertinent output of the EAB available to Student Branches and should develop further mechanisms for support of Student Branch activity and greater student participation in Institute events.

Career Guidance for High School Students

There seems to be a consensus that the basic choice of a major career field tends to be made at the secondary school level; hence the committee recommended that:

1. IEEE encourage all Sections to assist the secondary schools at a local level by providing speakers, arranging for field trips, securing gifts of equipment from industry, etc. At present it appears that only about one fifth of

our Sections engage in any sort of activity at the high school level.

2. IEEE prepare and circulate slide-tape presentations that acquaint students with our field. The cost of duplicating such material is not great, and such presentations can be effective if well done. ASME has done this and some Groups, such as the Communication Technology Group, are planning such a package.

ORGANIZATIONAL STRUCTURE

If IEEE is to conduct significant educational activities as outlined above, it was clear to the committee that there must be both staff support and continuing committee direction at Institute level. The committee accordingly recommended that:

1. IEEE establish an Educational Activities Board having a status comparable to the Publications Board or to TAB, the Chairman of the EAB to be a member of the Executive Committee. (As noted above, the Board of Directors adopted this recommendation).
2. The EAB be responsible for planning specific activities in continuing education, for monitoring ECPD accreditation activities and developing guidelines for our representatives on the ECPD accreditation committees, for developing IEEE relations with educational institutions, for making policy recommendations to the Board of Directors.
3. Appropriate staff support and budget be provided for the EAB.
4. That the Chairman of the Group on Education be a member ex-officio of the EAB.
5. That the Chairman of EAB be also the Coordinator for Student Branches, and be responsible for the support of Student Branches as outlined above.

SHORT RANGE PROGRAMS

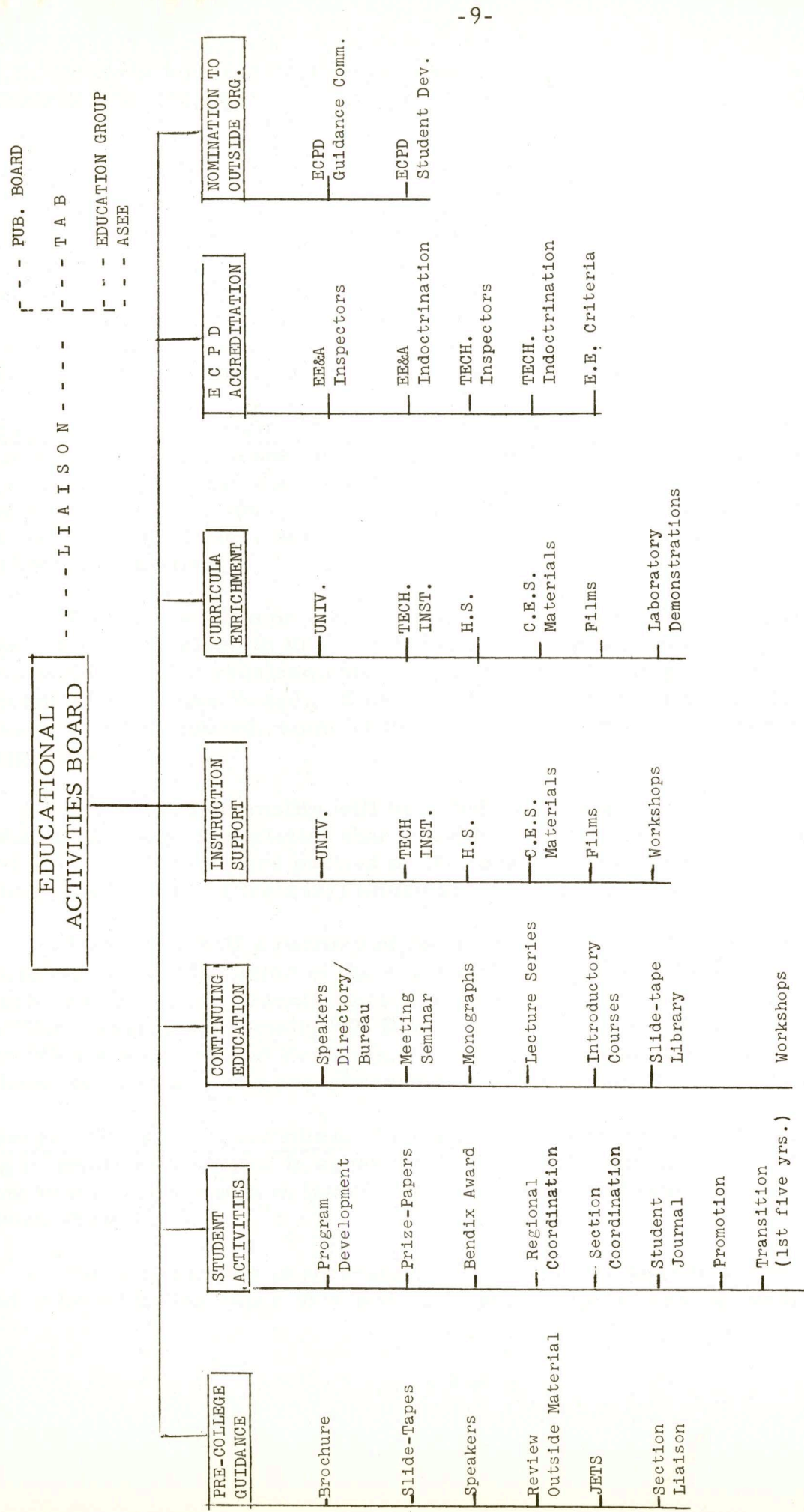
During the intervening time required to establish the EAB and permit it to get on line, the committee asked and received authorization to proceed as follows:

1. Support the initial cost of, and prepare, slide-tape presentations of the tutorial series on Integrated Circuits and Computer Aided Design new being developed for the March 1968 Convention.
2. Prepare a review guide to existing educational films.
3. Evaluate the Micro-Electronics material from WESCON and make available slides and tapes if suitable.
4. Take steps to have an existing series on Semi-Conductor lasers and electro-luminescence re-recorded for distribution. (Present tapes are worn)
5. Charge TAB with developing suggestions for monographs in the fields of each Group.
6. Solicit speakers for a series on coherent optics.
7. Make plans to develop the series under (1) into a series of Workshops.
8. Invite the Sections to submit to the ad hoc committee on Educational Activities, and later to the EAB, information on courses that have already been developed which have proved successful.

HOW IT MIGHT LOOK

While it is still too early to definitely outline all of the functions and interrelationships which will evolve as a result of the creation of the EAB, the chart with which this presentation ends shows the many functions for which it will be responsible.

(See Chart)



III-A --- COMMITTEE MEETINGS

The editor of "Electrical Engineering," in his informal and unofficial compilation of four Green Papers, is examining The Why and How of Successful Committees under the headings: I - Committees' Purposes (June issue); II - Committee Personnel (August); III - Committee Meetings (in two issues). Instalment III-A, this issue (October) deals with general matters of conduct; III-B (December) more specifically with Rules of Order.

Applying material herein. IEEE organization entities (units) differ widely in size and function. No one set of rules would apply equally well to the conduct of business by a committee-of-three, say, and a large board; by a Group, on one hand, and a Section on the other; nor by disparate committees dealing variously with policies, administrative matters, persons' qualifications, or technologic details.

