Newsletter

IEEE Professional Communication Society

PCS Annual Report

1. Membership

PCS membership passed 2,500 as of 31 December 1984. Although we fell short of our Centennial goal (122 new members, a 5% increase), we did gain 93 new members (a 3.9% increase) by year's end. It is gratifying to note our modest but consistent membership growth at a time when many groups/societies are experiencing membership declines. We hope this growth is a result of an increased awareness of the value and importance of effective professional communication in every IEEE member's career.

Although PCS remains the 4th smallest of the five Division VI societies (only Education is smaller with 2,365 members), PCS was first in percent growth in 1984 for our Division.

We are designing new membership brochures for both IEEE members and Affiliates. While our Affiliate membership is presently quite modest (44 members, 1.7%), we are planning to increase our effectiveness in Affiliate recruiting.

Inside

Flaherty Receives Key

A high point of the special banquet concluding IEEE's Centennial Year was the presentation of the Keys to the Future. The "Keys to the Future" were presented to 34 individuals representing the Institute's 33 technical societies. Each recipient was identified as an individual in the early stages of his/her career "who best demonstrates sound understanding of the evolving technologies" in the individual's chosen field and whose "progress shows the greatest promise for applying these technologies to the development of new industrial products and systems for the improvement of society."

Left to right: Dr. Richard J. Gowen, 1984 IEEE President; Deborah Flaherty; Dr. Daniel Rosich, 1985 PCS President.

The Keys were laser cut from a three-inch silicon disc composed of 256k metal oxide semiconductor (MOS) material.

Deborah Flaherty was selected by PCS to receive this award. She received a B.A. degree from Regis College in 1979 and the M.S. degree from Rensselaer Polytechnic Institute in 1980. She is currently a product planner in AT&T Technologies' Electronic Components Division.

From the editor . . .

One of the major objectives of any professional organization is the recognition of outstanding achievement in the given field. Through its Institute Awards, the IEEE recognizes excellence in the field of electrical and electronics engineering. These recognition programs are found at all levels of the IEEE structure.

IEEE Awards serve several purposes: 1) they are an expression of recognition for outstanding contributions to the art and science of electrical and electronics engineering; 2) they are an incentive to youth to emulate excellence; 3) they are a personalized presentation to the public of the achievements of the profession and its members; and 4) they are the identification of IEEE with these achievements.

The Institute Awards fall into six categories: Medal of Honor, Major Annual Medals, Field Awards, Service Awards, Prize Paper Awards, and Scholarships. The Medal of Honor and the Major Annual Medals aim at the recognition of achievements having outstanding significance for the profession, the Field Awards recognize unusual accomplishment in a particular field of interest to the Institute, the Service Award recognizes outstanding service to the Institute, and the Prize Paper Awards recognize publications significant for their excellence. The Scholarships aim at the support of worthy superior students. Recipients of Prize Paper Awards and Field Awards may in some instances receive future major awards for the same work if time demonstrates that the work has exceptional significance.

All individual members, Societies and Sections of the IEEE are eligible to nominate candidates for awards, medals, scholarships, and prizes; and to support such nominations by submitting forms and relevent communications to the Staff Secretary of the Awards Board at IEEE Headquarters.

The date schedule for receipt of nominations for the various awards is:

Medal of Honor	—before July 1, 1985
Major Annual Medals	—before July 1, 1985
IEEE Service Awards	—before July 1, 1985
Prize Paper Awards	—before July 1, 1985

For further information and nomination material, contact a PCS officer or Staff Secretary, IEEE Awards Board, 345 East 47th St., New York, NY 10017.

I urge all members to participate in the IEEE Awards Program. It is our responsibility to see that qualified people receive proper recognition for their achievements.

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Flaherty Receives Key

In remarks to the Centennial Young Engineers, an actor portraying Benjamin Franklin, perhaps the first great electrical engineer, issued a challenge encouraging the Key recipients to follow in the tradition of excellence and innovation of their forebears, serving others with technical skills.

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IEEE Professional Communication Society

Officers

Dan Rosich, **President**
Lois Moore, **Vice-president**
Leon Pickus, **Treasurer**
Deborah Flaherty, **Secretary**

Staff

Deborah Flaherty, **Editor**

Opportunity for a Dynamic Bilateral Commitment

Communicators in industry, especially those who manage publications departments, are seeing impressive growth in contact documentation requirements. Twice this past year at our laboratory, new documentation tasks have expanded almost faster than we could staff to meet them. Sometimes it's cause for panic. As Chuck McCaleb of Lawrence Livermore National Laboratory says, "You'd better be able to recognize a bull elephant when it's staring you in the face."

From all indications, these requirements will continue to grow. End users are realizing that more extensive and reliable documentation helps to cut training costs and minimize costs of repair and replacement by ensuring effective and appropriate operation and maintenance procedures. The bottom line is (has been and will continue to be) COSTS. And customers realizing that effective documentation is not simply a nice-if-you-can-afford-it frill.

For example, a widget packaged with documentation that clearly identifies operating restrictions, design considerations, and fault isolation procedures (troubleshooting) is simply worth more in the marketplace than an undocumented widget. Effective documentation more than pays its own way. That's why customers are requiring more extensive and more sophisticated documentation.

We not only need more professionals to staff for these growing requirements, we also need a broader range of skills for new services and for innovative solutions to costing, scheduling, and production problems. This trend presents challenges to all of us, whether we work in industry or in universities.

While employers want to know that universities will produce all of the qualified graduates they will need, university faculty want to know that there will be adequate employment opportunity for all of their graduates. With some dedicated collaboration and cooperation, academics can help employers meet staffing needs while employers help academics place new graduates. Even so, striking a balance won't be easy.

We need opportunities for professionals in both groups to share their needs, goals, and plans, and to establish broader goals and plans for the professional field. That's one reason I'm looking forward to PCC 85 and the sessions on University and Industry Collaboration. Through presentations by professional communicators in both groups, we can share ideas about the special knowledge and skills needed in our field, and about various programs for mutual support. Perhaps many of us can establish contacts for developing new programs, for launching collaborative research, or for coauthoring books that will contribute to our field.

Whatever benefits such collaboration offers us individually as professionals, trying to meet the escalating demands of our positions in industries or in universities, we may find a higher and broader benefit: Our professional field stands to gain a dynamic bilateral commitment from communicators who are rising to a challenging opportunity.

—*Susan Dressel, PhD*
  Physical Science Laboratory

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Reading Faster and More Efficiently

An interesting article in *Chemical Engineering* magazine offers seven tips for increasing reading speed by overcoming bad habits and seven more for improving reading efficiency. Three of the tips for better efficiency are

1. Preview the material.
2. Read with purpose in mind.
3. Review to retain information.

The article is "How Good Are Your Reading Skills?" by Barbara Marrs, and it is on pages 185, 186 and 188 of the February 18 issue.

