FUTURE OF G-PC DISCUSSED IN PATTERSON REPORT

A Report to AdCom by T. T. Patterson

This report will cover some thoughts on long-range planning for the Group on Professional Communications. I will cover some history, where we are now, and some options for the future. Material has been drawn from communications with Bill Bulloch, Jim Lufkin, and from personal observations.

History

The IRE group on Engineering Writing and Speech was formed in May 1957 by a group of IRE members who were working in technical publications for engineers and scientists. Members of the first AdCom represented Bell Labs, IBM, RCA, Univac, Sperry Gyroscope, Electronics magazine, and others. Early activities centered around forming chapters, starting the Transactions and Newsletter, participating in national IRE meetings, and holding its own national meetings.

By 1959 the group had about seven active chapters, a good Transactions, a regular Newsletter, sessions at the New York IRE Convention and at WESCON, and sponsored a Dual National Symposium held simultaneously in Boston and Los Angeles. Membership was close to 2000.

In 1965 an in depth survey of G-EWS membership was conducted. The membership was 1800 and 607 replies were tabulated (EWS-9 no. 2, Dec 1966). Over 62% had degrees in EE or Physics. Nearly 43% were working as EE's or physicists and another 27% were managers or supervisors; only 12% were writers or editors. Members' desired benefits were personal improvement 61.8% and knowledge of publications techniques 38.1% (there are duplicate responses here, i.e., some interested in both). In this year seven chapters were listed for G-EWS, but the survey indicated that they were not too active, eight years after the group's formation.

Early in 1972 the group's name was changed to Professional Communications. There was one chapter in England. Transactions that year totaled 124 pages.

In 1973 Transactions totaled 217 pages including the special issue on the Future of Scientific and Technical Journals (134 pages).

In 1974 Transactions totaled 63 pages in three issues. During that year, G-PC sponsored a meeting in Pittsburgh for engineers on "Getting Your Ideas Across."

G-PC TO PARTICIPATE IN STC MEETING

The Professional Communication Group will sponsor three sessions at the 23rd International Conference on Communications, to be held at Washington, D.C. May 12 to 15, 1976. The sessions are being organized by Larry Liebman of IEEE and PC Group member Dave Dobson, of McGregor & Werner Inc.
Present plans call for the following:

Session 1: What technical composition is; what it can and can't do; and what machinery is available for what it can do.

Session 2: A panel discussion: The "Machine" versus the Computer for technical composition.

Session 3: Audience participation in the discussion of session 2.

Dave Dobson will act as moderator.

G-PC HAS NEW TREASURER

John Phillips of RCA has been appointed Treasurer of the PC Group to replace Bill Arrott, who recently resigned.

JOB OPENING FOR ENGINEER/TECH-WRITER

The following was received for inclusion in the Newsletter. Replies will be forwarded to the source.

Technical Writer - Electrical Engineer

BSEE or Equivalent with technical writing skills. Prefer electrical building design or electrical power background. Permanent position with excellent future with leading electrical manufacturer. Position requires ability to write technical papers, bulletins, and product literature plus do some application engineering to stay sharp. Relocation to St. Louis area required. Salary open. Equal Opportunity Employer. Send brief resume to PC Newsletter Editor.

Applicable job openings will be carried by the Newsletter as a service to G-PC members.

MINUTES OF THE ADCOM MEETING, AUG. 22, 1975

Present: Bulloch, Dobson, Gold*, Lufkin, Meyer, Patterson, Phillips, Seideman, Swanson

Finance. John Phillips, our new treasurer, reported that the Conference on Scientific Publications held at Cherry Hill, New Jersey at the end of April was financially successful. In addition to the fees collected, the Conference was supported by a $6,000 grant from the National Science Foundation.

Meetings. Jim Lufkin reported on preliminary discussions held on the G-PC conference being planned for the fall of 1976. It will be somewhat similar to the 1972 conference on the Psychology of Engineering Communications. An attempt will be made to get someone well known for research and teaching in this field for conference chairman. Dave Dobson reported that our Group "sponsored" a session on technical (mathematical) composition techniques at the June meeting of the Society for Technical Communications (STC) national meeting at Anaheim in June. The STC meeting scheduled for May 1976 will include three sessions sponsored by G-PC. (See separate news item in this issue. Ed.)

Publications. Irv Seideman, Newsletter editor, reported that another Newsletter was well under way, and he hoped to be able to include the list of nominees for AdCom.