Each committee or unit ought, therefore, to adopt its own rules of conduct. Those given in this Green Paper and the next one are based upon the relatively complex requirements and experience of a large committee (a recent Technical Activities Board). Smaller units may trim them sharply to their lesser needs if, indeed, some of the procedures and reasons therefor prove suggestive.

A certain informality will be noted in rules adapted to the needs of units in engineering societies that would be out of place in rules adopted by bodies in which there are parties or factions (like legislatures) or by a body (such as a Board of Directors) whose actions are legally binding.

More than half a century of committee work in IEEE and its antecedent societies lies behind some of the rules included. Some of the principles are much, much older. Francis Bacon, around 1597 A. D. included many of them in "The Essays," especially "Of Dispatch," "Of Counsel," "Of Innovations," and "Of Ceremonies and Respects." Quoted sayings in this instalment, not otherwise credited, are paraphrased adaptations from Bacon's writings.

General duties of a committee. In a technical society a portfolio of interlocking committees operates in several echelons, each unit having a stated relationship to the others and a well-defined scope or area of interest as covered in Green Paper I.

Each committee is a creature of the superior body to which it reports and is bound by the superior's scope, rules, and practices, as well as by its

own bylaws and procedural rules. In turn, it is usually free to create standing or ad hoc committees of its own to help it get its work done.

A unit's continuing posture is therefore dual: sensitive to its obligations to its parent; demanding of its sub-entities, in its supervision of them.

Scheduling meetings. "Committee achievement is not to be measured by the number of its meetings." Hold only so many as are needed to advance and complete all unit objectives.

At the first meeting of a unit after a change of officers and members, a schedule should be adopted of dates, places, and times of meeting throughout the year, so that all are put on advance notice to block their calendars.

The chairman should be empowered to revise date, place, or time of any meeting or to cancel it, in either event upon x days' notice to all members.

An ad hoc committee should estimate its meeting requirements for concluding its work and similarly schedule them.

Any n voting members, upon m days' notice setting forth the reasons, should be able to request a special meeting of the unit at its usual meeting place. If so requested, it may be provided that the chairman must call the meeting and that the secretary must transmit the agenda and supporting documents.

INVITATIONS

Notices to unit members. Official notices of each unit meeting (place, date, time) are sent with the agenda to all members (voting and non-voting, where there is a distinction). Chairman and secretary collaborate in the wording of the notices. It is desirable that the call of the meeting state not only the time of convening but also the projected duration of recesses and hour of adjournment, so that members may fit travel reservations, business appointments, and long distance telephone calls to them.

Any member not able to attend a meeting in person may request the chairman to recognize an alternate to attend and participate. When a sub-unit is involved and there is a vice-chairman able to attend, he shall be so invited. Whether such stand-in members are permitted to vote should be spelled out in the rules adopted. (In TAB, they are.)

Any member not able to attend a meeting in person may ask the chairman to have his communicated views read (if of reasonable length), but not to record any vote on the strength of the occurrence.

Under Article XIII, Section 1, of the IEEE Constitution, the President of IEEE is, ex-officio, a member of every committee. As such he is entitled to an invitation to every committee meeting, but to have so many tendered would lead to a surfeit. It is appropriate to invite him if it is known he will be in the vicinity. Items on the agenda of known interest to him may be marked and transmitted.

Invitations to others. Depending upon circumstances and agenda, an invitation, if appropriate, may be extended to other IEEE officers, a Regional or other Director, an Executive Committee Coordinator, a Section or Group chairman, the chairman of the unit's superior committee, or the designee of any of them. No voting rights attach.

Invitations, with or without copies of the agenda, may be sent to other persons designated by the chairman, to attend without vote. By arrangement, these may include members of the headquarters staff mutually agreed upon by chairman and General Manager.

Any unit member, by advance arrangement with the chairman, may invite a non-member of the unit to attend all or part of a meeting, without vote, in order to facilitate consideration of agenda items. Included might be a person or persons to give support to a petition or resolution.

The chairman decides whether such advocates may be admitted, how many, and how long they may stay. "Let petitioners," cautions Bacon, "be heard by a subcommittee first, then, if the occasion serve, before the committee. Let them not come in numerical or undisciplined force, for that is to clamor the committee, not to inform it."

AGENDA

Compilation. Agenda for a meeting are prepared in advance by the chairman and secretary in collaboration, to insure that no item shall be forgotten and that deliberations shall come up in a logical order.

Agenda are mailed to all voting members (at least) y weeks before the meeting.

Cumulatively, agenda reflect pressing phases of the unit's objectives and planning. (See chairman's introspective checklist, Green Paper, E. E. 11, June.)

Items included. If a member has indicated by corresponding with or talking to the chairman that a certain matter should be brought up at a meeting, the

chairman will include the item in the agenda for consideration on its merits. This is consonant with a general invitation to unit members to furnish agenda items.

Included also are all sub-unit resolutions, petitions, reports; and items which have developed since last meeting in correspondence or in course of operations. If received too late for the mailed-out agenda, the items are worked in at the meeting by the chairman as time permits. To support late items, documents may have to be distributed at the meeting; this precludes desirable advance study and consultation.

Preparatory work. Supporting papers sent out with the agenda are, indeed, a significant part of the record of the meeting not customarily repeated as attachments to the minutes.

Supporting papers are frequently the work of subcommittees or headquarters personnel who have wrestled with details and wrapped the subject up in a well-ordered study. Each member is supposed to have read and digested this material before he comes to the meeting, as a valuable time-saver.

If a chairman wastes time in meeting by permitting this compilation to be read, his members will thereby be encouraged to neglect their home-work. "The three parts of committee work are preparation, debate, and conclusion. If you look for progress, let the middle part, debate, only, be the work of the whole committee; and preparation and conclusion the work of a few."

Order of agenda. The chairman usually tells the secretary the order in which to present the mailed agenda. Items are given consecutive or decimal numbers for convenience in identifying attached papers, correspondence, reports, and exhibits. The chairman may direct a time-dividing of items by categories, such as Action, Discussion, Information.

THE MEETING PROPER

Seating arrangements. The chairman and secretary work out the best arrangement of table and chairs within the limits afforded by hotel, headquarters, convention, institution, or other meeting place.

The chairman selects the position which he will occupy at the table, usually placing the secretary next to him, with ample table space for their papers. The vice-chairman's and stenographer's positions are also designated.

Selection of table positions by members, as they arrive, is ordinarily left to them. If there is a scarcity of places at the table, these should be reserved for voting members, with invitees occupying chairs along the walls.

It will be found that initial seating positions taken by the members will automatically fall into a pattern maintained in successive meetings.

Seating arrangements have an effect on members' participation; or, conversely, the pecking-order is a self-determinant of seat positions. "A long table, or a square table, or seats about the walls, seem things of form, but are things of substance. At a long table, a few at the upper end, in effect, sway all business. In a square formation there is more use of counselors who sit lower."

A square table, or a round table, or a hollow square of tables, is not always available. Some chairmen seek the partial advantages of these types, when only a long table may be used, by presiding at the middle of one long side, instead of at one end.

The T-formation adopted sometimes at IEEE headquarters for reasons of space, with the chairman flanked by others at the top of the T, has been criticized by occupants of seats at the long table for total eclipse of the flanking members. The latter could rise when speaking so that their thoughts might be weighed equally with others'.

