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Ad Com Meeting

Members of PC's Administrative Committee met on June 6, 1980 at IEEE Headquarters in New York City. Highlights of their discussion and decision are as follows:

1. IEEE's Educational Activities Board will be asked

   a. to discontinue advertising the Workshop on Technical Communication and Report Writing, and

   b. to refer all inquiries about the Workshop to PCS.

   We have a limited number of "travelling instructors" on call, and, because of differences in administrative procedure, can charge less for the course and even realize a small profit if we make arrangements directly and not through EAB.

2. There are now more than 1900 PC-ers. This number represents a growth of 15% in the most recent reporting period—greater than that of any other IEEE entity. Rich Robinson, our Membership Chairman, has been sending letters to persons who have dropped out of the Society and also to persons who marked a PC code in their Technical Interest Profiles.

3. Rudy Joenk would like to have back copies of PC's Transactions—No. PC 21/1 (March 1978) and No. PC 22/3 (September 1979). If you have an extra copy of either issue, please send it to him at IBM Corporation, Dept. 588, Bldg. 022, P.O. Box 1900, Boulder, CO, 80302.

4. PC-ers, especially AdCom members, are urged to support our publication effort by suggesting topics or authors for papers and news items, asking colleagues to submit material, or writing articles, news paragraphs, or general interest items themselves. Note the article by Ray Stephon in this Newsletter; it is his second, and he promises more. Thank you Ray; keep them coming.

5. In a recent mailing, 30 PC-ers who live in Norway, Sweden, Denmark, and England were asked to represent the Society at INTECOM's Forum '80, the Second International Conference on Technical Communication, to be held in Lillehammer, Norway, August 24-27.

As of June 20, three members have responded, but all, unfortunately, declined with regret. Bob Winton of London, recently retired from business,

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Send Form 3579 to IEEE, 345 East 47th Street, New York, New York 10017

continued from page 1

wrote that he "would have welcomed the assignment" but needs a sponsoring organization to subsidize the journey. G. N. Howell, who has been working for Mobil in Stavanger, said that he will be transferred from Norway to Texas early in July. P. H. Appelgren of Sollentuna, Sweden, will be on military duty in August.

* * * * * * * * * *

As of July 8, four more PC-ers have declined. Basil Osborne and G. A. Hanley of our UK Chapter would like to go to Lillehammer, but, as with most of the rest of us, need funding. Ragnar Nilson of Studsvik in Nykoping, Sweden, will be firmly involved in special company business at the time of Forum '80 and Ken Bramham of Paris is between jobs.

Active AdCom members, especially including the Newsletter Editor, are most gratified to have these cordial answers, despite the 100% regrets. Thank you, PC-ers, for your interest, good will, and responsiveness.

We will, however, have a representative at Forum '80 after all. Read about Bob Mount elsewhere in this issue.

Letter from the Editor

PC's Newsletter seems to be settling down to a sensible, steady-state level of 16 pages per issue. Written, typed, and proof-read through the courtesy of the editor's employer, in Baltimore, it is set up, printed, and distributed through the efforts of IEEE's publication staff in New York. The Baltimore editor continues to pass blithely over mis-typings, but the New York staff makes each issue look a little more "professional" than the last. Now if we can only manage to use a single kind of type throughout a given issue——!

* * * * * * * * * *

Please note the full-page description of the PC-sponsored Workshop on Technical Communication and Report Writing. Item #1 in the account of our AdCom meeting is related.

This course has been very well received in many companies, and some have offered it to more than one group of technical people. It can be given in your company also. Ask PC's president, Bert Pearlman, for more information—his company is a highly pleased "user". Promote the workshop among your business associates; write to Ron Blicq for specific cost, time, and details about associated CEA Units.

* * * * * * * * * *

It is not too early to think about PC's scholarship—$1,000 to promote the study of technical communication. For information and an application form, write to Dr. Della Whittaker, 10804 Ashfield Road, Adelphi, MD 20783.

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The letter from P. H. Appelgren of Sweden (AdCom Item #5) has been much on my mind. He writes that he finds PCS publications interesting and helpful, but that our "projects are not very useful to a Swede, as you no doubt understand."

Indeed I do understand, but I have wondered for some time what we can do that would be useful, and I know that PC's AdCom will seriously consider any rational suggestion. The question, "How can we help?" has been asked many times, but no one has made any answer.

With the establishment of INTECON, however, and the increased number of international meetings conducted in English, there may be more widespread desire to upgrade skills in using this language. PC's Home-Study Course might appeal to those who have considered communicating with a trans-national audience or to those who work in a trans-national organization. And managers in trans-national companies might consider having Ron Blicq present the Workshop for selected employees.

What else can PC offer non-US PC-ers? Or are the eight-yearly publication issues sufficient? Editors and officers will welcome your communications.

Candidates for Election to PC's Ad Com

PC-ers whose brief biographies appear below have been nominated and approved for the three-year term 1981-3. If Bert Pearlman receives no other nominations by September 15, these persons will automatically be elected.

RONALD S. BLICQ

Ron Blicq has been involved in technical writing for almost 30 years. His background includes 10 years as an avionics officer with the Royal Air Force in Britain, 10 years as technical editor and training coordinator with the Electronics Division of CAE Industries in Canada, and 15 years as an instructor of technical report writing at Red River Community College in Winnipeg, Manitoba, Canada.

Ron is head of the Department of Industrial and Technology Communications at Red River College and owner of The Roning Group (communication consultants). Chairman of PC's Education Committee since 1972 and recipient of PC's Goldsmith Award for 1976, he wrote the home-study course and workshop that PC sponsors and has organized their presentation from the beginning. Both are based on his text, Technically—Write! of which a second edition is now being printed.

DAVID C. CROCKER

Dave Crocker holds a BSEE Degree from MIT and is a Registered Professional Engineer in the Commonwealth of Massachusetts.