STC Liaison. Dave Dobson reported on conversations he had with Curt Youngblood of the STC Washington staff; Bill Wells, *Transactions* editor, and Dr. Emberson of IEEE concerning the possible merger of the PC and STC newsletters. Dr. Emberson pointed out that this could be done with no additional publication expense to G-PC. Dobson stated that some other IEEE Groups already were publishing in combination with non-IEEE organizations. The possibility of a "combined" *Transactions* also was being studied. Dobson moved that we combine the Newsletters. In the ensuing discussion, it was suggested that this be delayed until the Ways and Means Committee, which is studying the future direction and objectives of G-PC, has reported on its work. Dobson's proposal was amended to permit a reconsideration of the move at the next AdCom meeting. In the interim, Dobson will get information from STC to permit comparison of the occupations and interests of members of the two affected groups.

Ways and Means. Bill Bulloch reported briefly on his discussions with AdCom members and IEEE staff personnel on the future of G-PC. Suggestions ranged from disbanding the group to merger with some other organization (e.g., STC, IEEE Management Group, IEEE Education Group). He suggested that we re-examine our potential relationship to the 150,000 (nominal) IEEE members who are not G-PC members. A motion that not more than $500 be appropriated for a G-PC current membership survey was proposed and carried.

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*Jack Gold replaces Bill Arrott, who resigned from AdCom.

Long-Range Planning. Tom Patterson submitted a report on this subject in which he called for development of a new set of goals consistent with the current potentials for the contribution of the G-PC — to exert the effort necessary to sustain a "group that helps engineers to do their job better, that helps publication people to do their job better, and that creates a group that interested people will want to join."

ON THE WAY TO METRICATION

Voluntary Metric Conversion Bill Approved In House

A metrication conversion bill (H. F. 7353) has passed through the House Committee on Science and Technology and is expected to be approved by the Rules Committee and the House itself shortly. The measure calls for a voluntary change-over to the metric system and establishes a 21-member Board to coordinate the effort. It defines "metric system" as the International System of Units (SI) as established by the General Conference of Weights and Measures. The EJC Metric Commission had urged the adoption of this system in testimony submitted to Science and Technology for hearings held in May. In the Senate, S. 1882 calls for a voluntary program similar to H. R. 7353, while S. 100 would establish a mandatory ten-year changeover period.

ANMC Adopts "Meter-Liter" Spelling for its Publications

The American National Metric Council, after much deliberation which included surveys and consultation with noted linguists, has decided that "it shall be the policy of ANMC to use the spelling 'meter' and 'liter' in all its publications." This represents a reversal of the Council's past practice.

"Although many people are dismayed," the Council statement said, "at the amount of time that has been spent on debating a seemingly trivial question, a uniform approach in the United States is important at this time for consistent use in textbooks, standards and many other documents. To an author or publisher, the question is anything but trivial — and may involve economic consequences."

The statement recognizes that the "metre" and "litre" spellings will continue to be widely used. More than 60 percent of those consulted in the ANMC study considered it to be more important to achieve uniformity of the spelling of these two words throughout the United States than in international English-language communication.

Government Action on Metrication

The House has passed H. R. 8674, which calls for a 25-member U.S. Metric Board to plan and coordinate a program for conversion to the metric system and research and public education programs. This was a somewhat watered down version of previous bills. It would allow strictly *voluntary participation* and contains *no definite time schedule.* It is expected that the Senate will pass a similar bill shortly. In the meantime the Department of Commerce has adopted the policy of — *er* spelling of *meter and liter* in all government printing.

NEW IEEE PUBLICATIONS
Catalog of IEEE PRESS Books Issued

A catalog of 22 *IEEE PRESS* books now in print has become available.

Twenty of the books are from the IEEE PRESS Selected Reprint Series and include such new titles as *Computer Communications, Nonlinear Networks, Data Communications via Fading Channels,* and a revised and expanded edition of *Literature in Digital Signal Processing.* Other recent books are *Frequency Synthesis, Automatic Test Equipment, Stability of Large Electric Power Systems, Computer-Aided Filter Design, Digital Signal Processing,* and two volumes on minicomputers.

IEEE Selected Reprint books are published in jacketed clothbound editions as well as in special paperbound editions reserved for IEEE members. In addition to being available from the Institute, IEEE PRESS books are distributed worldwide by John Wiley & Sons, Inc.

A free copy of the new catalog may be obtained by writing to: IEEE PRESS, Attention: M. A. Walter, 345 East 47th Street, New York, N.Y. 10017.

The reviews of four books recently announced by the IEEE PRESS are given below. These are:

Frequency Synthesis: Techniques and Applications, a volume edited by Jerzy Gorski-Popiel of M.I.T. Lincoln Laboratory.

Magnetic Bubble Technology: Integrated Circuit Magnetics for Digital Storage and Processing, edited by Hsu Chang of IBM.