—*Rudy Joenk*
  Boulder, Colorado

☐

Big things may be ahead for the computer, the video recorder, even that old standby, the TV, but books will never leave us, says Librarian of Congress Daniel J. Boorstin in a recent U.S. Census Report. Because of its convenience, independence from outside power sources, and unique individualism, the book stands to remain a "fertile resource" for decades to come, Boorstin said.

—*Universal Press Syndicate*

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PCS Education: What Next? (Round 3)

A panel discussion at the October 1984 PCS conference in Atlantic City identified two opposing points of view concerning report writing as a subject in an engineering curriculum: some delegates felt strongly that the humanities should be retained as an integral part of a communications program, while others felt that the communications program should concentrate solely on developing an undergraduate engineer's skill in reporting technical information. I reported this in the January edition of the *PCS Newsletter,* and invited readers to respond. Here are excerpts from two letters I have received.

Jim Fritts writes from Rockford, Illinois:

> Both at home and at work I am daily confronted with technical people who either have or lack the humanities.
>
> My five children are all inclined to technical disciplines. There are three seniors in college, two in mechanical engineering and one in life science (two women and one man). My oldest son graduated from a two-year college and is now a computer operator. My youngest child is a sophomore in high school and wants to be an electrical engineer.
>
> She got an A in Fortran in summer school last year. Do you or any of your panel realize how much effort it takes to get an A in Fortran? These technical disciplines take brains, effort and guts. Adding courses in humanities to an engineering program is absolutely wrong.
>
> An in-depth course in technical writing is, however, a *must.* At work I am confronted with people who have taken technical writing courses and those who have not. Very often those who have not taken writing courses are aware of their shortcomings. The pathetic creatures are those who do not know that they cannot write. They are usually gently shoved off into areas where they cannot waste money and time.
>
> As far as the lack of humanity courses for engineers shows up—that is what society will have to live with.
>
> I pushing my children into traveling (as I have in the past). I figure that if they walk through enough old castles, cathedrals and the like, maybe something will rub off on them.
>
> Any veneer of civilization an engineer acquires will have to be done outside of work and school.

A second view came in from Dr. William Kniskern, who teaches technical communication at Red River College:

> It should not be necessary to teach humanities in a Technology program. Every person with a secondary education should be familiar with the principal figures and events, ideas, and works of history, philosophy, and literature (to name only three major branches of the humanities). But, then, educational values have progressed over the last two decades and my views, I realize, are antiquarian at best.
>
> The goal in education at present (if I remember the jargon correctly) is to enable students to adapt to, and function in, society (which, I am told, is ever-changing, and rapidly at that). I think this probably means that education should prepare students for jobs; that is, it should enable them to participate in the process of production and consumption.
>
> Clearly, then "history," to quote Henry Ford, "is bunk." What need have we to understand the origins and trace the evolution of our ideas, our institutions, and our culture? What is ancient Greek art, philosophy, literature, and architecture to us? What can we learn from the rise and subsequent decline of the Roman Empire? Surely the development in the Middle Ages of modern nations out of feudal fiefdoms has nothing to teach us (perhaps there is a strained parallel with the emergence of, and struggles among, ever-growing multinational corporate powers, but so what?). What need have we to know what greatness mankind is capable of, or into what barbarity it can sink? "History is bunk."
>
> So, too, is philosophy. It asks us to question everything, particularly our values. And, as everyone knows, because these questions have no answers, they ought not to be asked. Indeed, how could we have developed hydrogren bombs and agent orange, stripped forests, destroyed wildlife, and polluted lakes and the air if we had stopped to ask useless questions? The "real" question in today's "real" world is: What is the bottom line$

How Does This #%¢@! Thing Work?

No matter what happens, do not look at the manual.

"You press the button, we do the rest." That marvelously simple slogan helped sell millions of Eastman Kodak cameras starting in 1888. Today, however, the owner of a new video cassette recorder or some other electronic wonder must turn to an instruction manual to get his machine working. But that is often when the trouble begins: the consumer opens a booklet to find a compilation of jargon, gibberish and just plain confusion. "There is a major disease in this country called wall-stare," says Sanford Rosen, president of Communication Sciences, a Minneapolis consulting firm. "When people read a computer manual, they just want to put it down and stare at the wall for as long as possible."

Bad instructions are bad business as well as a torture to read. A maddening manual can cripple sales of products that might have been successful. Coleco lost $35 million in the fourth quarter last year partly because people flocked to return the initial version of its Adam computer, which the company offered for $600. In a statement to shareholders, Coleco blamed much of the consumer dissatisfaction on "manuals which did not offer the first-time user adequate assistance." Observes Joseph Sugarman, president of J S&A, a mail-order house that specializes in high-tech merchandise: "Very often, items with the highest rate of return are those where customers are frustrated with the instructions." Coleco has reintroduced the Adam computer, complete with a new instruction manual.

Directions for hooking up and operating video cassette recorders can be particularly maddening. A frequent mystery is how to connect the machines to television sets and antennas. Owners must often pick their way through mazes of diagrams and technical terms like "One-touch type F connector" that seem to have been written for licensed electricians. Some manuals compound the confusion with illustrations that differ from the actual machine. Notes the 46-page booklet for a Panasonic OmniVision model: "Please be assured that this difference is not due to mistake but to ongoing product improvement."

Fortunately, better manuals may be on the way. Leading technical schools like Rensselaer Polytechnic in Troy, NY, and Pittsburgh's Carnegie-Mellon have writing programs that teach students how to translate complex facts into clear directions. Enrollment in the classes is high, and instructors say that the corporations have been snapping up their graduates.

But for now, at least, many consumers are likely to continue to find operating booklets more frustrating than enlightening. Indeed, some may feel like twisting the famous bromide "If all else fails, consult the manual" into a new admonition: "No matter what happens, do not look at the manual!"

—By John Greenwald
—Reported by Dorothy Ferenbaugh, New York and Carol Flether, Chicago

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Computer Writers Announce Electronic Clearinghouse

An electronic clearinghouse for writing assignments and an electronic distribution system for news releases were recently announced by the Computer Press Association (CPA), a new organization representing freelance writers who specialize in topics related to computers.

The association offers the services of The Source, an electronic information and communication system for personal computer owners supplied by Source Telecomputing Corporation, a subsidiary of The Reader's Digest Association, Inc.

The clearinghouse allows publications, which pay a per-use fee if they are not CPA members, to post announcements of available writing assignments to which writers can respond. The news release system allows news sources to distribute releases electronically to freelance writers, many of whom work out of their homes and are often not reached by releases sent out by conventional means.

To use The Source, members, publications, and news sources will need a personal computer and a modem linking their computer to a telephone line. The one-time sign-on fee and the minimum monthly use fee are waived for CPA members, but members will still have to pay a monthly storage fee and the hourly usage fee.

Information can be obtained from Barry Bayer, CPA secretary, P.O. Box 1506, Homewood, Illinois 60430.