For the past 30 years he has served with the Charles Stark Draper Laboratory, Inc. in Cambridge,

Mass. (formerly MIT's Instrumentation Laboratory). On the staff of the Lab's Computation Department for 22 of those years, he has been concerned with text processing, design of programming tools, teaching, and consulting.

An IEEE member with interests in broadcasting and communication as well as professional communication, Dave is co-owner with his wife Roberta of a typesetting firm, Crockergraphics, in Needham, Mass. They specialize in unusual applications of computers and typesetting.

Present Secretary-Treasurer of PC's Boston Chapter, Dave is one of that group's "founding fathers."

JOHN C. PHILLIPS

John Phillips received the degree of BA in Mathematics, with honors, from Rutgers University and has done graduate work in communication at Temple University. From 1962 to 1967, he was an engineering editor in RCA's Astro-Electronics Division. Later, as a member of RCA's corporate staff, he developed technical communication programs and planned technical papers for presentation and publication. From 1975 to 1979 he was Editor-in-Chief of the RCA Engineer. He is now Manager, Proposals—Marketing at RCA/Automated Systems.

John was PC's President in 1972 and served as General, Program, or Finance Chairman for four PC Conferences. PC's Treasurer since 1973, he is also a member of the Editorial Board of the IEEE Spectrum and of IEEE's Publications Board.

DANIEL ROSICH

Dan Rosich teaches courses in information and decision science at the University of Connecticut's Graduate School of Business Administration, and also serves as a consultant to business and industry.

He has worked on large computer software projects in both technical and management roles, but his chief interests at present are man/computer dialogues and problems of protecting privacy in large data-base systems. He has presented papers and conducted workshops on technical topics in computer science, the social impact of computing technology, applied semantics, and technical communication.

Dan received the PhD degree from New York University and AM and AB degrees from the City University of New York. A member of IEEE/PCS since 1967, he is a Senior Member of both the IEEE and the Instrument Society of America (ISA) and a Member of the Operations Research Society of America (ORSA). In 1978, he was Secretary of PC's AdCom.

LOIS K. THUSS

Since Lois Thuss was appointed late in 1979 to fill a vacant AdCom term, she has been PC's Chairman of Student Membership. She is eligible for election to serve a full term of three years.

A graduate of Fisher College (Boston), Lois has over twenty years' experience in publication—writing, editing, and supervising the production of technical documents for government, military, and commercial applications. She is now Managing Editor of Documentation in the System Evaluation Branch of the Johns Hopkins University Applied Physics Laboratory. Previously, she worked for Trans-Sonic, Inc., Technical Operations, Inc., RCA, and IBM.

A member also of the Society for Technical Communication, Lois will chair the Writing/Editing Stem of that organization's 28th International Technical Communication Conference in Pittsburgh, May 1981.

PC in the UK

Both of the last two meetings of PC's UK Chapter had television as the main theme and both were held at Imperial College in London. In November 1979, Dr. G. B. Townsend, Head of Information Services of the Independent Broadcasting Authority, spoke on the subject "Can Broadcasting Communicate?" He discussed some of the criticisms directed at the present use of television and radio and referred to the effect of engineering developments like interactive facilities on the potential of Broadcasting to Communicate, but suggested that the sociological implications of such developments may prove difficult to control.

The speaker in May 1980 was Mr. D. P. Leggatt, Head of the Engineering Information Department of the British Broadcasting Corporation. Mr. Leggatt discussed B.B.C.'s policy of giving information to the general public, and the nature and scale of the communication of information within the Corporation. His concern was not so much with engineering developments as with ensuring that information is communicated internally and externally to provide a service of maximum efficiency with minimum cause for complaint.

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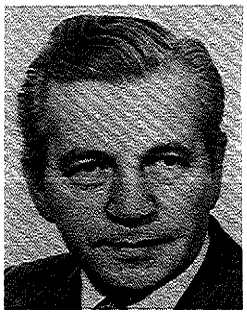
PC-er to INTECOM



ROBERT L. MOUNT

Bob Mount, of the Institute of Gas Technology in Chicago, will represent PCS at Forum '80, the second conference of the International Council for Technical Communication, August 24-27, in Lillehammer, Norway. His account of the meeting will appear in our next Newsletter.

Bob joined IGT in 1972. As Senior Advisor, Technical Writing, he writes, designs and manages the production of special publications on such subjects as coal liquefaction and gasification, oil shale development, synthetic fuels, fuel cells, and world energy resources.

His early technical work included engineering and research publishing in the areas of atomic, biological, and chemical warfare for the United States Army and in guided missiles and countermeasures research for the United States Navy. He was a Naval aviator and flight instructor during World War II.

Bob's activities have included technical reporting on oil exploration, petrochemicals, engineering, physical science, R&D, industrial processes, metals, machine tools, computers, and technical management. From 1963 to 1973, he wrote approximately 500 technical articles for an international clientele that included IBM, Reuters, the Encyclopedia Americana, Science Forum, and Datamation. His administrative positions have included posts as assistant city editor for two metropolitan daily newspapers, managing editor for two technical magazines, and nominal editor for seven journals.

Bob studied industrial engineering at Lehigh University, received his B.S. in Journalism from the University of Utah, and took graduate courses at the University of Utah and UCLA. Later, as a Sloan-Rockefeller Fellow at Columbia, he completed a certificated post-masters-level course in advanced science writing.

A Senior Member of the Society for Technical Communication and a Member of the American Association for the Advancement of Science, Bob recently became an Affiliate Member of IEEE. At Lillehammer, he will present a paper on "Technical Communications from the Runestones to Project Apollo. . . Whither Tomorrow?" He hopes that it will stimulate introspection among international communicators and inspire the establishment of a general newsletter.

Bob's hobbies are sailing, scrimshaw, and leather work. By the force of their united opinion, his wife, two grown children, and six stepchildren only just convinced him that he should sign up for INTECOM's post-conference bus tour instead of planning to backpack alone in the mountains of Norway.

Welcome, New PC-ers!