Identification of participants. When comparative strangers meet in committee (even a small one), it is helpful to supplement the usual stand-up-sit-down oral self-introductions (most of which will be modestly mumbled and incomplete, and presented too fast for members to record) with some kind of blackboard notation or mimeographed hand-out, for study and reference throughout the meeting and subsequent ones. Simple place-cards may be used. When a person is speaking, others have a natural curiosity as to who he is, where he comes from, what he does (or did) for a living, and where he fits otherwise in the IEEE family. The sooner names and faces are associated, the quicker an esprit de corps can be built up to tackle problems together. The chairman, who is most likely to know the maximum number personally and has his secretary to consult, can help the members by referring to speakers both by family name and nickname in the early stages, as he learns them himself.

The Chair. The chairman of the committee presides at meetings. When he is absent for the day, or out of the meeting room temporarily, his place is taken by the ranking vice-chairman or other person, usually as provided in bylaws or operating manual. In the absence of those so designated, the chairman may select anyone present to preside.

However chosen, the chairman's alternate, having been "passed the gavel," assumes all the chairman's powers for the conduct of the meeting.

Whether the actual chairman of the unit or his alternate, the presiding officer is called "the chair." He is addressed as "Mr. Chairman."

The Gavel. More symbolic in IEEE than actual, the gavel is the badge of authority of the chair. When used, all attendees become silent at once so that the chair may make a ruling or give direction to the business.

In the absence of an actual gavel, the chair improvises one, say by striking a water tumbler; its first use is to call the meeting to order. All members should be attentive to its employment from time to time.

Order of business. The chair announces the order of business and any additions to or departures from the mailed agenda known to him at the outset.

Cogent reasons for departing from announced order are: immediate non-availability of members and others expected to be present; known early departures of key members on topics well down on the agenda; presence of non-members invited to be present during particular items.

If a member intends to bring up at the meeting a matter not on the mailed agenda, it is preferable that he should have mentioned it to the chair before the meeting began, for inclusion in the opening announcement. Failing that, he may say, after the chair's announcement and upon being recognized: "With the chair's permission and unless the matter has come up previously, I should like to have time reserved under New Business for consideration of (identify) ." The secretary takes note and reminds the chair privately at the proper point in the agenda.

Approval of minutes of the previous meeting is one of the first items of agenda, to clear the way for further business.

The secretary should be first succinctly to correct errors which have been called to his attention. It is a time-saver if a member, (who upon reading the minutes has detected an error, or has found himself misquoted, or his vote not correctly recorded, or himself not properly marked present or absent while certain items were being considered,) shall have notified the secretary by mail, so that these changes may be included with others.

The time of approving the minutes is not the proper one to seek to modify actions heretofore actually taken and factually recorded.

THE CHAIR AS MODERATOR

Recognition of rights and interests. The chair jealously safeguards the right of voting members to be heard on any pertinent subject at an appropriate time. He also extends due courtesy to invited participants in the meeting.

The desideratum is that each member shall be heard on every item of the agenda to which the member feels he can contribute constructively.

It has even been found feasible in some committees to provide that all who attend some unit meetings, whether members of it or not, may participate in the deliberations at such times as they receive recognition of the chair. However, this is by far not a general practice.

The chairman as a model listener. While in some instances the chairman exerts leadership (especially in the preparation of agenda material) to sell an idea to his committeemen, in other matters his position is that of eagerly seeking counsel on which way to go. In the latter cases, "let him beware lest he reveal his own inclination too much in that which he propoundeth, for else counselors will but take the wind of him instead of giving advice freely."

The chair will "listen carefully to one who presents a new subject, not interrupting to take a short cut; because a person so interrupted will in the end take longer than if he had been permitted to follow his own course." Through lapses of this kind, says Bacon, "the moderator becomes more troublesome than the speaker."

Cautious exercise of power. In the dispatch of the business, a point is sometimes reached where the chair must exercise his prerogative of withholding recognition of anyone, including both committee members and invitees. In so doing, he is careful to defend himself against any imputation that he has arbitrarily or capriciously prevented reasonably full expression of a viewpoint. One way is to set a time limit on further debate.

Talking it out. "Stay a little, that we may make an end the sooner," goes the aphorism. "Things have initial and thought-out aspects, which differ. If they be not tossed upon the avenue of discussion, they will be tossed upon the waves of fortune and be full of inconstancy, doing and undoing." These sayings have a message for committees having a history of motions passed and rescinded.

After full debate, bring things to a head if you can. "Business handled without conclusion goes backward and forward in an unsteady manner."

Confining debate to the motion. "Repetitions commonly lose time, but for the chair to repeat often the status of the question is to gain time by chasing away non-pertinent speeches."

In the first stage of consideration of an unfamiliar subject, the chair may elect to permit ad lib discussion; but after a reasonable interval he should

call for a seconded motion, and thereafter confine debate to the motion and its amendments. "Keeping close to the subject, and not taking on too much at once, hastens conclusions."

Dividing a problem into parts. In dealing with a complex and controversial subject which may have bogged down in debate, the chair (if he be a seer) will suggest that the motion be withdrawn by agreement, to be replaced with three or four motions, which he will entertain, beginning with one on which he senses agreement will quickly be found, afterwards proceeding to motions in the several areas of disagreement. This is "dividing a problem into parts... Above all things, singling out the parts, putting them in order, and distributing them, is the life of dispatch."

Good timing. "To choose time is to save time. An unseasonable motion is but beating the air."

Only a seasoned chairman is likely to translate this saying into the language of early morning freshness, mid-morning intransigence, before-lunch hunger, postprandial drowsiness, and pre-adjournment fatigue. On more than one occasion, though, a much-amended motion, stuck on dead center at 11 a. m. and by agreement set aside, has encountered no trouble at 3 p. m., especially if a noon caucus or lunch-hour redrafting committee has been put on the job.

Nailing down a passing idea. Submerged in clutter irrelevant to a motion, the alert chairman will seize upon a potentially good idea no matter when or by whom it was introduced. While dismissing it as irrelevant, he will be careful to schedule it for subsequent consideration under New Business.

MEMBERS' ACTIONS AND ATTITUDES

Participation by neophytes. Like a Senator attending his first session, a new committee member listens more than he talks at his first committee meeting. (Might it ever be thus!)

However, it is proper for him to speak on an item or two with which he is particularly concerned or well qualified, so that his chairman may be reassured that he hasn't come up with a dead fish on his hook.

Having thus found himself, the new member will be more at home with the committee's objectives at ensuing meetings.

Degrees of participation by members. It is inevitable, and not necessarily bad, that some members participate in discussion of more topics, and in greater

detail, than others. Parkinson* satirically says of Committees-of-Nine, for example, that "policy would be made by three (the folly of including more than three able and voluble men on one committee being well established), information would be supplied by two, and warning by one. With a neuter chairman, that accounts for seven. We know little as yet about the two silent members but we have good reason to believe that the committee might be unworkable without them."

Common sense in debate. In discussion, get to the point. "To use too many circumstances before one comes to the point is wearisome; to use none at all is blunt."

"References of a speaker to himself are wastes of time; though intended to proceed from modesty, they are only self-serving."

"Eliminate persiflage except to make an idea penetrate."

Verbosity. "Long speeches are useless."

The too-wordy participant unnecessarily harms himself along with his cause. "He that is too much in the discussion, so that he give another an occasion of satiety, maketh himself cheap." "If there be any who would take up all the time, let the chair find means to take them off."