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PCS Annual Report
(continued from page 1)

PCS has proposed major modifications of our TIP (Technical Interest Profile) which we believe will better serve the Institute's membership. A membership drive is planned once the new TIP categories are formally approved and in place.

2. Conferences

Since 1981 PCS has held an annual conference. While we have drawn many specialists in professional communication both from within the IEEE and from the professional/engineering communication community at large, we have been somewhat less effective in attracting the more numerous IEEE-member engineers, computer scientists, and engineering managers.

Approximately half our attendees are IEEE members. We are exploring approaches both to developing a greater IEEE member presence and to recruiting our non-IEEE member attendees as PCS Affiliate members.

Our 1985 Conference will be held from 16-18 October in Williamsburg, VA. Future conference sites include: Charlotte, NC in 1986, Winnipeg, Monitoba (Canada) in 1987, Seattle, WA in 1988, New York, NY in 1989, and London, England in 1990.

The annual conference has been a catalyst in reshaping and redirecting PCS. Increased membership involvement in many PCS activities is a direct result of conference attendance and participation. We expect our growing conference attendance will continue.

3. IEEE Transactions on Professional Communication

Dr. Valarie M. Arms of Drexel University has assumed the editorship of the *IEEE Transactions of Professional Communication* effective 1 January 1985. An expanded editorial advisory board is being organized and we expect this group will prove a valuable resource in improving the quality and scope of both our *Transactions* and our annual conference.

Several special topic issues are planned through 1987 and we look forward to potential collaboration and active involvement with other IEEE entities. We especially welcome suggestions for special topic issues and nominations for guest editors.

4. Finances

Our finances remain stable—modest but real cost increases effectively offset our modest gain in membership. Much of our annual budget reflects the costs of producing and distributing the *IEEE Transactions on Professional Communication,* costs over which we cannot exercise any real control.

Our annual conferences have provided a new source of income which was unknown prior to 1981. We readily envision conference income as a critical resource in our future. Yet another potential income source may be PCS's share of royalties from PCS-sponsored IEEE Press books.

We are keenly aware of the need to develop new sources of income and we are exploring several avenues. We anticipate our long range financial plan to be completed by late summer and to be discussed at our annual Administrative Committee meeting in October 1985.

5. Acknowledgment of Support

The accomplishments of the Professional Communication Society in 1984 were the result of an exceptionally dedicated corps of committeee chairmen, member volunteers, and officers. I would like to thank each of these PCS "activists" for their loyal support and devoted efforts. It is a testament to their efforts that PCS remains a fiscally and intellectually viable Society.

—Dan Rosich
  PCS President

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West Coast Members Seeks Regional Activity

Administrative Committee member Lacy R. Martin, publications manager at Amdahl Communication Systems, Los Angeles, is still seeking more names and addresses of local PCS members who would like to help initiate some regional and local activities—meetings, seminars, newsletter, etc. He thanks those who have contacted him thus far.

West coast PC-ers interested in participating in such projects or others like them are urged to communicate with Lacy at Amdahl Communications Systems, 2500 Walnut Ave., Marina del Rey, CA 90291; (213) 822-3202 (W), (213) 215-3844 (H).

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IBM Appoints PCS Representative

The International Business Machines Corporation has appointed Rudy Joenk as its official representative to the IEEE Professional Communication Society. IBM has official representatives to 66 professional societies around the world. This appointment emphasizes IBM's interest in technical communication.

Rudy is a long-time member of PCS, is currently on the Administrative Committee, and is chairman of the Editorial Advisory Board. He was editor of the *Transactions* for eight years and editor of the *Newsletter* for two years. At IBM he is on the laboratory director's staff in Boulder, Colorado, where he is concerned with engineering vitality issues.

As IBM's representative, Rudy will work to promote good relations between IBM and PCS, encourage participation by IBM employees, inform IBM of IEEE PCS matters that might affect it, and speak on behalf of IBM when appropriate. IBM employees interested in establishing informal and on-going communication with Rudy about PCS and technical communication are asked to phone him on internal tieline 263-6041 or use the computer network ID JOENK at node BLDVM3.

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There seems to be a heresy abroad in the land today that if thinking doesn't produce a satisfactory volume of bright, new ideas, it just isn't creative at all. A rather alarming manifestation of the present preoccupation with the new idea is something called "brainstorming", a technique of idea-hunting by the conference method and a practice that is regarded fondly by advertising people who lay some claim to its origination. Defined by the dictionary as "any transitory agitation or confusion of mind", brainstorming is a sort of seance wherein a group of people contemplate a proposition and they say the first thing that pops into their heads. According to the rules, no one should evidence any reaction to anything that is said, since to ask a man if he has lost his mind is liable to inhibit him and dry up the wellspring of bright, new ideas. On the contrary, all remarks are respectfully recorded and later studied on the possibility that a new idea might be lurking in the accumulation of unsystematized, free-association expression. Maybe there is. And then again maybe not.

Helpful Hints on How to Put Words Together

Striving to put individuality in one's writing often results in ponderous verbiage. Force, grace, and clarity can be produced, however, by following a mere handful of principles.

1. Be yourself
Style is not added, like syrup over ice crean, with big words or by mimicking someone else's writing. Style is simply the "flavor" of your own writing, which evolves only with *practice*.

2. Be clear and concise
Short words and short sentences usually make a much stronger point than long words and sentences, because these often mask the message.

3. Let nouns and verbs do the talking
Stong, explicit nouns and verbs do the useful work in a sentence. Strings of adjectives and adverbs are usually superfluous and often turn out to be redundant as well.

4. Be correct
Bad grammar, spelling, and punctuation cause a loss of credibility.

5. Write mostly in the active voice
Using the active voice eliminates doubt about your meaning and produces a vivid picture in readers' mind.