Wecome to 75 new PC-ers who joined us in April, May, and June—44 from the United States and 31 from other countries. We hope that you will be active rather than passive members. As a start, send a comment or a clipping to an officer or editor—addresses at the front of Transactions and Newsletter or care of IEEE in New York City.

BRAZIL
C. W. J. Penney

COLUMBIA
R. Castillo-Erazo
A. Caycedo-Gonzalez
C. E. Chico-Diaz
E. Daniels-Avila
E. Gomez-Cugruo
A. R. Martinez-Pena

EGYPT
S. H. Kaptan

ENGLAND
H. Al-Ahmad
J. S. Lee
A. W. Nuttall
B. W. Osborne

INDIA
M. P. R. Vittal Rao

ITALY
E. Fiore
C. Fondi

CANADA
B. G. Davis

UNITED STATES

Arizona
W. H. Holzer

California
J. Bayus
J. A. Chamberlain
J. G. Dollinger
D. A. Dutoff
T. H. Gilmore
N. D. Goff
A. A. Hammell
R. I. Primich
J. K. Vanderwilt

Colorado
R. A. Peltier

Connecticut
M. F. Demaw

New Hampshire
C. D. Huntemann

New Jersey
P. M. Brogle

New York
E. B. Janofsky
R. J. Mullin
I. T. Rebecchi

Ohio
R. J. Rittenhouse

Pennsylvania
R. J. Truax

S. Carolina
J. F. Fields, Jr.

Texas
J. J. Bruce
W. L. Crutcher
R. J. Dixon
G. L. Wayne

KOREA
H. J. Lee
Y. S. Lee
J. H. Shin
L. Y. Young

KUWAIT
M. T. Traidan

MEXICO
S. Barrera
M. A. Garcia
J. J. Noguez-Monroy
V. M. Perez Pineda
J. Viruena-Uilchis

NIGERIA
T. K. Okundren

SINGAPORE
N. C. Sum

SWITZERLAND
K. H. Kirchhofer
S. K. Sarkar

UNITED ARAB EMIRATES
H. U. Siddiqi

U.S.S.R.
A. Rugyema

District of Columbia
J. Kean

Florida
S. Chun
D. A. Contento
C. N. Golub
A. E. Ron
P. A. Tobey

Illinois
R. D. Oppel
R. L. Parker
S. A. Wrzesinski

Indiana
J. C. Tilton

Iowa
R. E. Youngberg

Maryland
T. W. Johnson, Jr.
C. Reeder

Massachusetts
G. S. Barry
J. G. Kassakian

Michigan
G. D. Darling
H. V. Nguyen

Nebraska
D. A. Watt

Wisconsin
W. L. Stroess
M. A. Tyborski

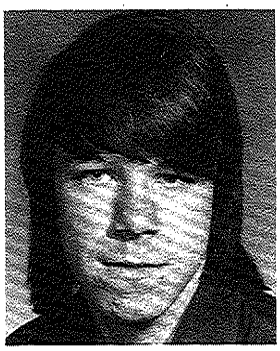
You may find the worst enemy or best friend in yourself.
—English Proverb

The louder he talked of his honour, the faster we counted our spoons.
—Ralph Waldo Emerson

It is with trifles, and when he is off guard, that a man reveals his character.
—Schopenhauer

Repentance is not so much remorse for what we have done as fear of the consequences.
—La Rochefoucauld

Scholarship Winner



Brian Lundeen received the PCS Scholarship of $1,000 in a ceremony at Red River Community College in Winnipeg, Manitoba on May 21. The presentation was made at the joint Annual General Meeting and Student Paper Night of the Winnipeg Section of IEEE. The College distributed a press release on the subject.

Brian, who holds a BS degree in physics from the University of Winnipeg, will use the scholarship to complete work for a diploma in computer technology.

News from Paris

Ken Bramham writes from Paris that he is "very busy being unemployed" and needs a vacation. Apparently he has tired of "slaving away" at "rubbishy" technical translation and plans to spend a month in the country.

"Unemployment is a full-time job," he laments, but what seems to upset him most is the fact that French stores no longer sell Prince Albert tobaccco.

Intercepted Letters

From Julian Zelenko, Israeli PC-er, to Della Whittaker:

Just received the two books you sent. I truly appreciate the fact that you took the trouble to wrap and mail something and that you took my request seriously.

I am hungry for magazine articles on technical writing, editing, management, teaching, graphics, etc. Israel badly needs periodical publications.

Again, many thanks, I would like to hear from more of you professionals.

* * * * * *

From Della Whittaker to Emily Schlesinger:

Please put another item in PC's Newsletter to say that Julian Zelenko still needs articles and books on engineering and technical communication, or news about such material. He finds it difficult even to become aware of available information, much less to obtain copies. He receives PC publications but is sure that others would be helpful also.

Ask PC-ers to clip or copy articles or book reviews and send them to Julian Zelenko, 13 Pinsker Street, Apt. 8, Rehovot, Israel.

* * * * * *

From Emily Schlesinger to all PC-ers:

In PC's Newsletter for December, 1979, an item called "Request for Help" asked readers to send articles to Julian Zelenko, our Home-Study instructor in Israel. Della Whittaker responded by mailing some material from the Society for Technical Communication. Can you help too? See Julian's address above.

PC-ers in STC

Nine PC-ers attended the 27th International Technical Communication Conference held by the Society for Technical Communication May 14-17 in Minneapolis:

Ron Blicq	Harry Silver
Dave Dobson	Lois Thuss
Craig Harkins	Pete Vrouvas
Rudy Joenk	Bill Wells

Della Whittaker

Ron, Craig, Lois, and Della presided or gave presentations.

For the 28th ITCC, to be held May 20-23, 1981, in Pittsburgh, Della is already making plans as Program Chairman and Lois is preparing to manage the Writing and Editing Stem. Put the dates on your calendars, eastern PC-ers. We may have an AdCom meeting on one of those evenings.