The member as a good listener. It makes good sense for any member, new or old, although vigorously championing his point of view, not to freeze his position until he has heard the views of others. Goodwill consists in finding an accommodation on controversial matters. Furthermore, no one wishes to paint himself into a corner and publicly walk out over wet paint.

Motions offered in writing, with copies made available, have much to commend them. In the compilation of a written motion the mover has pinpointed the action he desires to meet his need. His seconder knows exactly what he is backing, and even may have had a hand in drafting it. A written motion makes it easier for a chairman to keep debate on the track. Those who offer amendments are compelled to be specific.

A motion in writing is a fitting accompaniment to a resolution which has been introduced.

* "Parkinson's Law," C. Northcote Parkinson. Houghton-Mifflin Co., Boston, 1957.

"Reduction to writing facilitates dispatch. Though the motion be rejected, yet the negative decides the future direction better than an oral motion about which there may be some question in the minds of those who vote."

Seconding another's motion. "It is a good precept, in seconding another, to add somewhat of one's own. If you grant his opinion, let it be with some distinction; if you allow his counsel, let it be with alleging farther reason."

Receptivity to innovation. It is of utmost importance that IEEE remain tuned to an ever-changing technical environment. Inventiveness is so rare that it may suffer if put to majority vote of those satisfied with the commonplace.

"New things piece together not so well: though they help by their utility, they trouble by their inconformity. Yet the unjustifiable retention of an old custom is as turbulent a thing as innovation. They who reverence too much old times are but a scorn to the new."

"He that will not apply new remedies must expect new evils, for time innovateth greatly but quietly and by degrees scarce perceived."

Single-purpose voting. Members of an IEEE unit discuss and vote for the good of the unit, in accordance with best individual judgment, after weighing all sides of a question. The Institute as a whole prospers when the purpose of each unit is to serve well the interests of its constituents.

Dual responsibility. It sometimes occurs that a chairman of a unit sits as a member of the unit's parent committee, and must act there as an advocate of some resolution or viewpoint adopted by vote of his unit. What are his obligations, during the deliberations of the parent body?

He has dual responsibilities in such a situation: (1) faithfully and with due emphasis to present to the parent the formal actions passed by the unit he heads, together with reasons and background; (2) within the parent committee to aid in reconciling and resolving divergent views. He will therefore be careful to preserve for himself freedom of independent judgment, as he sits in the parent body, to evaluate its proceedings and participate in its votes. His responsibility to the superior committee is to represent the entire spectrum of its scope and to work for the good of that committee (hence of the Institute as a whole). Accordingly he must be prepared to be influenced by, as well as to influence, the parent committee's deliberations. His unit should understand his dual position and be sympathetic with it, before and after he reports back on any action taken.

Each representative of the Institute to an intersociety or other outside organization, duly nominated by a unit and appointed with the recommendation

of the Intersociety Relations Committee, also has a dual responsibility, including one to IEEE, as he sits in the outside body. This special situation is best dealt with here by reference to Statement of Policy #9, q. v. (In Statements of Policy, blue Supplement to E. E. 12, August '67.)

Fiscal autonomy. Power to authorize expenditures varies widely among committees. Sections enjoy geographical fiscal autonomy through authorization to raise money by specified means and through IEEE's system of dues and meetings rebates.

As to Groups, it has been authoritatively stated that "the IEEE Board is devoted to the propositions that the Groups have proprietary rights as defined in the bylaws, and that they operate autonomously, subject only to reasonable restrictions where the larger interests of the Institute must be observed."*

Conference committees may authorize expenditures within the limits of budgets approved by the General Manager. (See Statement of Policy #2, loc. cit.)

Ordinarily, standing committees are not authorized to receive or disburse funds except by specific advance authorization of their respective senior bodies (Board of Directors, Executive Committee, Technical Activities Board, etc.)

FINAL ACTIONS

New Business. In addition to scheduled New Business, it is not unusual, during the course of a meeting, for a new idea to develop, or the timeliness of a previously-shelved idea to become apparent. Under New Business, decisions may be reached as to what to do and how to refer such subjects for study and recommendation.

"Meetings at this day oft run too swift to be accommodated to the order or act of counseling. It were better that, in causes of weight, the matter were introduced at one meeting and not debated until the next."

Next Meeting. The committee acts to confirm date, time, and place of the next meeting. This is often the last item in the minutes.

* See Linder, February 23, 1965, quoted in Technical Activities Manual, Introduction. The "larger interests of the Institute" are protected in part by the requirement that Group budgets secure Executive Committee approval.

Unfinished Business. Some committees are under instruction to recess as necessary but not to adjourn until the agenda have been completed.

Other committees adjourn with unfinished business, sometimes for lack of a quorum at the close, sometimes because of a previously agreed-upon adjournment hour.

While a quorum is still present, action may be taken on selected remaining items, to refer to subcommittees for study and report; or authority may be delegated to the chairman, another member, or a subcommittee to act at its discretion and afterwards to report. Certain items may be tabled for next meeting.

A rule may also be adopted that, in the absence of a quorum (when no motion except to adjourn may be passed), the chair may elect to have discussion proceed without finalization, not for the minutes but for the purpose of better preparing items for already-voted reference to subcommittees, or to members for mail ballot.

Mail ballots. These have the disadvantage of depending for action solely upon supporting papers instead of debate. But if the chairman decides that a pending matter urgently requires a vote before the ensuing committee meeting is convened, he may resort to a mailed ballot, drawn up by the secretary and returnable to him by a fixed date, on which a voting member may vote Yes or No to a proposition framed by the chairman. A majority is required for the proposal to pass; the chairman may vote if to break or make a tie. The result is recorded by the secretary in the first minutes issued after the result is known.

Telephone ballots. These are resorted to by a smaller administrative committee when a pending matter does not warrant a special meeting. The chairman may direct the secretary to resort to telephone balloting of voting members, a majority of whom must vote affirmatively if a proposal, framed by the chairman, is to pass. The chairman chooses, of all voting members, 50% by lot to be polled by telephone. If, in his 50% canvass, the secretary encounters two or more negative votes, the entire voting membership must be polled if they can be reached. Where applicable the rules pertaining to mail ballots govern telephone ballots.

MINUTES

Form of minutes. The secretary keeps and distributes copies of the minutes of the meeting. With the chairman's concurrence he determines the form of minutes. Usually they report only motions passed and lost, and comparable broad results of

discussion, including consensuses reached, omitting particulars. Whether members' names are to be cited as makers and seconders of motions is a matter for decision.

Exceptional form has been adopted in reporting forum-type, committee-of-the-whole, meetings where, in the absence of votes, opinions worth recording are aired, suggestions are made worth follow-through, and in some instances a consensus or the result of a straw-vote can be reported.

Voting record. Divided votes are recorded in the minutes. Unanimous vote is to be assumed if a divided vote is not shown. If a voting member so requests, his vote on a measure is recorded in the minutes.

Sequence of events. The agenda order may, if desired, be adopted also as the consecutive order of the minutes, with identical numbering system. If this is done, there should be included in some fashion a record of the order in which the items were taken up and disposed of. One method is to record and show the time (hour-and-minute) of conclusion of each item. If this is done, and times are also recorded of call to order, recesses, and adjournment, the sequences of the meeting may be reconstructed by anyone interested.