6. Stick to the main point
Extra phrases, clauses, and ideas can lead readers astray, like forks in the road.

7. Write with the ear
Alliteration, metaphors, and similes *may* give power to prose, or they may muddy the message. Listen to your writing read aloud before you declare it finished.
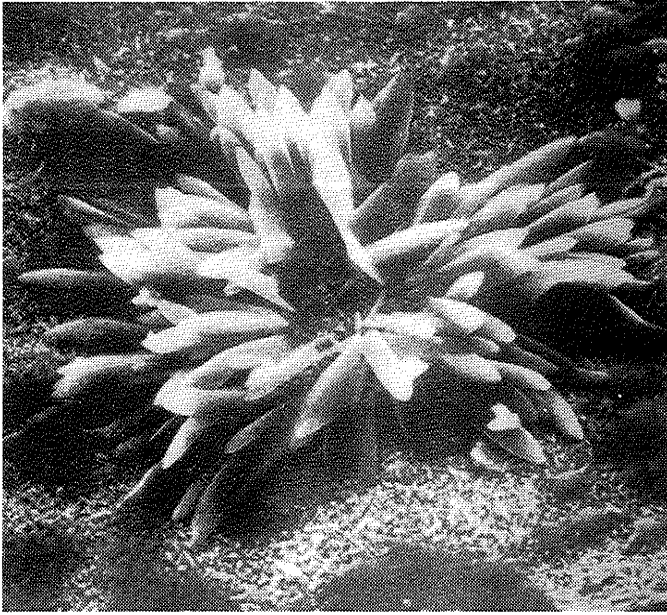
8. Revise, revise, revise
Rereading catches errors and revising shortens, tightens, and eliminates points that are pointless. Writing it right can be considered a social act, a neighborly obligation to the reader.
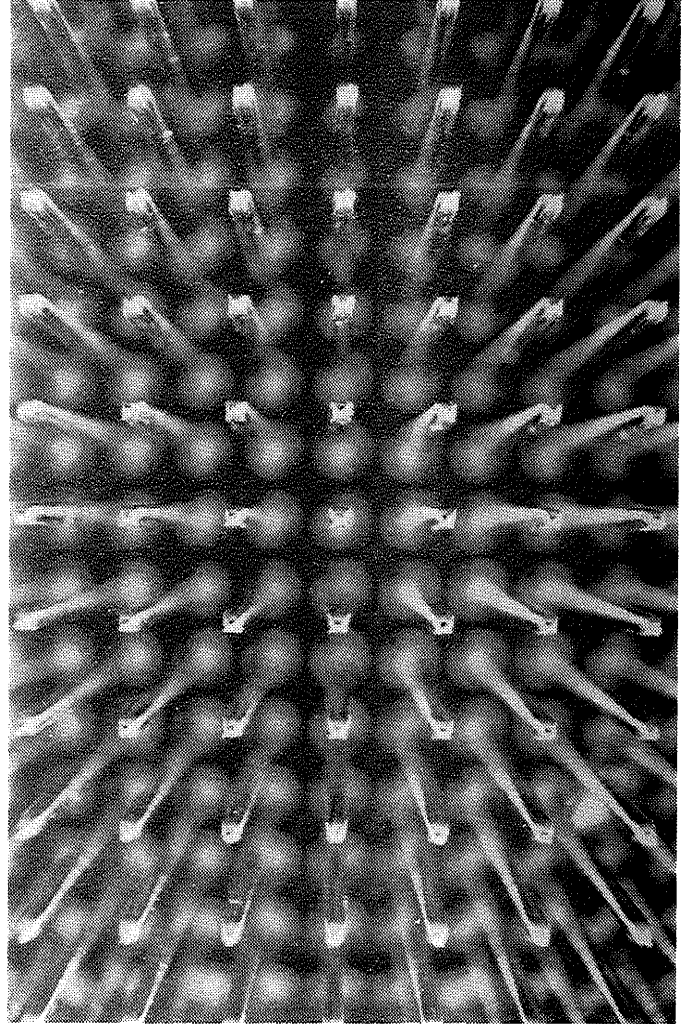
—Rudy Joenk
  Boulder, Colorado

Condensed from U.S. News & World Report, *February 18, 1985, p. 58, by Lucia Solorzano; copyright 1985 by* U.S. News and World Report.
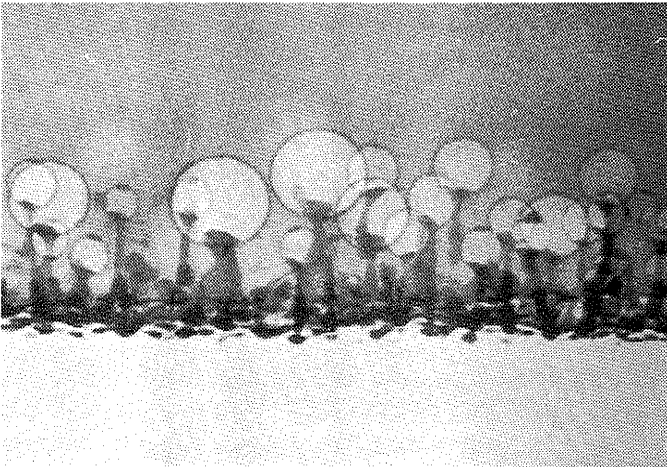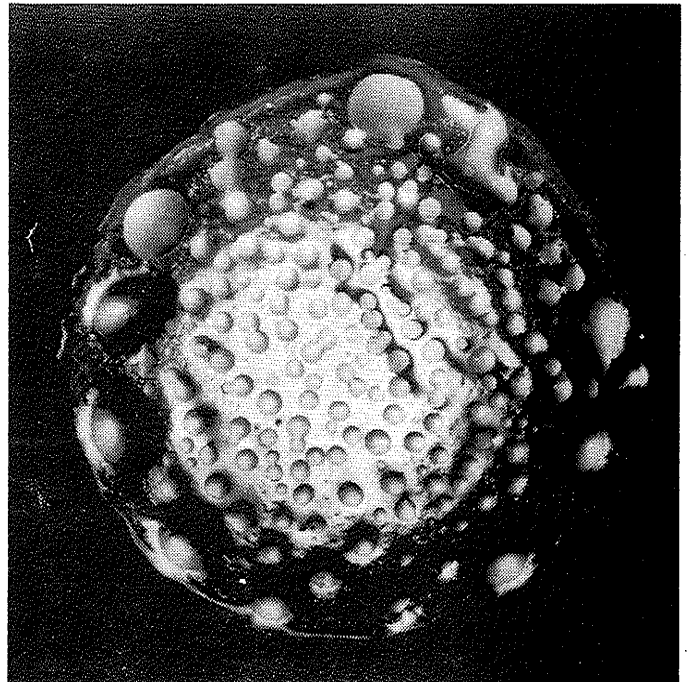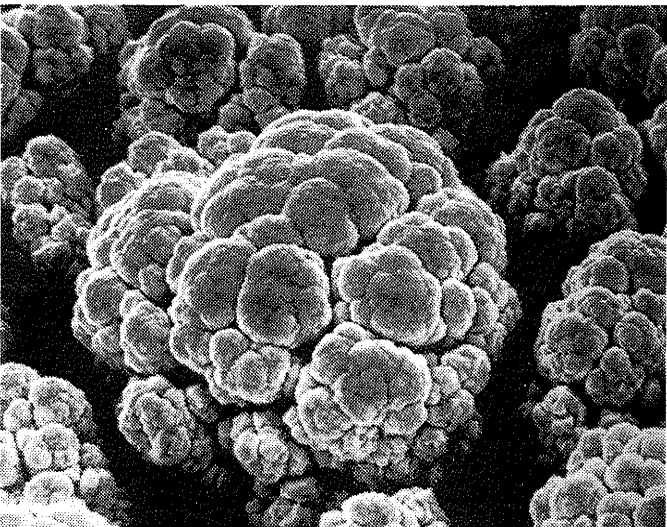
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High-Tech Art

The world of a high-technology photographer is a strange one indeed. What appears to be a serving of a raw cauliflower is in reality cluster of electrodeposited gold. These photographs are from "MicroScapes: The Hidden Art of High Technology," an exhibit of photographic images of microelectronics and lightwave communications touring the country. The exhibit was put together by AT&T Technologies.