SSP

The

Society for Scholarly Publishing

recognizes

IEEE Professional Communication Society

as a

Charter Member

supporting

the advancement of the science and

art of communication among scholars

Mark Antell
President

June 30, 1979
Washington, D.C.

The Society for Scholarly Publishing held its Second Annual Meeting in Minneapolis, June 2-4, 1980. The theme of SSP-2 was "Scholarly Publishing in an Era of Change"—in particular, the interaction between professionals in all aspects of publishing and technologies created to assist them. Attitudes and applications were discussed by publishers, researchers, editors, professors, printers, librarians, consultants, marketing managers, and computer specialists.

SSP is the successor to the Association for Scientific Journals, which was "founded" by IEEE, PCS, and Jim Lufkin. ASJ held three bienniel conference meetings under IEEE/PC sponsorship—in 1973, 1975, and 1977—before assuming separate identity as SSP. IEEE is now one of SSP's several organizational members, with PCS as its liaison Society.

New Drama by Lufkin

JAMES M. LUFKIN

Jim Lufkin—long-time PC member, past president of PC's AdCom, author of scholarly articles and tutorial dramas on technical communication, and "founding father" of the former Association for Scientific Journals, "godfather" of the Society for Scholarly Publishing, and editor of The Scientific Honeyweller—has written a new play.

Jim's latest, The Fatal Slide, was billed as "an audio-visual farce in one act" at SSP's recent meeting in Minneapolis, where it was presented for the first time "to edify scholars and their publishers."

In the single performance, Jim himself took the part of Dr. Jones, the Author, who makes an incomprehensible presentation illustrated by even more incomprehensible slides. He is submitting an article for the Journal of Absolute Truth. The other characters are the Editor, Betty, and two masked Referees, who, as the plot unfolds, reveal bad tempers, mutual antagonism, and finally their pseudo-scholarly identities.

The Author's first slide is a ridiculously crowded confusion of black spots and dashed-line connections. When asked to simplify it, he exclaims in disbelief,

"Simplify? It's already simplified to the point of absurdity." There are, he points out, 86 variables, and he has a slide for each one.

Things go from bad to worse. Both Referees quarrel with every statement made by anyone and especially with every slide shown by the Author. As the Editor tries to mediate, Dr. Jones speaks in jargon and clichés, quotes "big name" authorities, and proudly displays untitled reproductions of multiple graphs, an unreadable flow diagram, and "a 20 x 20 matrix of 4- and 5-digit numbers."

The final slide, "a capsule summary in grossly simplified form," is as jumbled and unattractive

as the others. It contains two graphs, several differential equations, and one complex summation. The dense text is written in foreign characters—not the language of either the Journal of Absolute Truth or the drama being presented.

One Referee suggests that the paper might be suitable for the Journal of Hypothetical Truth, but, in the course of another argument, it appears to be destined for the Journal of Irreproducible Results.

A reliable source has given the following vital statistics on the running time of The Fatal Slide in Minneapolis: 18 minutes in rehearsal, but 30 minutes in performance because of 20 interruptions by audience laughter and 8 by prolonged applause and vigorous cheering.

VCC/West

After three consecutive years in New York City, the VISUAL COMMUNICATIONS CONGRESS will meet on the West Coast. From September 22 to 24, seminars and an exhibit of equipment, services, and programs will be held at the Los Angeles Bonaventure.

The recently concluded VCC in New York drew over 10,000 attendees—motion picture, television, audio-visual, and photographic specialists and managers.

The New York Times described the VCC as "stimulating . . . new and inspiring . . . filled with visual excitement."

VCC/West will feature a program of more than 40 seminars and workshops on technical and general operational subjects. Several seminars will concern special applications in such fields as

*sales and marketing,

*training and education,

*medicine,

*law enforcement.

In addition to the scheduled seminars, IFPA, the Information Film Producers Association, will begin its national convention with a concurrent meeting. Regional meetings are also planned by the Association for Multi-Image, the Health Education Media Association, and the International Television Association.

The VCC Exhibit Hall will feature the latest in equipment and production services.

Obtain a full program brochure from VCC/Conference Management, 500 Summer Street, Stamford, Connecticut 06901

Security

The Third International Conference on Security Through Science and Engineering will be held September 23-26, 1980 in Berlin (West)Germany. It is being sponsored by the

Technical University of Berlin

University of Kentucky
College of Engineering

IEEE Technical Groups and Aerospace and Electronic Systems Society

The conference will provide a forum for dissemination of information and exchange of ideas concerning applications of science and engineering in law enforcement, security, and crime prevention. Papers will be read and discussions held on such subjects as

police, alarm, command, and control systems

automatic vehicle monitoring

automatic identification and authentification of voice, handwriting, fingerprinting, and other signatures

searching aids—x-ray, sonic, magnetic, micro-wave

conservation of electromagnetic spectrum

privacy and security in communication

All sessions will be presented in English, French, and German through the medium of simultaneous translation.

Obtain more information from John S. Jackson, University of Kentucky (606-257-3926) or Klaus Fellbaum, Technical University of Berlin (030-314-5209).

Scientific Editors to Meet

The Second International Conference of Scientific Editors will be held October 13-17, 1980, in Amsterdam, under joint sponsorship of Elsevier Science Publishers and the International Federation of Scientific Editors' Associations (IFSEA). Elsevier is celebrating its fourth centenary—the name has been associated with books and publishing since 1580.

The language of the Conference will be English. The theme of the Conference will be "Scientific Information Transfer: People, Methods, and Means." Discussions, demonstrations, poster sessions, and lectures will deal with aspects of publishing in the sciences, social sciences, and humanities—copyright, quality control, policy, economics, alternatives, and especially cooperation. Proceedings of the Conference will be published in a special issue of the Journal of Research Communication Studies.

The Conference fee for participating members, Dfl. 350 (about U.S. $175), covers participation in all offical activities, coffee and tea breaks, four lunches, reception, mid-week excursion, Conference dinner, and Proceedings.