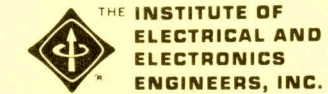
The minutes list persons present and members absent. Times (or agenda numbers) of late arrivals and early departures are shown so that individuals' participation in votes may be traced.

Summaries of actions to be taken. The chairman, upon occasion or as a standing order, directs the secretary to summarize the minutes in tabular form, showing the individuals' responsibility to follow up the action items. Such listings also include "unfinished business" and "items not reached," with an indication of the next steps to be taken and by whom.

Distribution of minutes. Copies are sent to all members of the committee, voting and non-voting. Copies may be furnished other persons who attended, at the initiative of the chairman. The President of IEEE should be sent a marked copy if the minutes contain action on any topic in which it is known he is interested.

Approval and ratification of minutes. Each unit approves (or votes changes in) its own minutes.

In addition, it is sometimes required that the parent of an administrative or operating committee approve or ratify the actions of the latter's minutes. The parent has reserved the right to take one or more of the following steps: (1) to overrule any act or decision of its administrative creature; (2) to suspend, at any meeting of the parent, any power theretofore conferred upon the creature; (3) to direct any action or plan of the creature committee.



E. E. No. 13
October 1967

SPEAKERS DIRECTORY

The papers listed in this Directory have been considered by the Chairman of IEEE Sections as the most outstanding of those presented at the respective Section, Subsection and Group Chapter meetings during the past year. (For further information on individual papers, please contact Section Chairman or Section Program Chairman, as indicated.)

REGION 1

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Long Island	Preston R. Bassett Sperry Gyroscope Co. Great Neck, N. Y.	"Early History of Weapon Systems Experience (1910- 1930)"
	M. J. DiToro Cardion Electronics Woodbury, N. Y. 11797	"Adaptive Communication"
	John W. Wentworth RCA Princeton, N. J. 08540	"Compatible Color TV"
	Program Chairman	Arthur Rossoff General Instrument Co. Hicksville, N. Y.
Mohawk Valley	Dr. Nathan Schwartz Graduate School Syracuse University Syracuse, N. Y. 13210	"Special Problems Associated with Engineering Obsoles- cence and Retraining"
	Donald R. J. White, Pres. White Electromagnetics, Inc. Rockville, Md.	"Electromagnetic Compatability - Its Definition, Problems and Future"
	Dr. Ralph G. Ebeling, Manager General Electric Engrg. Education Schenectady, N. Y.	"One Concept of Modern En- gineering"

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Mohawk Valley (Cont'd.)	C. A. Conover General Electric Co. Electronics Park Syracuse, N. Y.	"Advanced Concepts in Time Sharing (Computer)"
	Program Chairman Dr. Irving J. Gabelman RADC (EMD) Griffiss AFB, N. Y. 13440	
New York	Commissioner Barnes Traffic Commissioner, N. Y. City New York, N. Y.	"Vehicular Traffic Control"
	Harry Jackson ITT Federal Laboratories Nutley, N. J. 07110	"Space Communication in Retrospect and Anticipation"
	Nils Nilsson Stanford Research Institute Stanford University Stanford, Calif. 94305	"Preliminary Design of an Intelligent Automation"
	Program Chairman Vincent McDonough New York Stock Exchange Quotation Division 11 Wall Street New York, N. Y. 10005	
<u>REGION 2</u>		
Akron	J. H. Campbell General Electric Co. Nela Park Cleveland, Ohio	"Characteristics and Eco- nomics of a New 3000 HE Lighting System"
	Joel Bates Westinghouse Electric Corp. Pittsburgh, Pa.	"Transit Expressway - A Solution to the Growing Traffic Congestion in Urban Commu- nities"
	Program Chairman A. H. Monteith Ohio Edison Company 47 N. Main Street Akron, Ohio 44308	
Philadelphia	J. R. Lampman, Consulting Engr. General Electric Co. Valley Forge, Pa. 19481	"Plastics in Spacecraft Design"

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<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Philadelphia (Cont'd.)	W. L. Doelt, Engr. Supervisor Philco-Ford Corp. Lansdale, Pa. 19446	"Tour the Amazing World of Integrated Circuit Man- ufacture"
	Dr. H. L. VanTrees MIT Boston, Mass. 02139	"Analog Modulation: Bounds and System Performance"
	Dr. Gunther Sorger, Dir. of Research Weinschel Engineering Gaithersburg, Md. 20760	"Systems for Swept Frequency High Precision Measurement of Insertion Loss, Input VSWR, and Source VSWR"
	Dr. W. J. Popplebaum, Prof. Elec. Engrg. & Computer Sciences University of Illinois Urbana, Ill. 61801	"Computers in the 1970's - What Is New and What Is to Come?"
	Contact IEEE Philadelphia Section Office Moore School of Electrical Engineering University of Pennsylvania, Rm. 209 Philadelphia, Pa. 19104	
Pittsburgh	Dr. William E. Shoupp Westinghouse Electric Corp. Beulah Road Pittsburgh, Pa. 15235	"The Year 2000"
	Stanton T. Friedman Westinghouse Astronuclear Lab. P. O. Box 10864 Pittsburgh, Pa. 15236	"Flying Saucers - Fact or Fiction"
	G. B. Brandt Westinghouse Electric Corp. Beulah Road Pittsburgh, Pa. 15235	"Holography - Principles and Applications"
	Program Chairman F. A. Furfari Westinghouse Electric Corp. Chatham Center Pittsburgh, Pa. 15215	
<u>REGION 3</u>		
Baton Rouge	Dr. Harold Voss Electrical Engineering Dept. Louisiana State University Baton Rouge, La. 70803	"Bio-Engineering"

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<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Baton Rouge (Cont'd.)	Eustace C. Soares Contact Section Program Ch. below	"Effectively Grounding Dis- tribution Circuits"
	Dr. Stuart P. Jackson Contact Section Program Ch. below	"The Application of Static In- verters in Control and In- strumentation Systems"
	Program Chairman Edward Loggins P. O. Box 2431 Baton Rouge, La. 70821	
East Tennessee	Capt. Louis B. Nelson Office of Naval Research Washington, D. C.	"Recovery of the H Bomb from Spanish Waters"
	Dr. P. R. Bell Oak Ridge National Laboratory Oak Ridge, Tenn. 37830	"Results of the Surveyor Moon Shot"
	Program Chairman Dr. J. D. Tillman University of Tennessee Knoxville, Tenn. 37916	
Hampton Roads	Lloyd Ludwig, Manager Space Flight Operations Dept. Hughes Aircraft Co. Fullerton, Calif.	"Project Surveyor"
	Chester L. Buchanan, Head Deep Research Branch Ocean Science & Engrg. Division Naval Research Laboratory Washington, D. C. 20390	"Instrumentation for Deep Ocean Research"
	Edward E. Elwood Reynolds Aluminum Co. Fifth and Cary Streets Richmond, Va. 23218	"The Aluminant"
	Program Chairman Cary J. Spitzer IRD - TMS Langley Center MS 236 Langley Station Hampton, Va. 22365	
New Orleans	Hector P. Boncher, Vice Pres. Dresser Industries, Inc. P. O. Box 718 Dallas, Tex. 75221	"The Engineer's Fuzzy Image and What Must Be Done About It"