These and about forty other photographs can be viewed at the University of Nevada, Las Vegas from March 19-April 21; Reading Public Museum, Reading, Pennsylvania from May 11-June 23; and Midland Center for the Arts, Midland, Michigan from July 13-August 25.

And what do these nine photographs represent? See how many you can identify.

1. Sulfur Crystals

An epoxy-glass printed circuit board was treated with sulfuric acid. Sulfur-containing residue crystallized in anemone-like formations. *Robert Woods, AT&T.*

2. A Tungsten Silicide "Garden."

The silicon wafer shown here in cross section was first covered with a layer of tungsten, then heated with a laser beam. Plant-like structures of tungsten silicide are all that remain of the surface layer. The laser heating experiment was part of ongoing studies of ways to improve integrated circuit manufacturing processes. *George Sheng, AT&T.*

3. Gold Flowers

Electroplated gold on connector pins should be smooth, not rough and irregular as in this test sample. The flowerlike features are a result of current density variations during electroplating. *Robert Woods, AT&T.*

4. Connector Pins

A head-on view of some of the 10,000 pins on a connector for complex electronic equipment. A computer-controlled system has aligned the pins with an accuracy of 9 thousandths of an inch so that the connector can readily be inserted in the receptacle on a circuit pack. *Charles Lewis, AT&T.*
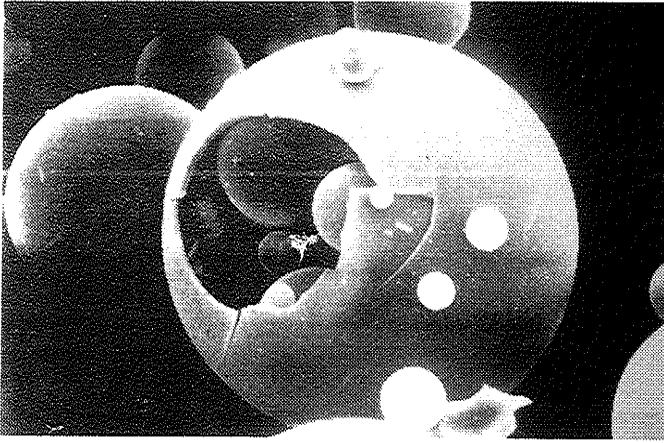
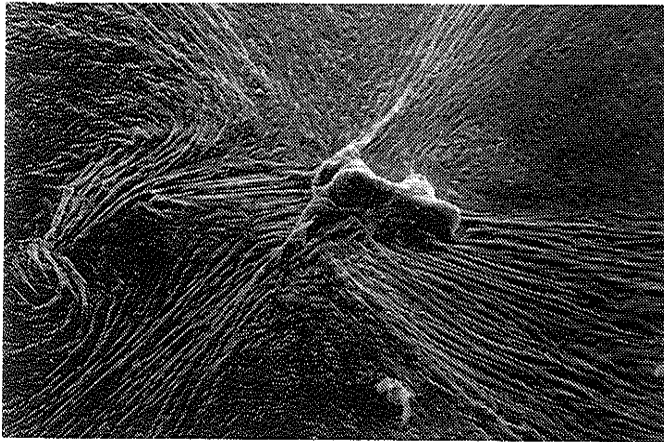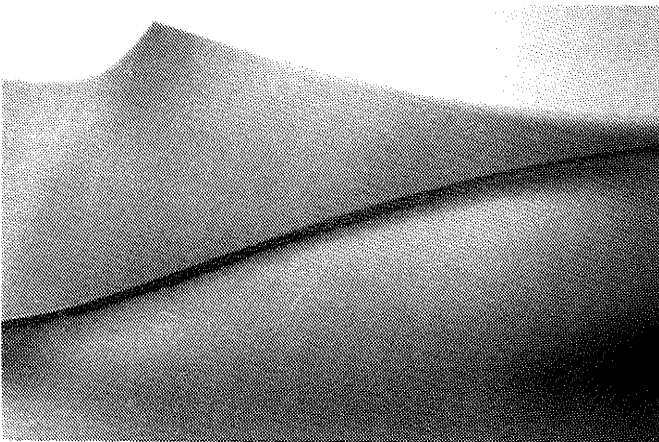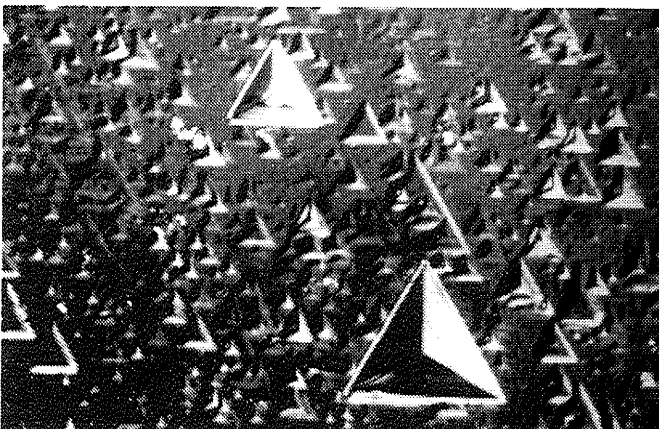## PCS Education
(continued from page 4)

Easily the most frivolous of all of the humanities is literature, the purpose of which is to provide entertainment and escape for those who lack the courage or the ability to function in the real world. Only professors of literature would be shameless enough to admit to having read Homer, Shakespeare and Milton; and only they would presume to suggest that from each they have learned much about the human condition.

If the humanities are not taught in the high schools, why should they be taught in Engineering and Technology programs? (And, in the same vein, if students have not learned how to write in high school, why should they be forced to learn how to do so at any other stage in their education?) I admit that Engineering and Technology students are overworked, and I have a great deal of admiration for their preserverence and dedication. To add humanities to their programs would require that their time at university or college be extended.

But why bother at all? As anyone who has studied the humanities at length knows, a lifetime is not sufficient to fully master even one small corner of a single discipline. It would be better, then, to leave it alone altogether and get on with the business of developing a technology that will answer our highest needs and aspirations: to stay warm and well-fed.

Rather than comment on or add my own views to these two letters, I am opening the door to *PCS Newsletter* readers: drop me a line with your views, supporting, disagreeing with, or adding another dimension to these writers' viewpoints. I'll be glad to print them in the next edition of the *PCS Newsletter* (providing our editor has sufficient space available). Send me your comments to: Box 181, Postal Station C, Winnipeg, Manitoba, Canada, R3M 3S7.