The Conference fee for accompanying members, Dfl. 150 (about U.S. $75), covers participation in the Monday morning session (October 13), two lunches, reception, mid-week excursion, and Conference dinner.

The reception (Monday night, informal dress) will be held in the National Vincent

Van Gogh Museum. It is being offered by the Minister of Education and Science and the Municipality of Amsterdam.

The full-day mid-week excursion (Wednesday, October 15) includes a visit to the flower auction at Aalsmeer, a choice of museums in Haarlem, lunch in the fishing village of Volendam, and a boat ride on the IJsselmeer (former Zuiderzee).

The Conference dinner (Thursday evening) will be held in the Elsevier offices.

One- and two-day post-conference tours of The Netherlands are available, and four 3- to 5-hour tours are offered for accompanying members.

For more information and forms for registration and accommodation, write to Helena Tombal, Elsevier Science Publishers, P. O. Box 2400, 1000 CK Amsterdam, The Netherlands. Completed forms should be returned before August 15, 1980.

INTERMAG

The next International Magnetics Conference (INTERMAG) will be held at the Alpes Congrès Conference Center in Grenoble, France, from Tuesday, May 12 to Friday, May 15, 1981. This Conference is jointly sponsored by the Magnetics Society of IEEE, the Société Française de Physique and the Société des Electriciens, des Electroniciens et des Radioélectriciens. Holding the Conference outside the USA continues a long-time triennial cycle which emphasizes the international community in applied magnetics. The choice of Grenoble recognizes the important contributions of French science and technology to the subject, and in particular those contributions of the laboratories and University of Grenoble, now the site of several multinational centers of research. The meeting will be open to all persons subject to payment of a registration fee.

The purpose of publicizing INTERMAG in this Newsletter is less to urge that PC-ers attend than to point out the existence of this "international community" and to suggest the importance of "thinking internationally."

Obtain more information about the Conference from its Chairman, J. M. Lommel, General Electric, Corporate Research and Development, P.O. Box 8, Schenectady, NY 12301, USA.

Make arrangements for exhibiting equipment and technical information with D. Randet, LETI, Centre d'Etudes Nucléaires, B.P. No. 85, 38041 Grenoble CEDEX, France.

Translators' Directory

The American Translators Association (ATA) has published the fourth edition of its Professional Services Directory. This guide, the most comprehensive listing of its type available in the USA, contains detailed information on approximately 500 members of ATA who work in a total of 56 languages, from Afrikaans to Yiddish, in over 87 subject specializations. The translators listed live in most of the United States and in many foreign countries. Members who have passed the ATA Accreditation Examination in various combinations are given special identification.

The Directory is useful to those who have frequent need for language service in any area of science and technology, business and commerce, or the arts. It lists all translators alphabetically, giving details on languages handled, services offered, and professional education and experience. It also contains language and subject indexes for use in matching persons and jobs.

Previous editions of the Directory, published in 1966, 1970, and 1976, found enthusiastic acceptance by business, industry, libraries, and universities.

Send orders and inquiries (including requests for sample pages of the previous edition) to ATA-PSD, 109 Croton Avenue, Ossining, New York 10562. Tel: (914) 941-1500. The price of the Directory is $22.50 (prepaid in the USA and Canada) and $25.00 (foreign orders).

Help Needed

IEEE's editorial staff is asking for volunteers to help with papers written in English by authors for whom English is a second language. Many papers approved for publication by virtue of their content are unacceptable because of their un-idiomatic language. In short, they need a special kind of editing.

If you are interested in helping foreign authors, write to E. K. Gannett, IEEE Publication Services, 345 E. 47th Street, New York, NY 10017. Give your name, address, and telephone number, the areas of your engineering knowledge or expertise, and non-English cultures or languages that you are familiar with.

IEEE Directors

From Dr. T. L. Regulinski, President of IEEE's Reliability Society, comes a request to endorse a past-president of that Society who has been nominated for the office of Director, Division VI.

It is not the policy of PC's Newsletter to support candidates for election to any office, but Dr. Regulinski's letter points out several subjects that all members of IEEE would do well to consider when voting for Directors.

First, he mentions the inherent internal problems related to the often conflicting aims and expectations of the Technical Operations Board (TAB) and the Groups/Societies/Councils. G/S/C presidents, he notes, need to articulate their "parochial" professional and administrative concerns and difficulties before TAB, whereas TAB wants the G/S/C presidents to concern themselves with Institute-wide problems.

Other questions arise also because of G/S/C size and commonality-of-interest groupings and the tendency of G/S/C purposes to change and interests to be modified.

A third set of subjects for consideration consists of the activities and local affairs of Chapters and Sections, and a fourth concerns inter-society relationships on the international level.

The ideal Director will have had experience in all four of these areas, but perception and insight can conceivably be acquired through other kinds of work also. Consider the qualifications of all candidates for Division VI Director and vote according to your best judgement, PC-ers.

Risk and Democracy by David L. Bazelon

The March 1980 issue of Technology and Society printed the text of a talk given by David L. Bazelon, Senior Circuit Judge, U.S. Court of Appeals, for the District of Columbia. Judge Bazelon spoke at the Annual Meeting of the National Academy of Engineering, November 1, 1979. A summary/condensation of his address follows:

Because the health and safety risks generated by modern science and technology are extraordinarily complex, the role of the courts in regulating these risks should be clarified. Some claim that existing regulation is too lax, others call it too strict; some want no regulation, others want more effective regulation.

The courts, however, cannot resolve technical disputes related to nuclear physics, toxicology, and other specialties; the judges are not well enough informed—to establish allowable levels of exposure to radiation, for example.

Nor can the courts make critical value choices; legal power to do this belongs to the public, through its elected representatives in Congress—to decide if we should ban saccharin or the Concorde, for example.