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<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
New Orleans (Cont'd.)	W. B. Orr, Asst. District Dir. International Revenue Service Federal Bldg. New Orleans, La. 70130	"Organizational Devel- opment"
	Adm. Pierre N. Charbonnet, Jr. 8th Naval District New Orleans, La.	"Carrier Warfare - A Study in Men and Machines"
	Program Chairman Herman M. Babin c/o General Electric Co. Richards Bldg. New Orleans, La. 70160	
Panama City	Dr. John P. Craven 6900 Wisconsin Ave. Chevy Chase, Md. 20015	"Deep Submergence Systems Program"
	Dr. E. R. Graf Auburn University Auburn, Alabama 36830	"Antennas and Propagation - Some Fundamental Thoughts on Design"
	Z. T. Crouch, Chief Engineer Southern Bell Tel. & Tel. Co. Jacksonville, Fla. 32201	"The Value of an Engineer"
	Program Chairman Willie Bryant U. S. Navy Mine Def. Lab. Panama City, Fla. 32401	
<u>REGION 4</u>		
Madison	Jack D. Pointer Wisconsin Power and Light Co. Madison, Wis. 53703	"Residential Electric Space Heating - Construction Re- quirements and Experience"
	Prof. A. C. Scott Dept. of Electrical Engineering University of Wisconsin Madison, Wis. 53706	"Lasers, Holograms and Flash- lights"
	Program Chairman Donald J. Helfrecht Madison Gas and Electric Co. Madison, Wis.	
Milwaukee	L. J. Lawson Power Equipment Division Lear Siegler, Inc. Cleveland, Ohio	"The Modern Cycloconverter"
	Dr. A. Sances Marquette University 8700 W. Wisconsin Ave. Milwaukee, Wis. 53226	"Biomedical Engineering"
	Program Chairman Neil C. DeVries 507 E. Michigan St. Milwaukee, Wis. 53201	

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Twin Cities	Jacob Rabinow Rabinow Laborator Division of Control Data Corp. Rockville, Md.	"Optical Character Reading"
	Lloyd Berggren North Star Research Institute Minneapolis, Minn.	"Mass Transportation for Urban Areas"
	Robert L. Crouse Honeywell 2600 Ridgway Road Minneapolis, Minn. 55413	"Making Tradeoffs for Reliability, Value and Profit"
	Dr. Mustafa Mosharrafa Dept. of Physical Medicine University of Minnesota Minneapolis, Minn. 55455	"Mass Spectrometry, Principals and Biological Applications"
	Dr. Ronald Dietzman University of Minnesota Hospitals Minneapolis, Minn. 55455	"Cardiogenic Shock, What It Is and Instrumentation for Measurement"
	Earl E. Bakken, Pres. Medtronic, Inc. 3055 Old Highway 8 Minneapolis, Minn.	"Comments on Past and Future Electronic Prosthetics"
	Dr. W. Dixon Ward University of Minnesota Minneapolis, Minn. 55455	"Hearing Losses as an Occupational Hazard"
Garry W. Barrett Contact Section Program Ch. below	"Touch Tone Dialing System"	
James Behringer Maico Electronics, Inc. 21 N. 3 St. Minneapolis, Minn. 55401	"Aid to Hearing"	
Program Chairman	Kenneth Dols 5913 Oliver Avenue, S. Minneapolis, Minn. 55419	

REGION 5

Houston	Dr. John S. Mayo Bell Telephone Laboratories Holmdel, N. J. 07733	"Future Communications Systems"
	George W. McLellan Corning Glass Works Corning, N. Y. 14830	"Glass - An Engineering Material"
	Thomas F. Horton Westinghouse Electric Corp. Baltimore, Md.	"Project Deepstar"
	Dr. E. W. Boehne ITE Circuit Breaker Co. 1900 Hamilton St. Philadelphia, Pa. 19130	"Nature, Art, and Arithmetic"
	Program Chairman	J. T. Robbins 2801 San Jacinto St. Houston, Tex. 77004

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
St. Louis	Dr. Edward M. Davis International Business Machines Corp. 1000 Westchester Ave. White Plains, N. Y. 10604	"The Young Engineer in Management"
	Col. John Erikson U.S.A. F. Aeronautical Chart and Information Center St. Louis, Mo. 63118	"Aeronautical Charts: U. S. to Viet Nam and Bombing Mission"
	William C. Lawrence, Vice Pres. American Airlines 633 Third Ave. New York, N. Y. 10017	"Electronics in Future Aircraft"
	Program Chairman	John L. Nolte Union Electric Co. 1901 Gratiot St. P. O. Box 149 St. Louis, Mo. 63166

REGION 6

Orange County	Lt. James Vorosmarti, USN Deep Submergence System Project Technical Office 139 Sylvester Road San Diego, Calif. 92106	"Man in the Sea Program"
	Thomas Reddin, Chief of Police City of Los Angeles Dept. of Police 150 N. Los Angeles St. Los Angeles, Calif. 90012	"Civil Disobedience -Command and Control"
	Dr. Gene LaFond Naval Electronics Laboratory San Diego, Calif. 92152	"Oceanographic Research Using Submersibles"
	Program Chairman	Willis R. Peterson 16907 Round Hill Drive Huntington Beach, Calif. 92647
San Fernando Valley	Roger Fuller, Engrg. Manager Deep Submergence Rescue Vehicle Prog. Lockheed Aircraft Co. Sunnyvale, Calif.	"Opportunities of the Interspace Frontier"
	Eugen Koffmann, Sr. Nuclear Physicist Los Angeles Dept. of Water & Power Los Angeles, Calif.	"Fissure or Fission - How and Why of Nuclear Generation"

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
San Fernando Valley (Cont'd.)	Dr. Irving S. Bengelsdorf, Sc. Editor Los Angeles Times Los Angeles, Calif.	"Biological Communications and Control"
	Program Chairman Irving Refkin 17430 Labrador Northridge, Calif. 91324	
San Francisco	Dr. H. Christian Zweng Stanford University School of Medicine Stanford, Calif. 94305	"Lasers in Medicine"
	Dr. Richard Petritz Texas Instruments Dallas, Tex.	"Engineering of Large Scale Arrays and Computer Aids"
	DeLoyce Alcorn Jet Propulsion Laboratory California Institute of Technology Pasadena, Calif. 91109	"The Surveyor"
	Program Chairman Jack E. Barkle Bechtel Corp. P. O. Box 3965 San Francisco, Calif. 94119	
San Gabriel Valley	D. A. Kunz U. S. Naval Ordnance Test Station 3202 East Foothill Blvd. Pasadena, Calif. 91107	"Recovery of H-Bomb Off Coast of Spain"
	Dr. Charles F. Richter California Institute of Technology 1201 East California Pasadena, Calif. 91109	"Engineering Considerations in Earthquake Resistant Construc- tion"
	Douglas W. Dupuin Public Information Office Stanford Linear Accelerator Corp. P. O. Box 4349 Stanford, Calif. 94305	"The Stanford Linear Acceler- ator"
	Program Chairman Dr. Henri Hodara Tetra Tech, Inc. 550 North Rosemead Drive Pasadena, Calif. 91107	