—Ron Blicq
  PCS Education Chairman

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You sometimes wonder how experts can differ so sharply and so publicly.

EMS and PCS Get Together in Denver

Denver-area members of the Engineering Management Society and of the Professional Communication Society held a joint meeting on February 13 at the Quality Inn in Denver. The meeting was an endeavor on the part of Michael Foley, who is subgroup-committee chairman of the Denver section of the IEEE, to increase local participation in IEEE activities by exploring topics of mutual interest to the two societies.

The topic at this meeting, which was preceded by socializing and dinner, was "If It Weren't for All Those Other People, I Could Get My Work Done!" The speaker was John Van Vleet, vice-president of Susan Van Vleet Management Consultants. His theme was the importance of interpersonal communication in successful business relations.

Attendance was 20—better than expected for a first attempt at a new series of meetings. The next get-acquainted meeting will be in May and a meeting to organize will be called in September. For pre-meeting information, phone Professor Michael Hayes at the University of Colorado-Denver College of Business, (303) 623-4436, or Rudy Joenk, (303) 447-6041. Announcements will be published in *Western Engineer*.

—Rudy Joenk
  Boulder, Colorado

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The Ultimate In Graceful Rejection Slips

"A British writer's submission to a Chinese economic journal, according to *Los Angeles* magazine, was returned with the following cover letter: 'We have read your manuscript with boundless delight. If we were to publish your paper, it would be impossible for us to publish any work of a lower standard. And as it is unthinkable that, in the next 1,000 years, we shall see its equal, we are, to our regret, compelled to return your divine composition and beg you a thousand times to overlook our short sight and timidity.'"

—Media Industry Newsletter

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Time Management Tips

1. Gather your facts. Don't jump to conclusions. Make sure your facts are accurate and reflect the whole problem. Learn how to determine what facts are critical to accurate decision-making. Make sure critical facts are easily accessible and always accurate.

2. Listen carefully. Make sure you understand what others want you to do. Keep an open mind to take advantage of the experiences of others. Use this information to avoid learning things the hard way and to modify your decisions to avoid obvious pitfalls.

3. Use resources wisely. Whether it's the computer, the newspaper, an experienced colleague or a nosey neighbor, find the most efficient way to get information you require. "Let your fingers do the walking"; the computer do the calculating, the newspaper do the bargain hunting. Search out information pockets which will reduce your time and increase your success.

4. Keep an accurate calendar, suspense system and resource file. Don't spend precious time remembering or forgetting. Jot down ideas, time schedules, names and places and organize for easy reference.

Use a calendar, business resource file, telephone address book and suspense system for your business and personal activities. Use a follow-up system for complex or critical activities to provide midcourse correction, accurate project reporting or performance feedback.

5. When your TIME is being shared with others, your skills in interpersonal communications become critical. Do others understand your ideas or instructions? When you need the help of others to get something done quickly, can you get help? Do you ask questions or elicit feedback that helps you use your TIME more effectively. Are you a good team worker sharing critical information in time to promote successful project completion?

6. Set your priorities. Make sure your TIME is being used for activities which provide for your greatest happiness and success. You can't do everything. Spend a few minutes every day listing your activities. Rank order (A, B, C) each activity so you can focus on the most important things to do today. Use your calendar or suspense file to supply this information.

7. Estimate time requirements accurately. Accidents and errors are often caused when too much is to be done in too little time. Group like-activities together. Use your slow-time to read or organize materials for busier periods. Try to piggy-back activities—read professional journals while riding to work, do all your errands in one trip. If necessary, do a time study to determine how long it really takes.

8. Know yourself. Are you an AM or PM person? Do you maintain an orderly filing system or does it take you *some* time to locate what you need? Do you prefer to learn by reading, talking or doing? What are your TIME wasters? Do you indulge yourself in excessive detail, hasty decision-making, lengthy conversations, unobtainable standards? Difficult jobs which are unpleasant for you should be subdivided or scheduled so they are done and not avoided.

9. Establish ways to eliminate Time-Wasters. Make checklists for routine or complex projects. Establish standards and procedures for repetitive tasks. Don't re-invent the wheel—use procedures currently established. Establish regular opportunities for information exchanges—weekly family meetings, daily reports, staff meetings.

10. Make sure you are really finished. Don't let time constraints force you to leave projects half-done or to eliminate critical activities. Remember proper documentation, cross-training and training reduces future time-wasters.

—Diane Clarke-Kudless

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> In the long run, if you can't find motivation in your own ideals and your own system of values, you'll never find a keen and satisfying motivation anywhere.

Newsletter Deadline

Articles, news, and comments for publication must reach the editor by the following dates:

Issue	Deadline
July	May 25
October	August 24

Send your contributions to Deborah Flaherty, AT&T Technologies, One Oak Way, Rm. 3WC110, Berkeley Heights, NJ 07922.

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High-Tech Art

5. Corrosion Pits

Solder fluxes are rated in low, moderate, or high categories of corrosive activity on the basis of tests on copper films. Here, a flux has etched minute craters in a copper film. Tests such as this aid in selection of fluxes and in development of flux cleaning processes. *Charles Lewis, AT&T.*

6. Glass "Eggshells" Strengthen Printed Circuits

Hollow glass beads—and beads within beads—are added to epoxy resins to make them stronger when they are molded into printed-circuit boards. This image was made for a study of the size distribution of beads and its effect on the characteristics of circuit boards. *Robert Woods, AT&T.*

7. Silicon Whorls

Looking like a vast hurricane as viewed from a satellite, the surface of this silicon wafer has been irradiated by a laser beam. The whorls and striations were caused by vaporization and resolidification of the surface material under the influence of the laser energy. Such experiments are aimed at an improved understanding of the properties of materials. *Robert Woods, AT&T.*

8. Insulating with an Oxide

A layer of silicon dioxide rests atop a silicon bipolar digital integrated-circuit chip. The silicon dioxide isolates transistors in the chip from each other electrically so that they can be packed more closely together and can perform at higher speeds. The peak at the top in this cross section is a characteristic feature of the dioxide layer called a "bird's beak." *George Sheng, AT&T.*

9. Pits on an Arsenic Crystal

Triangular depressions in this single crystal of arsenic were formed by vaporization in a study of the properties of the element. Arsenic, along with gallium and aluminum, is a key constituent of semiconductor devices such as injection lasers and light-emitting diodes. *Clifton Draper, AT&T.*

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Some Words From The Division VI Director

Greetings. This is in part a response to a lament that we have not had a Division VI Director's column for 10 years. (After reading this, you may decide it was better that way.) More to the point, there are things that I want to share with you.

In my IEEE wanderings over the last dozen or so years I've found a fairly broad non-awareness of what a Division Director does (maybe nobody cares?). What you see in "The Institute" is sometimes overwhelming in its reference to various Boards, Committees, Councils, and other entities, with an endless array of acronyms, and limited insight toward figuring out who the players are. The rest of this essay will be a sort of diary of my 7 days at the February Board of Directors' (BoD) and related meetings.