Energy and Man: Technical and Social Aspects of Energy, edited by M. Granger Morgan of Carnegie-Mellon University.

Career Management: A Guide to Combating Obsolescence, edited by Harold G. Kaufman of the Polytechnic Institute of New York.

Frequency Synthesis is written for the practicing engineer faced with a need to learn about design or apply modern frequency synthesizers. Many advances in frequency synthesis have been made in recent years, and a variety of systems have been developed, which may be broadly divided into those using direct, indirect, and all-digital techniques. This volume describes the basic properties of synthesizers, compares the three approaches on the basis of performance and complexity, presents case studies in sufficient detail to permit the reader to confidently apply and design synthesizers, and discusses alternate configurations and the characterization and measurement of noise.

Each of the six chapters is written by an expert in the subject discussed. Chapter titles are: Applications of Frequency Synthesizers, Contemporary Frequency Synthesis Techniques, Direct Frequency Synthesis, Phase-Locked Loop Frequency Synthesizers, Digital Frequency Synthesizers, Hybrid Configurations and Frequency Stability.

This 184-page clothbound book, sponsored by the IEEE Educational Activities Board, is priced at $11.95 (discounted to $8.95 for IEEE members).

Magnetic Bubble Technology furnishes a detailed appraisal of bubble technology and its applications for digital data storage and processing. With its critical examination of current uses and assessment of potential applications, it will be of interest alike to specialists and to the general engineering and scientific public.

A unique feature of this volume is that it includes, along with the 45 reprinted papers, more than 200 pages of tutorial material written by the editor, as well as a comprehensive bibliography and list of patents.

The book begins with a chapter on the historical background for the emergence of bubble technology. The essential physical phenomena and device structures are detailed in the next chapter. The third chapter discusses various applications, such as storage, logic, data management, picture processing, and switching. The fourth and fifth chapters delve into physics and materials, and the final chapter gives an assessment of the intrinsic capabilities of bubble technology as a basis to extrapolate its future progress and to compare it with competing technologies. These six chapters of specially-written material are followed by the reprinted papers, which are grouped according to the same subject areas.

This 712-page book, sponsored by the IEEE Magnetics Society, is priced at $11.95 for the paperbound member edition. A clothbound edition is available for $23.95 (discounted to $17.95 for IEEE members).

Energy and Man renders it unnecessary for a reader to make his way through six to eight shelf-feet of published material before beginning to feel literate in the technology of energy and its interactions with society. The 63 papers included were carefully selected from this large body of literature as being the most important and informative, both to the newcomer to the field and to the energy professional.

This book addresses energy problems at the technology-society interface, largely from the perspective of the technologist. Among the various energy technologies, greatest emphasis is placed upon the electric sector. There is substantial coverage of some of the fundamental social and environmental impacts and interactions which result from energy use, and some space has been allotted to direct fuel use in industrial applications and space heating.

The books consists of five parts. *Part I: Reference Frame — The Earth System* gives an overview of the basic limits and parameters established by the earth system and explores possible interactions between human energy use and the global ocean-atmosphere system. *In Part II: An Overview of Energy Use in the United States,* the history and projection of energy use in the United States is explored at a fairly general level. *Part III: The Technology of Energy* discusses the present and future status of most of the major energy conversion, transmission, and storage technologies. The final two parts concentrate on some of the social aspects of energy use. *Part IV: Social Issues — The Benefits and Costs of Energy Use* focuses on the social benefits

HOW TO TALK MATHEMATICS
by P. R. Halmos

Apology

The purpose of what follows is to suggest to a young mathematician what he might do (and what he had better not do) the first few times that he gives a public lecture on his subject. By a "public lecture" I mean something like a colloquium talk (to more or less the entire mathematics department at a large university), or an invited address (to more or less the entire membership in attendance at a meeting of the American Mathematical Society); I do not mean a classroom lecture (to reluctant beginners) or a seminar talk (to dedicated experts).

A genius makes his own rules, but a "how to" article is written by one ordinary mortal for the benefit of another. Harpo Marx, one of the greatest harpists of all times, was never taught how to play; everything he did was "wrong" according to standard teaching. Most things that an article such as this one can say have at least one counterexample in the practice of some natural born genius. Authors of articles such as this one know that, but, in the first approximation, they must ignore it, or nothing would ever get done.

Why Lecture?

What is the purpose of a public lecture? Answer: to attract and to inform. We like what we do, and we should like for others to like it too; and we believe that the subject's intrinsic qualities are good enough so that anyone who knows what they are cannot help being attracted to them. Hence, better answer: the purpose of a public lecture is to inform, but to do so in a manner that makes it possible for the audience to absorb the information. An attractive presentation with no content is worthless, to be sure, but a lump of indigestible information is worth no more.