The courts' role is rather to ensure that the decision-making of government agencies is thorough and within the realm of reason. Agencies should be required to disclose evidence heard and policies considered, assumptions, doubts, and points of controversy. Then experts in universities, government, and industry can make quality checks; there can be open peer and legislative review, technical evaluation, challenge of facts and decisions, expert and political debate, public education, even discovery of new data.

Courts can help to ensure that competent and orderly administrative records are created. They can guarantee that all relevant information has been considered. They can accustom decision makers to the discipline of explaining their actions. They can ensure that all persons affected have been able to speak and participate.

Such open and thorough decision processes can, in turn, expose gaps, stimulate further investigation, and reduce the risk that important information will be overlooked or ignored. An open process can not only inspire confidence in the uninformed and unbelieving but also protect decision makers from accusations of "cover-up."

But if the courts require complete disclosure by government agencies, similar openness will be demanded of engineers also. They must explain the bases for their engineering judgements, state their doubts and assumptions, reveal the risk levels they estimate. Otherwise, the agency records to be reviewed by courts, engineering peers, and public will not be complete or sufficient.

Many believe that complete disclosure of risks is unwise—it alarms the public they say, and heightens feelings of insecurity. On the contrary, however, the policies of non-disclosure make the public fearful, suspicious, and indignant.

Furthermore, the idea of non-disclosure is inconsistent with democracy, "The genius of our system is its checks on centers of accumulated power. For this system to survive, experts must disclose their knowledge about promises and perils from technological advances. Special knowledge will undoubtedly, and rightly, give experts an important voice in political value choices. But to protect themselves, and the country, experts cannot, and should not, arrogate the decisions to themselves. Public confidence is possible only if experts accept the difficult tasks of explaining what they know and do not know, and how they balance risks and benefits."

Engineers may feel ill at ease with this message, for they are accustomed to apply scientific advances by making private cost-benefit analyses. But today, when the consequences of engineering judgements are of unprecedented magnitude and major public concern, trade-offs and technical decisions deserve and require peer and public review. "A cost-benefit calculus framed for private decision-making may significantly depart from the demands of public decision-making," and levels of risk are viewed from one value system by the technical community and from other, often opposing, value systems, by the general public.

More specifically, engineers are often reluctant to reveal design defects to their employers—a defect identified may mean a new cost or the loss of a contract. Or, the drive to produce the cheapest design in the shortest possible time may eliminate needed safety checks. Similarly, public insistence can push the search for hardware faster and farther than it is ready to go. Consider how time, profit, and general-opinion pressures interfered with caution crucial to public safety in the case of the DC-10 aircraft, and in that of the space shuttle, now being re-designed because component tests were eliminated.

Engineers have other reasons for feeling ill at ease with the idea of complete disclosure. Members of their profession are generally averse to taking public stands on safety issues and reluctant to speak out about indeterminate risks; they would rather be silent than inaccurate. Also, they may avoid disclosure because they shun controversy, fear reprisals, or anticipate loss of employment. On the other hand, they may ignore broad public concerns out of loyalty to their employers.

Nevertheless, the engineering profession's duty to the public is acknowledged in its ethical canons. Engineers are called upon to "serve with fidelity the public, their employers, and clients" (Code of Engineering Ethics approved by the Engineering Council for Professional Development, 1974).

Instructions for serving these three masters simultaneously, however, are difficult to find, more difficult to follow, and often tragic for those who attempt to apply them. What shall an engineer do when he notes a divergence between public and private interests?

The IEEE's "Employment Guidelines" (Spectrum, April 1973, 57-60) directs the professional employee to withhold plans that do not meet accepted standards and to present clearly the consequences to be expected if these standards are not followed. Admiral Hyman Rickover has urged, "Face the facts and brutally make needed changes, despite significant costs and schedule delays." Particular cases and consequences of disclosure and non-disclosure have been publicly documented in recent engineering history.

In the final analysis, however, it is clear that "non-disclosure violates a partnership with the public that engineers have entered by ushering in a new day in technological capabilities. If technological progress is to coexist with democracy, its creators must rethink their methods and their communication with the public.

"At the same time, judges, regulators, and other participants in public decision-making must reexamine their roles against the backdrop of the ever-evolving technological landscape.

"However difficult, we must all criticize ourselves to avoid hardening of the arteries in our professional conduct and moral sensibilities. We need self-regulation, not just governmental regulation, to harness new-found tools for human ends."

As an example of the courts/agency/engineering inter-relationship, Judge Bazelon's speech contained this account:

"Consider the problem of nuclear waste disposal. Many engineers believe that the solution is within reach—in theory. It has taken the industry a long time to take the problem seriously, even though it has been the public's major concern about nuclear power for years. This problem came to my attention in a case in our court, Natural Resources Defense Council v. Nuclear Regulatory Commission. I became concerned because the NRC had relied exclusively on vague assurances that nuclear waste disposal problems as yet unsolved would be solved. Our court reversed the agency's decision in order to permit a fuller inquiry.

"My objection was not founded on any disagreement with the conclusion that nuclear waste disposal can be managed. Nor did I criticize the NRC for failing to develop foolproof solutions to the problem. What I found unacceptable was the almost cavalier treatment of the issue by the agency, and its apparent refusal to come to grips with the limits of its knowledge. The Commission gave no serious response to criticisms brought to its attention, no technical oversight within the agency was demonstrated, and no peer review by the expert community at large was possible.

"In this case, perhaps better known under the name of Vermont Yankee, the Supreme Court unanimously rejected our decision. That Court concluded that we had imposed on the agency procedures not required by law. Nevertheless, the Court returned the case for us to determine whether or not the record supported the substantive conclusions of the NRC. In so doing, the Court reaffirmed the fundamental requirement of full disclosure on the record. This included thorough exploration of uncertainties, even though engineering practice would otherwise leave problems alone until they demand practical solution."

Are Engineers Monsters ?