[Technical note: I am writing this as the meetings progress, on a TRS80 Model 100. At home I'll upload it to my IBM PC, do some cleanup editing, and print it. For Editors: I can ship it to you on IBM PC/DOS 1S or 2S 5.25" diskette, or via IEEE Computer Society's Compmail+.]

By the time you see these words you should also have received "The Institute's" account of the events. It may be of interest to compare them.

Tuesday. Arrived in Houston in time for USAB (US Activities Board) dinner meeting. Adjourn 11 pm. I'm 1 of 3 Division Directors appointed to the USAB, plus the 6 US Regional Directors, and several appointees.

Wednesday. USAB all day. After supper: Review "new" USAB material received at meeting. Any surprises? Information to be shared, forgotten, presented at later meetings, other action? Next, finish reading 2 3-ring binders of agenda references for TAB (Technical Activities Board) and TAB OpCom (Operating Committee—really TAB's executive committee) for tomorrow. Next, start agenda for my Division meeting tomorrow night.

Thursday. TAB OpCom all day. Then, dinner meeting of Division VI Committee—the 5 society presidents. We finished early (10 not 11 pm) partly because 2 presidents were not represented. Extra phone/mail work when I get home, to get the absentees on board.

Friday. TAB agenda looks short, simple—still took all day. An item I consider important comes late in the

agenda, after several people have already headed for the airport. Then mini-disaster—someone innocently asks about Quorum (I talked to him about it later). Now we can only talk about the issue, can't vote anymore. Finally clean everything up in time for supper.

Whee . . . no more meetings for me for about 24 hours. Next is TAB OpCom dinner meeting Saturday night. Still have a bunch of stuff to read, but should have time to sightsee Houston tomorrow. The BoD's Executive Committee meets tonight and tomorrow, but that's mostly IEEE corporate officers, not regular Directors. We get their agenda and minutes but only attend by specific invitation.

Saturday morning. Rain, distant thunder. My sightseeing will be limited to the 200 Galleria shops in the hotel complex. (Beware of shopping complexes that display no prices whatever.) Finally bought another computer book, Jack Emmerichs' "The Programmer's Toolbox," $19.95, Dilithium Press. A well put together collection of BASIC routines and methodologies for program development and specific application needs. I recommend it, but not for the novice.

Saturday evening. Back to meetings. TAB OpCom was informal—discussed goals, philosophies, perspectives, needs, problems; status of individuals societies; ideas which have worked, failed, new ones to try; relationships with other IEEE entities; how best to serve the Society members (TAB's constituency), the general needs of the Institute, and the profession. Very worthwhile—we don't usually have time for much of this—good chance to get to know our fellow TAB members a bit better.

Sunday, 7 am! Breakfast Meeting of IEEE representatives to the AAES (American Association of Engineering Societies). I wanted to find out more about IEEE's activity in this. All 3 IEEE Presidents were there (Past, Current, Elect—theirs is NOT an honorary job). Also IEEE's Executive Director, 2 IEEE VPs, and 3 other Division Directors.

Sunday, 9 am. Board of Directors. Got through quite a bit of the agenda. Evening: BoD Reception and Dinner hosting Houston area section and chapter officers and spouses. Short talk by President Bud Eldon, then Q&A session mostly on local concerns, plus Hq assistance, and related matters. Next a short break, then another informal TAB OpCom meeting, mostly on relationships with non-IEEE technical organizations. Quit at 11 pm.

Monday. Wrap up BoD agenda. Home stretch fever—actually finished by 11 am! Surprise, can't change "EXC" class plane tickets except with week's notice—but odds look good on standby. I should be home Monday night instead of Tuesday afternoon. Lots more paper to carry home than I brought.

This narrative must stop here, if I'm going to get it mailed to meet the newsletter deadline. But, one note I want to emphasize: All of the volunteers as well as the IEEE Hq staff are sincere, dedicated people focused on the best interests of IEEE and its members. The structure of IEEE is complex and cumbersome, and making things happen is often a tedious and frustrating effort—always compounded by the varying perceptions of "best" held by each of us. The process does work. IEEE is flourishing, moving forward, and serving its membership well, with a great deal of individual effort helping to make it happen.

Best wishes to you all.

—*Charlie Stott*

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Did You Know

There are over 400,000 words in the English language; the average person knows or can use less than three percent of them. Even journalists are able to use only about 20,000 words, only five percent of the total number.

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For generations, buoyant young men, at about age twenty, have been reaching these conclusions: (1) that all work can be cleanly divided into either creative-directive work or detail work; (2) that they are unmistakably creative-directive types, qualified for impressive earnings and blithely confident that there will be plenty of people available who will be content to support their efforts and "handle the details"; and (3) that creative work is for smarties while detail work is for squares. Now, consider that striking anomaly of the college graduate who is an inexcusably poor speller. At some time in his career he formed the conclusion, and was not disabused of it, that because spelling is a detail of education, it is not important enough to bother about. Rather late in the game he discovers that the shortcoming is not one that can be solved merely by "looking it up" since, because he has never taken the trouble to learn the rudiments of spelling, he has difficulty even in entering a dictionary. The result, allowing for the contradiction in terms, is an educated illiterate.

User-friendly Correspondence

Writing effective business reports, proposals and letters takes a little know-how. Many of these communications have become less formal and more conversational because business is beginning to recognize that doing business does not preclude the fact that real human beings actually talk to other human beings. For example, letters are now (to quote a computer term) "user-friendly" and sound natural. The guideline is simple: If you wouldn't say it, don't write it.

When you want to project a competent image, you can do it if you use contemporary phrasing. In fact, it is even better. Hackneyed sayings or old-fashioned cliches are absolutely and positively out. And so are redundancies like "absolutely and positively." One of these will do, since both mean the same and identical (here we go again) thing.

For example, does this sentence belong in the 1980s?

"Attached hereto, please find a memo pursuant to inviting the esteemed professor Dr. White to deliver a lecture on the date of our conference. Trusting you will read this ..."

Slightly exaggerated? Maybe. No reader wants to wade through such gibberish. If you can barely read it aloud, look for another way of saying it.

"I'm enclosing a memo about inviting Professor White to speak at our conference."

Not only does the second version sound like an actual person wrote it, it gets rid of all that excess verbosity (or shouldn't I say wordiness?). It has a streamlined design, contemporary style.

Since every designer has tools, here are a few in the form of three questions to ask yourself to help you design your writing:

Why am I writing this? The purpose should begin with a verb: to sell, to explain, to ask for something. Do not write it unless you are asked to state a goal, but keep it in mind as you work.

Who will be reading this? Who your audience is bears directly on what or how you write, since you are trying to make certain points. What kind of response do you want?

What do I need to say? The points you describe should support your purpose and be aimed at your audience.