The question then becomes this: what is the best way to describe a subject (or that small part of a subject that has recently been the center of the lecturer's attention) to an audience of mathematicians most of whom are interested in something else? The problem is different from describing a subject to students who, willy nilly, must learn it in usable detail, and it is different from sharing a new discovery with fellow experts who have been thinking about the same sort of thing and are wondering what you know that they don't.

Simplicity

Less is more, said the great architect Mies van der Rohe, and if all lecturers remembered that adage, all audiences would be both wiser and happier.

Have you ever disliked a lecture because it was too elementary? I am sure that there *are* people who would answer yes to that question, but not many. Every time I have asked the question, the person who answered said no, and then looked a little surprised at hearing the answer. A public lecture should be simple and elementary; it should not be complicated and technical. If you believe and can act on this injunction ("be simple"), you can stop reading here; the rest of what I have to say is, in comparison, just a matter of minor detail.

To begin a public lecture to 500 people with "Consider a sheaf of germs of holomorphic functions . . . " (I have heard it happen) loses people and antagonizes them. If you mention the Künneth formula, it does no harm to say that, at least as far as Betti numbers go, it is just like what happens when you multiply polynomials. If you mention functors, say that a typical example is the formation of the duals of vector spaces and the adjoints of linear transformations.

Be simple by being concrete. Listeners are prepared to accept unstated (but hinted) generalizations much more than they are able, on the spur of the moment, to decode a precisely stated abstraction and to re-invent the special cases that motivated it in the first place. Caution: being concrete should not lead to concentrating on the trees and missing the woods. In many parts of mathematics a generalization is simpler and more incisive than its special parent. In such cases there is always a concrete special case that is simpler than the seminal one and that illustrates the generalization with less fuss; the lecturer who knows his subject will explain the complicated special case, and the generalization, by discussing the simple cousin.

Some lecturers defend complications and technicalities by saying that that's what *their* subject is like, and there is nothing they can do about it. I am skeptical, and I am willing to go so far as to say that such statements indicate incomplete understanding of the subject and of its place in mathematics. Every subject, and even every small part of a subject, if it is identifiable, if it is big enough to give an hour talk on, has its simple aspects, and they, the simple aspects, the roots of the subject, the connections with more widely known and older parts of mathematics, are what a non-specialized audience needs to be told.

Many lecturers, especially those near the foot of the academic ladder, anxious to climb rapidly, feel under pressure to say something brand new — to impress their elders with their brilliance and profundity. Two comments: (1) the best way to do that is to make the talk simple, and (2) it doesn't really have to be done. It may be entirely appropriate to make the lecturer's recent research the focal point of the lecture, but it may also be entirely appropriate not to do so. An audience's evaluation of the merits of a talk is not proportional to the amount of original material included; the explanation of the speaker's latest theorem may fail to improve his chances of creating a good impression.

An oft-quoted compromise between trying to be intelligible and trying to seem deep is this advice: address the first quarter of your talk to your high-school chemistry teacher, the second to a graduate student, the third to an educated mathematician whose interests are different from yours, and the last to the specialists. I have done my duty by reporting the formula, but I'd fail in my duty if I didn't warn that there are many who do not agree with it. A good public lecture should be a work of art. It should be an architectural unit whose parts reinforce each other in conveying the maximum possible amount of information — not a campaign speech that offers something to everybody and, more likely than not, ends by pleasing nobody.

Make it simple, and you won't go wrong.

Details

Some lecturers, with the best of intentions, striving for simplicity, try to achieve it by being overly explicit and overly detailed; that's a mistake.

"Explicit" refers to computations. If a proof can be carried out by multiplying two horrendous expressions, say so and let it go at that; the logical simplicity of the steps doesn't necessarily make the computation attractive or informative to carry out. Landau, legend has it, never omitted a single epsilon from his lectures, and his lectures were inspiring anyway — but that's the exception, not the rule. If, on an exceptional occasion, you think that a brief computation will be decisive and illuminating, put it in, but the rule for ordinary mortals still stands: do not compute in public. It may be an explicit and honest thing to do, but that's not what makes a lecture simple.

"Detailed" refers to definitions. Some lecturers think that the way to reach an audience of non-experts is to tell them everything. ("To get to the theorem I proved last week, I need, starting from the beginning, 14 definitions and 11 theorems that my predecessors have proved. If I talk and write fast, I can present those 25 nuggets in 25 minutes, and in the rest of the time I can state and prove my own thing.") This, too, is honest, and it makes the lecture self-contained, in some sense — but it is impossible to digest, and its effect is dreadful. If someone told you, in half an hour, the meaning of each ideogram on a page of Chinese, could you then read and enjoy the poem on that page in the next half hour?