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Seattle	Dr. Dixie Lee Ray Pacific Science Center Seattle, Wash.	"The Future of Marine Science in the Northwest"
	Daniel C. Worlton Battelle Northwest Richland, Wash. 99352	"Research at Battelle Northwest"
	Joseph C. Marshall Westinghouse Electric Corp. San Francisco, Calif.	"Rapid Transit Systems"
	Program Chairman Rev. F. P. Wood Dept. of Electrical Engineering Seattle University Seattle, Wash. 98122	
<u>REGION 7</u>		
Ottawa	Prof. J. Weisenbaum Project MAC MIT Boston, Mass. 02139	"Man - Machine Cooperation"
	Olon Berglund A.S.E.A. (Sweden) New York, N. Y.	"High Voltage D. C. Trans- mission"
	Dr. G. Bull McGill University Montreal, Can.	"History of a Space-Research Project"
	Program Chairman R. Hobner 616 Tillbury Ave. Ottawa 13, Ontario, Can.	
Regina	L. M. Hovey Manitoba Hydro P. O. Box 815 Winnipeg 1, Manitoba, Can.	"Generation and Transmission Aspects of the Phase I - Nelson River Development"
	H. W. Habrel Hydro Quebec, Inc. Montreal, Quebec, Can.	"Hydro Quebec EHV Transmis- sion System"
	E. W. Boehne ITE Circuit Breaker Co. 1900 Hamilton St. Philadelphia, Pa. 19130	"Nature, Art, and Arithmetic"

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Regina (Cont'd.)	R. D. Cahoon Canadian Broadcasting Corp. Montreal, Quebec, Can.	"CBS Conversion to Color TV and Future of Television to Northern Canada Via Satellite Stations"
	Program Chairman G. R. Ursenbach 2240 Albert St. Regina, Saskatchewan, Can.	
Victoria	T. Costello c/o Boeing Co. Seattle, Wash.	"Lunar Orbiter Program"
	-E. Fraser -A. Lance c/o National Electrolab Associates 3110 Boundary Ave. Vancouver, B. C., Can.	"Monitoring Wild Animals through Radio Telemetering Systems"
	-R. H. Hill -E. P. Ehmayer c/o International Power Engrg., Ltd. 570 Dunsmuir St. Vancouver, B. C., Can.	"Stations Design and System Con- trol Design for B. C. Hydro EHV Transmission System"
	Program Chairman W. G. Holmes P. O. Box 1202 Victoria, B. C., Can.	
<u>REGION 8</u>		
Geneva	Dr. K. Huebner 2 Rue Breguet 2000 Neuchatel, Switzerland	"Semiconductor Developments at the Centre Electronique Horloger"
	Dr. I. I. Suran Electronic Applications Lab. General Electric Co. Electronics Park Syracuse, N. Y.	"Function Analysis of Computer Circuits"
	Dr. J. A. A. Raper General Electric Electronics Lab. Syracuse, N. Y.	"Linear Circuit Functions by Means of Digital Micro-electric Circuits"
	Program Chairman Dr. R. P. Wellinger 50 Port Roulant CH 2000 Neuchatel, Switzerland	
Norway	Dr. S. Forte Marconi Microelectronics Witham, Essex, England	"Microelectronics and the Cir- cuit Designer"

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<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
Norway (Cont'd.)	O. Ing. O. Havge Vassdraysvesenet, Middelhunsgr Oslo 29, Norway	"Automation of Power Stations"
	Siv. Ing. B. Gjersoe S. I., Forskningsv 1, Blindern Oslo 3, Norway	"Hybrid Technology in the De- velopment of Integrated Cir- cuits"
	Program Chairman Dr. Andreas Rannestad NDRE, Postboks 25 Kjeller, Norway	
<u>REGION 9</u>		
Mexico	Prof. Alexander Bereskin Dept. of Electrical Engineering University of Cincinnati Cincinnati, Ohio 45221	"Integrated Circuit Basics"
	Humberto Uquillas Sota Apartado Postal No. 505 Cuernavaca, Morelos, Mexico	"The Electric Capacitor - It's Behavior and Character- istics"
	Walter Glomb 500 Washington Ave. Nutley, N. J. 07110	"Earth Terminals for Com- munications Via Satellite"
	-Joaquin Del Castillo -Arturo Vendrell Obrero Mundial No. 578 Mexico, D. F., Mexico	"Undergrounded Distribution"
	Program Chairman Carlos A. Maigler Av. Cuauhtemoc No. 1203-1 Mexico 13, D. F., Mexico	
<u>LATE ARRIVALS</u>		
<u>REGION 5</u>		
Denver	G. A. Michelson Federal Aviation Agency Denver, Colo.	"Air Traffic Control"
	Edward F. Cleary Wilbur Smith & Associates 1212 Avenue of Americas New York, N. Y. 10036	"Electronic Techniques in Auto- mobile Traffic Control"
	Program Chairman Warren R. Wheeler College of Engineering University of Denver Denver, Colo. 80210	

<u>Section</u>	<u>Speaker and Address</u>	<u>Title of Speech</u>
REGION 6		
South Bay Harbor	Philip Horwith c/o TRW 1 Space Park Redondo Beach, Calif.	"Attacking Civil and Social Problems with Aerospace Techniques"
	Donald Hargrave c/o Siliconix Corp. 1751 S. La Cienega Los Angeles, Calif. 90035	"MOS vs. Junction FET as Analogue Switch"
	Captain R. Eaglet USAF, Space Systems Div. 2400 E. El Segundo Blvd. El Segundo, Calif. 90245	"Vietnam"
	Program Chairman	Prof. Guy H. Cain, Jr. Dept. of E. E. Long Beach State University Long Beach, Calif.

new standing committee of BofD, composed of the Junior Past President as chairman, the Treasurer, and two Directors-at-Large not on ExecCom.

NAME-AWARDS. (E. E. 12, Aug., p. 4.) August ExecCom spelled it out: "In order to establish uniformity, when an award carries an explanation "in honor of. . ." this can be contained in separate descriptive material accompanying the award but should not be on the face of the award itself."

EXECCOM MEETING SEPT. 20 was held too late to make this issue of E. E. ExecCom meets next at Boston Nov. 1; BofD there Nov. 2. E. E. 14, Dec., will cover the three meetings.

CHALLENGES AND OPPORTUNITIES

VALUE OF IEEE MEMBERSHIP to members and industry, as noted in E. E. 11, June, p. 1, was the subject of an article in June Spectrum, p. 49, by President MacAdam. A copy, in pamphlet form, is enclosed with this E. E. 13 to reinforce the interest generated. Other copies have been strategically placed, followed up by personal contacts, with key men in the major technically-oriented industries, universities, and government agencies, because of the common stake that engineers and their employers have in fighting technical obsolescence. Section Chairmen will undoubtedly have the message of this pamphlet integrated into dealings with applicants and members in dues arrears. (Reprints, D.G. Fink)

VOLUNTARY PAGE CHARGES. After having been under study for two years by TAB, OpCom, the Publications Board, and ExecCom, BofD in August approved the principle of "voluntary page charges" as a permissive source of revenue for Group publications. October Spectrum (in "Spectral Lines") will carry a comprehensive exposition.

As another source of revenue, display advertising in Group publications was also authorized on an optional basis recently,

if found technically and economically advisable. (E. E. 11, June, p. 3)

DEFERRED BYLAW CHANGES. BofD held over until November 4, for further consideration, proposed revision of Bylaw 401.8. Each Regional Committee, in its biennial election year, is now required to make "at least one" nomination for Regional Delegate-Director. Proposal is to require the nomination of "candidates" (sic, plural). "In exceptional cases the Regional Committee may submit one nomination only, provided that an explanation satisfactory to the Board of Directors is submitted."