Below is a condensed and slightly edited version of a transcript printed in the Antennas and Propagation Society Newsletter for April 1980. The original speech was given by A. Henry Morgan, chairman of IEEE's Public Relations Committee, before a joint RAB/TAB meeting in New Orleans in December 1979. Morgan made two points,

1. The public thinks engineers are monsters.
2. Engineers should do something to correct this image.

He discussed these ideas as follows:

Regardless of what we engineers think of ourselves, I suspect that you would be shocked at what many of us have found to be the view held by members of the general public.

They see engineers as incompetent polluters and immoral destroyers, insensitive to the ways of society.

They consider what we have designed: DC-10s that crash; automobiles that need to be recalled; military vehicles and bombs capable of destroying civilization in cahoots with some vaguely-defined military industrial complex; nuclear reactors like the one on Three Mile Island; industries that proliferate waste and airborne pollutants. They say that we spend our time going to the moon and avoid the seemingly simple (to them) project of making solar energy economical.

They accuse us of participating in a conspiracy with big business, of aiding and abetting planned obsolescence.

They say that our technology shares in the responsibility for gooping up beaches because we take short cuts when we design offshore drilling systems; they complain that as an alternative for spoiled beaches we offer them coal, strip mining, and soot-filled grimy air.

They think that our computers invade the public's privacy and are designed to entrap individuals. To the public we are servants of some soulless clique that abandons still-serviceable historic buildings, warmed by nostalgia and sentiment, and in their place substitutes slabs of concrete uniform in their tendency to chill the soul--while at the same time creating slums and overcrowded cities.

You and I, they say, are interested in technology for technology's sake--as professionals we are self-serving and talk in arrogance only to ourselves, using jargon only we understand and taking society out of control.

You may think I'm exaggerating to make a point--but you must agree that this is the way we appear to a large segment of the public and that the public has a negative bias toward technology. We, as proponents of technology, are tainted by that same bias.

Do we rate this image, this lack of understanding? Are we, as is said, interested only in things, not in people?

It is time that we begin to speak out, to make the public aware that as engineers we are proponents not of a necessary evil but of a vital force in our society, in our economy, in our survival as a nation and even as a human race.

The doctor can help keep some people alive, the policeman some from being killed, the lawyer some from suffering injustice, but without energy, they will all soon be out of business. And only engineers can make that energy safe, nonpolluting, inexpensive, and readily available. Scientists discover, but engineers make science useful and public-serving.

While engineers deal with the larger problems of survival, we make instruments for micro-surgeons, create equipment to improve the use of existing fuels, design systems to increase the yield of soil. Our communication equipment and hot-lines promote better understanding among people or, at the least, help to reduce misunderstanding.

I am certain that all of you can add to this list of engineers' achievements. Properly described to the public, they can alter the public's attitude toward engineering.

But who are our spokesmen, and what have we as engineers told the public?

About a most important kind of energy--nuclear energy--we have said little or nothing to the public, and what we have said has been said timorously. We seem almost to have abandoned our voice on this subject to airport-based activists who insist that nuclear plants are built better than Jane Fonda and safer than riding in Ted Kennedy's car. Such nonsense is not going to solve our energy needs or encourage the public to understand what the risks are and what alternative actions are available or need to be taken.

If you think my references are too grand for the individual engineer to relate to, or if you ask what all of this has to do with me, I say that what the public thinks about us affects our

1. status
2. peer acceptance
3. job satisfaction
4. employer's view of our value
5. career opportunities
6. salaries

We have begun to build public awareness and to show concern about our relations with the public through the IEEE United States Activity Board (USAB) and a new Public Relations Program. But more of us should be involved in these efforts.

As the largest organized group of engineers in the world, we, the 190,000 members of IEEE, must take the lead in establishing general awareness of our contributions to general welfare, of our social consciousness, and of our continuing readiness to work for the good of all people.

New-found Abstract

This spoof of an abstract that could be improved appeared recently in Scientific Honeyweller (Vol. 1, No. 2; June 1980). No doubt Editor Jim Lufkin is fully responsible, despite his claim of having translated an item "recently discovered in the National Archives in Madrid." Note that Columbus is purported to have written the original in jail (Carcer) in 1493.

On the Supposed Existence of a Western Sea Route to the East
C. Columbus (Carcer Madridiensis)
Acta Transatlantica Hispanica, Imprimator Regis, A.D. MCDXCIII

Under a grant from their majesties, Ferdinand and Isabella, an investigation was undertaken to determine the feasibility of a westward sea route to the East. After eighteen years of preliminary studies, a three-vehicle configuration was finalized and appropriate personnel, equipment, and supplies installed. Methods of navigation are described. Mutinies are discussed. Storms and the measures taken to survive them are presented. Equations for the more significant non-linear relationships between the speeds of the vehicles (sv), ocean depths (od), water salinity (ws), the mean number of monsters sighted per kilometer sailed (ms/k), degrees of elevation of the dog star (eds), hogsheads of rum drunk (hrd), and number of cases of scurvy on board (cs) are derived. It was proven that: $ms/k \approx eds(cs)/hrd$.

Productivity

Items in the June 1980 Newsletter of the Industrial Communication Council point out two ways in which thoughtful corporate officers have motivated employees to increase productivity:

More and more executives are discovering that their own workers know as many productivity-boosting tactics as the alleged experts. Hence they're tapping that expertise—and saving money. Top management of Lesson Electric Corp., Grafton, Wis., meets monthly with randomly selected employees to discuss mutual problems and explore output-spurring opportunties. "More importantly, it allows us one-on-one contact with employees," says Daniel L. Doerr, vice-president. In addition, at biannual general meetings of Lesson's entire workforce, the company president delivers a "state of the company" address. Both of these managerial activities are valuable communication tools, Mr. Doerr finds.