Problems

It is a false concept of simplicity that makes a lecturer concentrate only on what is safe and known; I strongly recommend that every public lecture reach the frontiers of knowledge, and at least mention something that is challenging and unknown. It doesn't have to be, it shouldn't be, the most delicate and newest technicality. Don't be afraid of repeating an old one; remember that many in your audience probably haven't heard of your subject since they took a course in it in graduate school, a long time ago. They will learn something just by hearing today that the unsolved problem they learned about years ago is still unsolved. The discussion of unsolved problems is a valuable part of the process of attracting and informing — it is, I think, an indispensable part. A field is not well described if its boundaries are missing from the description; some knowledge of the boundaries is essential for an understanding of where the field is today as well as for enlarging the area of our knowledge tomorrow. A

public lecture must be simple, yes, but not at the cost of being empty, or, not quite that bad but bad enough, it must not be incomplete to the point of being dishonest.

Organization

The organization of a talk is like the skeleton of a man: things would fall apart without it, but it's bad if it shows. Organize your public lecture, plan it, prepare it carefully, and then deliver it impromptu, extemporaneously.

To prepare a talk, the first thing to know is the subject, and a very close second is the audience. It's much more important to adjust the level to fit the audience in a public lecture than it is in a book. ("Adjust the level" is not a euphemism for "talk down". Don't insult the audience, but be realistic. Slightly over the mark, very slightly, doesn't do much harm, but too much over is much worse than somewhat under.) A reader can put down a book and come back to it when he has learned more; an annoyed and antagonized listener will, in spirit, leave you, and, as far as this talk is concerned, he'll never come back.

The right level for a talk is a part of what organization is meant to achieve, but, of course, the first and more important thing to organize is the content. Here I have two recommendations (in addition to "prove something" and "ask something", already mentioned): (1) discuss three or four related topics, and the connections between them, rather than relentlessly pursue one central topic, and (2) break each topic into four or five sub-topics, portable, freely addable or subtractable modules, the omission of any one of which would not wreck the continuity.

As for extemporaneous delivery, there are two reasons for that: it sounds good, and it makes possible an interaction between the speaker and the listeners. The faces in the audience can be revealing and helpful: they can indicate the need to slow down, to speed up, to explain something, to omit something.

Preparation

To prepare a talk means to prepare the subjects it will cover, the order in which those subjects are to come, and the connections between them that you deem worthy of mention; it does not mean to write down all the words with the intention of memorizing them (or, much worse, reading them aloud). Still: to write it all out is not necessarily a bad idea. "All" means all, including, especially, exactly what is to be put on the blackboard (with a clear idea of when it will be put on and whether it will remain for long or be rubbed out right away). To have it all written out will make it easier to run through it once, out loud, by a blackboard, and thus to get an idea of the timing. (Warning: if the dry run takes 20 minutes, then the actual delivery may take as long as 30 minutes.

Brevity

Most talks are described as "half-hour lectures", but, by a generally shared tradition, most are meant to last for 20 minutes only. Nobody will reproach you for sitting down after 15 minutes, but the majority of the audience will become nervous after 30, and most of them will glare at you, displeased and uncomfortable, after 35.

To take long, to run overtime, is rude. Your theorems, or your proofs, are not all that important in other peoples' lives; that hurried, breathless last five minutes is expendable. If you didn't finish, say so, express your regret if you must, but stop; it's better thus than to give the audience cause for regret.

Techniques

A public lecture usually begins with an introduction by the chairman of the session. Rule of etiquette: give him a chance. Before the lecture begins, sit somewhere by the side of the room, or with the audience, near the front; do not stand by or near the blackboard, or hover near the chairman worrying him.

One good trick to overcome initial stage fright is to memorize one sentence, the opener. After that, the preparation and your knowledge of the subject will take over.

Try very hard to avoid annoying mannerisms. Definition: an annoying mannerism is anything that's repeated more than twice. A mannerism can be verbal ("in other words", pronounced " 'n 'zer w'rs", meaning nothing), it can be visual (surrounding a part of the material on the blackboard by elaborate fences), or it can be dynamic (teeter-tottering at the edge of the platform).

Silence is a powerful tool at other times too; the best speakers are also the best nonspeakers. A long period of silence (five seconds, say, or ten at most) after an important and crisply stated definition or theorem puts the audience on notice ("this is important") and gives them a chance to absorb what was just said. Don't over do it, but three or four times during the hour, at the three or four high points, you might very well find that the best way to explain something is to say nothing.