Once you get the facts and write a draft, there are even more questions, concerning focus and image. In a sense, you are functioning as an editor.

- Is it complete? Check for omissions and consistency.
- Does it sound like it is written by a person or a machine? (Of course, if writing by machine is what you are after, reverse the question.)
- Is your topic clearly targeted?
- Is your work logically organized?
- Is it clear, concise and free of jargon, or does it have big, impressive and confusing words? If you must use the language particular to an industry or topic, go ahead. But, at least know better, and try to keep such usage as minimal as possible.
- Will the reader lose face or be put off in any way? If so, your effectiveness will be diminished.
- Is it "letter-perfect"—grammatically and typographically correct?
- Are the message and the professional image being conveyed the way you would like? Besides tone, correspondence must look good.
- Are there any redundancies, out-of-date language, wordiness, or stiff, "please-be-advised" phrases that sound as if they belong in a law book?

A design is not a design, however, unless the form is in some kind of order. In this sentence, for example, the repetition works for emphasis. If it is overdone, though, the impact will be lost. Structure will help you organize your thoughts into words. Here are some basics:

Develop your paragraphs. The first and last sentences are the most likely to be remembered. Usually, the first gives some clues on what the paragraph is about, and the last sentence either sums it up or acts as a transition to the next paragraph.

Organize your paragraphs. What follows what? Paragraphs, like sentences, should flow from one another. They need to be clear and logically ordered. No reader wants to be jarred. Some common structures are:

- Chronological: Information is presented in order of occurrence.
- Ranking: Go from most to least important, or the other way around. Ranking is good for listing such things as recommendations, and if often used in persuasive writing.
- Discuss a problem: State the problem, analyze the factors, cause and other pertinent elements and then

offer solutions, if any. Ask for input when appropriate.
• Look at pros and cons: State the options, then discuss each advantage and disadvantage. Close with the option you select and why.

Now comes the dessert—adding that certain polish. Getting down to specifics does not mean examining every word under a magnifying glass, but it does demand some attention to detail. These tips should help:

• If one word will do, use it. For example, instead of *at the present time,* use *now.* It is more compelling. *Soon* is better than *in the near future.* Do not use *the reason is because.* Just write *because.* Rather than *invisible to the eye,* use *invisible.* Everyone knows vision is through the eyes. The same applies to a *qualified expert:* The person has got to be qualified in order to be an expert. And never use *personal opinion.* All opinions (except expert) are personal. *Opinion* is fine.
• Use action verbs. They add more zip. Instead of *are going to,* use *will. Decide* rather than *make a decision.*
• To personalize a letter, you can use *you* or *your* instead of *we* or *our.*
• The English language is one of the most complicated. Although *affect* means influence or cause, *effect* refers to the actual result. *Assure, ensure* and *insure* might be interchangeable, but *compliment* is to praise and *complement* is to complete. Follow up with the dictionary to check your usage. (*Follow-up,* as in a *follow-up report,* has a hyphen when *follow-up* is not used as a verb. Whew!)
• If you are answering a letter, it is a good idea to have it in front of you for easy reference.
• Salutations should be as specific as possible; however, certain salutations are acceptable even when specific information is unknown. For example, initials such *R. A. Brown* could mean male or female, so *Dear R. A. Brown* is acceptable, as is *Dear Leslie Brown.* Also acceptable are salutations according to title (*Dear Director of Advertising*), company name (*Dear ABC Nut and Bolt*), or classification (*Dear IRA Investor*).
• Contractions like *can't* are fine on occasion in formal business writing, but do not go overboard, especially with *can't.*
• Have standard letters or reports on hand to use as guides. Some letters can be copied almost word for word.

Books on effective written communication are everywhere. If you are in the market for one, make sure it is current. Look at the style. Do you like it? If so, it probably is a good investment.

Amid all the technique, however, do not lose your personal touch. Writing can be inhibiting if you ponder every word. Just write; let it flow naturally.

Later, you can fix it up.

—Adele Greenfield
Free-lance writer and consultant
Reprinted with permission from The Exectuive Female, *publication of the National Association for Female Executives, 1041 Third Ave., New York, NY 10021.*

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Writer's Resources

What follows is a personal selection of English-usage/technical writing guidebooks that I have found quite helpful and enjoyable. What are your favorites? Please send your comments to the editor.

A Manual of Style, 13th ed. The University of Chicago Press, Chicago, Illinois.

Better Letters: A Handbook of Business and Personal Correspondence. Jan Venolia, Ten Speed Press, Berkeley, California.

Dos, Don'ts & Maybes of English Usage. Theodore M. Bernstein, New York Times Books, New York, New York.

Getting the Words Right: How to Revise, Edit & Rewrite. Theodore A. Rees Cheney, Writer's Digest Books, Cincinnati, Ohio.

Handbook of Technical Writing. C. T. Brusaw, G. J. Alred, and W. E. Oliu, St. Martin's Press, New York, New York.

Technical Reporting. J. N. Ulman, Jr. and J. R. Gould, Holt, Rinehard and Winston, Inc., New York, New York.

The Associated Press Stylebook. Howard Angione, Editor, Lorenz Press, Dayton, Ohio.

The Careful Writer: A Modern Guide to English Usage, 3rd ed. Theodore M. Bernstein, Athenium Publishers, New York, New York.

The Elements of Styles, 3rd ed. William Strunk, Jr., and E. B. White, Macmillan, New York, New York.

—Deborah L. Flaherty

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New Books of Interest

History of Technology Series

In 1980, the London Science Museum and Peter Peregrinus Ltd. established a joint publication venture in the form of a history of technology series edited by Brian Bowers of the Science Museum. Four books have appeared in the series: P. H. Sydenham, *Measuring Instruments* (1980); V. J. Phillips, *Early Radio Wave Detectors* (1980); Brian Bowers, *A History of Electric Light and Power* (1982); and R. M. Black, *The History of Electric Waves and Cables* (1983). A forthcoming title in the series is *Electricity Supply in Victorian Leeds* by Dr. Poulter.

The books may be ordered from the Peter Peregrinus Ltd./IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854.

ASCE Book Highlights Communication Skills

Communication for Professional Engineers, a practical guide to communication skills, is now available from the American Society of Civil Engineers (ASCE). The book is designed for engineers at all levels, from the senior engineer who must conduct meetings, to the junior engineer who wants to acquire basic communication skills to advance his or her career. The book addresses four main areas of communication: public speaking, speaking in meetings, interviewing, and writing.

The hardcover, 240-page book costs $15.50 and can be ordered from ASCE Publications, 345 E. 47th St., New York, NY 10017.

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PCS Information Hot Line

To encourage member participation, particularly international members, the Administrative Committee has appointed Lois Moore, PCS vice-president, as "international hot line representative." Members—and non-members—are invited to write, phone, or cable her for information about PCS activities:

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Newsletter

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