This change was recommended by ExecCom, which felt that a choice should be offered voters in Regional elections as an essential element in the representation of members on BofD.

A CANON OF ETHICS, after a period of quiescence, is being studied by the Professional Relations Committee and ExecCom for BofD. (Comments, chairman L. D. Chipman, care J.M. Kinn)

TOOLS AND AIDS

THREE-RING BINDER. E. E. and its Supplements and some other IEEE documents are put through a 3-hole punch for ease of binding. E. E. recommends 3-ring binders. Some thin, primary papers, like lists, calendars, are frequently consulted but hard to find or are lost unless bound.

Though E. E. items (like this one) may be repeated after 6 issues, (one year); but to preserve pace and conserve space we may refer to but do not repeat items more often.

RECORDS OF ONE'S OWN UNIT. Theory demands that an outgoing officer (say, next January) turn over a 2-year accumulation of papers to his successor. Three things conspire to interfere: 1) time and effort ruthlessly to reduce to size manageable by inexperienced person taking over; 2) high cost of transporting papers by first-class mail; unfamiliarity, inaccessibility of express; 3) reluctance of outgoing

officer, if moving into a related job, to surrender papers he feels he'll need.

These problems press in December-January, June-July, but should be tackled a month earlier. Solutions, of course, are all local, and are usually found amicably if only partially.

"ORGANIZATIONAL ROSTER, September 1967" is being mailed out separately. A most useful tool, reflecting mid-1967 personnel changes. Authoritative for unit names. Gives mail address of chairmen; for others, see Membership Directory, 1966 (new one to be issued, early 1968). Study of Roster is like picture-of-1000-words on way IEEE is put together. (Copies, Miss Emily Sirjane)

COMMITTEE COMMON LORE - IIIA. In green Supplement to this issue, the unofficial treatment of Committees—General is continued as an aid to new chairmen and Committee members. Final article in December, on Rules of Order.

TRANSFER OF FUNDS TO IEEE by members and applicants in five countries overseas, for dues, Group fees, subscriptions, etc., has been simplified. Formerly they had to find a bank to sell them U.S. dollars before a postal money order could be negotiated.

IEEE has now opened accounts in branches or correspondents of Chase Manhattan Bank in London, Paris, Frankfurt, Rome (Region 8), and Tokyo (Region 10), to the credit of which members may deposit checks in local funds at prevailing exchange, accompanied by IEEE's bill or a membership application.

ExecCom has authorized similar arrangements to be set up, wherever feasible, in Latin America (Region 9). (Inquiries, W. J. Keyes)

"FOR YOUR INFORMATION"

NECROLOGY. Regretfully we report the death, at his home in Verona, New Jersey, September 14th, of L. D. (Larry) Leonard, Staff Secretary to the Education and Student Branches Committees. He was widely

known and respected wherever IEEE has relations with the colleges, schools, and universities.

ELECTIONS AND APPOINTMENTS CAL-NDAR. (See last page, Statements of Policy, blue Supplement to E. E. 12, August.) Subject now only to ratification by 1968 BofD or ExecCom, chairmen of 1968 standing committees have been notified of their selection by August BofD, and have recommended their slates of officers and committeemen (E. E. 12, p. 2).

In November 1967 the IEEE Secretary will issue his call for nominations of 1969 President, elected Vice President, and Directors-at-Large, for election during 1968.

MEMBERS TRAVELING ABROAD, either out of or into the United States and Canada, are encouraged to make advance contact with Section officers at destinations with a view to participation in IEEE activities during their stay. (Spectrum, September '67, p. 28.) A similar welcome is often extended to speakers (E. E. 7, Oct. '66, p. 4). (Names of Section officers, other particulars, Miss Emily Sirjane)

LATEST OF THE COUNCILS OF GROUPS to be formed within TAB is the Quantum Electronics Council, comprehending the Electron Devices and the Microwave Theory & Techniques Groups. The Council will determine policies for conference activities in its area. It will also assume responsibility for publishing the IEEE Journal of Quantum Electronics. (Reference to the other three TAB councils: E. E. 11, June, p. 6.

SCIENCE ABSTRACTS, SECTION B. The Institution of Electrical Engineers (IEE), London, has invited IEEE to act as agent for subscriptions in the Americas. ExecCom has authorized negotiations.

IEEE ELECTRICAL & ELECTRONICS DICTIONARY (E. E. 12, Aug., pp. 1-2). ExecCom has chosen John Wiley & Co. as publisher. Preparation proceeds, in consultation with Dr. Mimno. (Inquiries, J. J. Anderson)

INSURANCE CODING. The staff is completing the coding of names of members who participate in the members' insurance program. Any inquirers should be assured that insurance mailings are not at IEEE expense. Members who object to receiving insurance mailings may request IEEE to have their names deleted from that list. (Miss Emily Sirjane)

CHOOSING COMMITTEE MEMBERS. (Idea No. 1, 236) R. C. Winton, Secretary, U.K. & Ireland Section, London, having read Committee Common Lore II (with E. E. 12), thinks the tests applied for good committeemen were, if anything, not stringent enough. He would add ability to communicate and imagination to the sine qua non list we gave: competence, experience, willingness and time to serve, availability of support, and reputation.

Ability to communicate, he writes, is expressing oneself clearly, talking to the point, avoiding unnecessary detail, helping reach decisions, not preoccupying the time, allowing others to speak, not interrupting. (27 words, net)

Imagination we need, he says -- to do new things, or to do old things in new ways. Because imagination is liveliest in the young, we need a balance of young men on committees.

Robert Winton's criteria are succinct and searching, either as a sieve to sort candidates or as a Way of Life. By all means read this issue's Green Paper III-A (along with Mr. Winton, who hadn't seen it when he wrote). Then take his 27-word classic along with you into committee, peek at it from time to time, and ask yourself "How'm I doing?"

"UNIT:" IS THERE A BETTER NAME?

"Unit" sound minuscule, like "molecule"—but is not too bad if you know your molecules. "Entities" is slightly effete. "Bodies" are for the morgue. "Groups" is good but pre-empted. "Committees" is too restrictive: many of our units have committees but themselves are not committees in the same sense.

Thumb your thesaurus. Edify the editor.

HOW TIME FLIES! (E. E. 7, Oct. 66, p. 2) Have a piece of Y^e Ed's anniversary cake, with one candle on it.

HAIL AND FAREWELL

Safety Committee 1902-1967 66 years
Research Committee 1921-1967 47 years

WELCOME ABOARD!

Staff: J. Howard Schumacher, Jr., formerly of Electronics Industries Association's staff; to work as Manager, Technical Services, with Dr. Emberson, on all matters pertaining to IEEE technical activities.

Secretarial assignments:

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Translated Journals -
A. A. McKenzie

Groups: Quantum Electronics Council

Electron Devices
Microwave Theory & Techniques

Man-Machine Systems Group (G-28)
(formerly Human Factors in
Electronics, G-28)

New Group Chapters in Sections:

Section	Chapter
New Jersey Coast	Joint: Engineering in Medicine and Biology Man-Machine Systems Systems Sci- ence & Cybernetics

Seattle	Parts Materials & Packaging
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Tulsa	Geoscience Elec- tronics
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- end -

Supplements:

Pamphlet: Value of membership
White - Educational Activities Board
Green - Committee Common Lore III-A
Canary - Speakers Directory

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