Speak slowly and speak loudly; write large and speak as you write; write slowly and do not write much. Intelligently chosen abbreviations, arrows for implications, and just reminder words, not deathless prose, are what a board is for; their purpose is to aid the audience in following you by giving them something to look at as well as something to listen to. (Example: do not write *"semisimple is defined as follows:"*; write *"semisimple;"*.) Do not, ever, greet an audience with a carefully prepared blackboard (or overhead projector sheets) crammed with formulas, definitions, and theorems. (An occasionally advisable exception to this rule has to do with pictures — if a picture, or two pictures, would help your exposition but would take too long to draw as you talk, at least with the care it deserves, the audience will forgive you for drawing it before the talk begins.) The audience can take pleasure in seeing the visual presentation grow before its eyes — the growth is part of your lecture, or should be.

Flexibility

Because of the unpredictability of the precise timing (you didn't rehearse enough, the audience asks questions during the talk the lecture room is reserved for another group at 5:00 sharp, or you just plain get mixed up and waste time trying to get unscrambled), flexibility is an important quality to build into a lecture. You must be prepared to omit (or to add!) material, and you must be prepared to do so under pressure, in public, on the spur of the moment, without saying so, and without seeming to do so. There are probably many ways to make a lecture flexible; I'll mention two that I have found useful.

The first is exercises. Prepare two or three statements whose detailed discussion might well be a part of the lecture but whose omission would not destroy continuity, and, at the proper places during your lecture, "assign" them to the audience as exercises. You run the slight risk of losing the attention of some of the more competitive members of the group for the rest of the hour. What you gain is something else that you can gracefully fill out your time with if (unlikely as that may be) you finish everything else too soon, and, at the same time, something that'll never be missed if you do not discuss the solution. (Exercises in this sense may yield another fringe benefit: they'll give the audience something to ask their courtesy questions about.)

A second way to make a lecture flexible is one I mentioned before and I believe is worth emphasizing again: portable modules. My notes for a lecture usually consist of about 20 telegraphically written paragraphs. The detailed presentation of each paragraph may take between 2 and 4 minutes, and at least half the paragraphs (the last 10) are omittable. These omittable modules often contain material dear to my heart: that clever proof, that ingenious generalization, that challenging question — but no one (except me) will miss them if I keep mum. Knowing that those modules are there, I sail through the first half of the period with no worries: I am sure that I won't run out of things to say, and I am sure that everything that I *must* say will get said. In the second half, or last third, of the period I keep an eye on the time, and, without saying anything about it, make instantaneous decisions about what to throw overboard.

One disadvantage of this method is that at the end of your time you might sound too abrupt, as if you had stopped in the middle of a sentence. To avoid the abrupt ending, prepare your peroration, and do *not* omit it. The peroration can be a three-sentence summary of the whole lecture, or it can be the statement of the most important unsolved problem of the subject. Make it whatever you think proper for an ending, and then end with it.

Rule of etiquette: when you stop, sit down. Literally sit down. Do not just stop talking and look helpless, and do *not* ask for questions; that's the chairman's job.

Summary

My recommendations amount to this: make it simple, organized, and short. Make your lecture simple (special and concrete); prepare, in detail; organize the content and adjust to the level of the audience; keep it short, and, to be sure of doing so, prepare it so as to make it flexible.

Remember that you are talking in order to attract the listeners to your subject and to inform them about it; and remember that less is more.

LONG RANGE PLANNING (continued)

Comparative Organizations

In 1957 there was no other organization for professional publications personnel to join (that we knew of). Most of us were doing engineering publications work and were IRE members. I was not a member, but I became aware of the Society for Technical Writers and Editors (STWE) in the 1960's; later it became the Society for Technical Writer and Publishers (STWP). In Philadelphia this organization was vendor oriented, and chapter meetings were held at vendor's plants in succession, including tours of course. Their chapters were also active in Boston and Washington, and probably in other major cities.

Today the Society for Technical Communications (STC) seems to have emerged as the association for professional publications personnel. The announced program for their May meeting in California had something for everyone: Communication Management, Education and Research, Visual Communication, and Writing and Editing.

There is enough overlap in membership between STC and G-PC that a committee has been appointed within G-PC to explore ways and means of cooperating between the two groups.

A few weeks before that STC meeting, G-PC held its annual meeting in April at Cherry Hill, New Jersey, on Scientific Journals. That meeting is certainly one of the most comprehensive studies of journals held in recent years; writing, editing, typesetting, refereeing, copying, printing, distributing, retrieving, illustrating were all covered in a thoroughly professional conference.

No doubt reports on these two meetings at the next G-PC AdCom meeting will give more insight into the direction and capabilities of these two groups in serving publications personnel.

Current Impressions

The G-PC is one of 30-plus groups in IEEE concerned with various facets of engineering and related fields. The group's interest areas are expressed in the IEEE membership brochure as follows:

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IEEE Transactions on, quarterly. Scope: The study, development, improvement, and promotion of effective techniques for preparing, organizing, processing, editing, collecting, conserving, and disseminating any form of information by and to individuals and groups by any method of communication. It also includes technical, scientific, industrial, and other activities that contribute to the techniques and products used in this field.

The IEEE Technical Interest Profile for information dissemination describes the interest of members with the following descriptors:

2600	*Professional Communication*
2610	General Writing and Editing Techniques
2620	General Illustration Techniques
2630	Technical Publications
2639	Management
2640	Technical Presentations
2650	Reproduction Techniques
2660	Information Processing
2670	Non-Print Media
2680	Technical Journalism
2690	Technical Writing Education

Personally, I have a hard time reconciling these two characterizations of the same group of people.

So, my first suggestion is to restate the goals of the group. But, before that can be done, some introspective searching must take place — individually, in groups, in colloquium or in conference — to place IEEE in the technical community, to place G-PC in IEEE and to place members in the G-PC. Here the decision is whether the membership of G-PC should be engineers, publications personnel or both. How are their roles defined? What assistance can they give each other? How can they do it? etc.? What, if any, is the role of STC? NASW? G-Education? G-Management? IEEE Publications Board? Editors of group Transactions?

These questions can be summarized as follows: Is there a place for a professional publications person in IEEE to (a) benefit personally, and (b) contribute his professional skills to benefit other members?

Once this question is answered (and I think it can be answered affirmatively), then the work of the group can begin. How do we go after the appropriate members? How do we reflect these new goals in group publications policy? What kinds of conferences do we have? How should local activities be organized? What kinds of aids should be developed (writing and speaking)? Should the aids be for in-plant training or for workshop use (or both)? What publicity means should be used to advertise meetings? How should the latest developments in the field be reviewed for the membership? etc.

If it sounds like I'm suggesting that the group start over again, then that is nearly correct. We do have a membership, we do have an organization, we do have publications. But, I see no point in pumping effort into publications improvement, into membership drives, into conferences, into local activities unless the goals are there for all to see — both those doing the work and those benefitting.

There are a number of directions the group can go. Journalism is already strong so maybe librarians should play a role. Closer ties could be established with Computers, Communications, editors of Transactions. Maybe the group should become a TAB "committee," such as Technological Forecasting and Assessment, Social Implications of Technology, Environmental Quality, etc., and act in an advisory or coordinating capacity.

The alternative is that engineers will drift back to their major field of interest and publications professionals will drift off to STC or some such.

I am not going to end on that pessimistic note. Personally, I feel there is a positive need for a professional group in IEEE on writing, speaking, (human) communication or whatever it is called. I have contributed to and drawn benefits from it in the past, and feel there is a lot more to be done. I feel the talent is there to make it work. It is a matter of organizing the available effort to move in the same direction, toward a common goal.

That goal should be to define a group that helps engineers do their job better, that helps publications professionals do their job better, and that creates a group that interested people will want to join.

NEW IEEE PUBLICATIONS (continued)

and costs of energy generation and use, with emphasis on nuclear and coal generation technology. *Part V: Social Issues — Prices, Demand Growth, and Conservation* contains representative selections on the important subjects given in its title. Several appendixes, including one consisting of a list of bibliographies, add to the reference value of the book.

This 536-page book is priced at $9.95 for the paperbound member edition. A clothbound edition is available for $19.95 (discounted to $14.95 for IEEE members).

Career Management as concerned with the advances in technology threaten the very people most responsible for such advances — engineers, scientists and other professionals — with obsolescence of their knowledge and skills. Concern about obsolescence has been manifested by an outpouring of articles, papers, conferences and seminars, but much of the written material on the problem is widely scattered and is difficult for the nonspecialist to locate and evaluate.

This book was organized in response to the need of technical professionals, and those who manage them, for an understanding of obsolescence and how it can be combated through various techniques of career management. In a series of carefully selected papers, experts in such fields as management, continuing education, psychology, and personnel present their latest thinking and guidance.

The dual orientation of the volume reflects the two levels at which the problem of obsolescence must be attacked. One level focuses on how management can most effectively create a climate that stimulates and maintains technical vitality. The other level is more personal and is concerned with how the individual engineer, scientist, or manager can combat professional obsolescence.

The 45 papers reprinted in this volume are arranged into the following six parts:

Obsolescence: The Problem and Its Causes

Managing for Technical Vitality

Continuing Education: What Management Should Know

Educational Options for Self-Development

The Information Explosion: How to Cope with It

Career Management for Individual Growth and Development

In introductory comments to each part, the Editor provides information to place the subject in perspective and to tie together the discussions in the various papers.

This 448-page book, sponsored by the IEEE Engineering Management Society, is priced at $8.95 for the paperbound member edition. A clothbound edition is available for $17.95 (discounted to $13.45 for IEEE members).

These books can be ordered postpaid from the IEEE Service Center, 445 Hoes Lane, Piscataway, N.J. 08854. Payment should accompany the order.

PC-SPONSORED BOOK TO BE PUBLISHED

A Guide for Effective Technical Presentations, edited by R. M. Woelfle of E-Systems, Inc.

Technical presentations are a vital part of almost every phase of the governmental, industrial, and academic worlds. Few engineers, scientists, managers, and other professionals, however, can draw upon formal training for the techniques needed to communicate effectively when face to face with an audience. Some individuals can prepare highly polished written material but cannot cope with the oral and visual requirements imposed by technical presentations. In addition, many individuals can easily and effectively communicate with one or a few people on a face-to-face basis but tend to freeze when required to speak in front of a large audience.

This book, "A Guide for Effective Technical Presentations", is a collection of articles that contain "how to" information for the engineer, scientist, or manager who wants to maximize the effectiveness of his or her technical presentations. The articles included in this guide address the:
a. General considerations in understanding the importance and application of presentations,
b. Planning and preparation required to develop an effective presentation.
c. Visual aid used to enhance the effectiveness of presentations,
d. Delivery techniques used to execute presentations,
e. Multimedia integration of various combinations of visual aids, and
f. Special techniques associated with motion pictures.

These articles were selected because they treat their respective subjects in a tutorial manner and describe techniques that are of practical value in solving the problems normally encountered in preparing and implementing a presentation. These articles also include checklists for selecting the best medium and equipment for specific applications. This guide, therefore, is an important tool for any engineer, scientist, or manager who values effective communications and is interested in his own professional advancement and growth.

OVERSEAS SPEAKERS SOLICITED

Reciprocal advantages accrue when competent speakers present papers to IEEE Sections in foreign countries. IEEE members in any country, contemplating a foreign trip (transatlantic, transpacific, transcaribbean, etc.) and desirous and capable of making engineering contacts of this type are invited to inform Miss Emily Sirjane at the IEEE Headquarters office in New York, who will furnish the names and addresses of Section Chairmen with whom the speaker may work out arrangements directly.

PROPOSALS SOLICITED FOR IEEE PROCEEDINGS REVIEW PAPERS

The PROCEEDINGS OF THE IEEE is continuing a policy, adopted in early 1975, of encouraging prospective authors to submit advance descriptions of proposed tutorial-review papers. The purpose of this policy is to stimulate the preparation of these highly important papers by providing a means for an author to obtain an indication of likely publication before he invests the large amount of time and effort required to write a manuscript.

The paper particularly appropriate for the PROCEEDINGS is one on a subject of wide interest that contains a strong tutorial introduction, surveys the state-of-the-art of the field rather than specific research results, is self-contained because of its inclusion of relevant background information, and concludes with an extensive bibliography for those who wish to delve into the topic more deeply. The body of the paper treats the subject in depth, including the necessary mathematics and physics, and at whatever length is required. It contains substantially more tutorial and background information, and is usually longer, than a TRANSACTIONS paper.

Prospective authors of such tutorial-review papers are urged to submit proposals to the PROCEEDINGS Editor (345 East 47 Street, New York, N.Y. 10017). Each proposal should contain an outline of the contents of the proposed manuscript, a short description of the current interest in the field of the paper, and a brief summary of the author's relationship to the field and his qualification for writing the paper. The proposal will be reviewed with the help of the PROCEEDINGS Editorial Board; if received favorably, the author will then be encouraged to write the paper. The manuscript must subsequently undergo technical review, but there will be a definite predisposition to publish it, assuming it meets technical and literary standards. Further details may be found in an editorial in the December 1974 PROCEEDINGS (page 1619).

The papers published as a result of the program complement, but are separate from, the invited review papers that have been a major feature of the PROCEEDINGS for some years.

1975 CONFERENCE PAPERS TO BE PUBLISHED IN FALL

Most of the papers presented at the 1975 G-PC Conference on Scientific Journals, together with a summary of discussion from the floor, will be published in Volume 18, No. 4 of the Transactions, due out in December. PC Group members will receive the issue in accordance with normal procedure; other conference attendees will receive a copy without charge. Any IEEE member may order a copy for $10.00; the price to others is $15.00. Orders, with payment, should be sent to Alice LeClair, IEEE Service Center, 445 Hoes Lane, Piscataway, New Jersey 08854.

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