Dr. Stanley Nollen of Georgetown University finds that "flextime" does indeed stretch pro-

ductivity. Nearly half the firms that have allowed employees to set their own schedules have boosted output or reduced labor costs, he reports in a recent edition of Harvard Business Review. The median productivity increase (in terms of physical output per worker) was 12%. Several large companies contend that these gains hold up with time, he adds. The key to "flextime," he notes, may be how it is managed. "Flextime says 'We are paying you to get the job done, not to put in your time.'" The mechanism even improves federal agency output: a separate survey shows productivity gains ranging from 2% to 5%.

Computer Utilities by Ray Stephon

A computer system is composed of hardware and software. The hardware is the physical equipment such as the central processing unit (CPU) where the arithmetic functions are performed, and peripherals such as printers, terminals, etc. Software is the set of instructions that tell the hardware what to do and how to do it. New technology is continually updating and improving hardware devices and software packages.

Just as hardware and software are being continually improved, so too are the applications of computer systems. One important application is the idea of a computer utility (sometimes called a computer network). The computer utility concept has been developing for some years and has grown increasingly important. A computer utility is actually a system that provides a large amount of computer services by offering super-scale computing power (the ability to perform multi-millions of arithmetic functions per second), vast data banks of storage, and data communication networks.

Computer utilities far surpass most stand-alone in-house computer systems in capability. (A stand-alone in-house computer is a discrete computer located at a specific location and used by a particular customer.) A computer utility behaves much like any electric, gas, or telephone utility in offering a service. It furnishes all necessary computer services to a varied group of customers located over a large geographical area.

For example, suppose that a computer utility's computer system were located in Allentown, Pennsylvania. A user in Baltimore could run a payroll, i.e., send information via punched cards through telephone lines, and have payroll computations performed in Allentown. The processed information would then be sent back to Baltimore where the checks would be printed and issued. This is an example of data processing.

At the same time, a user from San Diego could request information on waste-water treatment. The system would search its data banks and send back to San Diego pertinent information on facilities built, processes used, abstracts of papers written, etc. This is an example of information retrieval.

Computer utility services are offered by such companies as Control Data Corporation, Systems Development Corporation, Lockhead Space and Missiles Division, and many others.

Computer utilities will expand as business firms of all sizes become aware of the advantages of communicating with a super-scale computer through input/output (I/O) terminals which can be located anywhere. I/O terminals are becoming more commonly referred to as data entry/retrieval devices. They can be of many types, for example, cathode ray tubes (CRTs) with keyboard, printers, readers, and punch-card equipment.

CRT systems offer a great deal of operating flexibility. In some cases, the user can question a computer and receive responses—this is called dialogue in an interactive mode. A "smart" CRT (or terminal) contains a micro-processor that enables the user to perform some processing before communicating with the computer. An example is text editing.

As "smart" terminals become even more sophisticated, more local processing becomes available, and we enter what is known as distributed data processing (DDP). But more on this in a future article.

JIR

The latest issue of the Journal of Irreproducible Results (Vol. 26/No. 1/1980) contains many important articles, of which a few are reportable as follows:

1. R.G. Niemi suggests ten methods for hunting lions in the Sahara Desert. For example,

   a. Cost-Benefit Method—Those lions for whom the cost of capture ("all that running, dodging spears, etc.") is greater than the benefits of remaining free will give themselves up voluntarily.

   b. Utility Calculation Method—Those lions for whom the utility of roaming free will be less than that of being in a cage with x lionesses and a guaranteed y pounds of meat per day can easily be persuaded to give themselves up.

   c. Method of International Diplomacy—It never works.

   d. Survey Research Method—"Interview a random sample of lions, asking them how strongly they would resist capture; use psychophysical techniques (e.g., "force of grip") for lions who won't talk.

   e. Method of Cliometrics—Use a computer file containing data on captured lions (number, size, location, hunter, etc.) to show that Big Game Hunting is no problem.

   f. Method of Intellectual History—Outwit the lion.

* * * * * * * *

2. Steve and Judity Rebach discuss "Seasonal Egg-Scattering Behavior of Leapus paschalis, the Easter Bunny."

To explain the presence of brightly colored eggs in parklands around the time of the vernal equinox, the researchers used hidden television cameras, concealed tape recorders, and live traps. Bunnies with decorated eggs in portable basket-like nests were captured and examined. Some animals were tagged and released; others were kept in the laboratory for observation. Of the eggs collected, 93% failed to hatch. Some of the nests contained chocolate replicas of the Easter Bunny—either food (as stated by anthropologists Schraft and Nestle) or idols (as suggested by the researchers).

* * * * * * * *

3. B. Z. Palmer writes about using a statistical procedure called "Response Surface Analysis" to study the diuretic properties of two drugs injected intravenously into male rats.

Treatment rats were kept near a heater, control rats near an air-conditioning unit. The kindly technician spared a few favorite animals the indignity and injury of the needle and occasionally introduced female rats into the cages. When two rats were lost during an episode of "mass escape," a small terrier was substituted for them and his urine output was "divided by two to represent both animals." Unfortunately, the dog died before the experiment ended, but the missing observational data were estimated.

"The statistician was delighted with the data, particularly after he deduced that several anomalous high values...certainly must have been mislabeled" (or resulted from the presence of inadvertent litters)." By careful re-arrangement of some observations...he was able to produce a truly artistic computer output," a diagrammed "response surface" which demonstrated the effectiveness of the drugs and obtained government approval of their use as diuretics in humans.

Everyone involved in the research received substantial raises and the statistician became Director of Research.

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4. In a paper that "has no significance whatever and is therefore timeless, "M. E. Q. Pilson describes how he derived Pilson's Law: "It always takes longer." Data were obtained by observing the disparities between time allocated to write graduate theses and time actually used. His "open-ended" statistics show that for 45 theses the average estimated time for completion was 1½ months and for 30 theses the average actual time was 5 months.

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5. J. K. Wehrli suggests that an article might be written about "The Effects of Abortion on Reincarnation."

Management by Rejection

It has been observed that modern management methods like Management By Objectives--MBO--and Management By Exception--MBE--sometimes compete with the ancient authoritarian approach, Management By Rejection--MBR.

Crusaders for increasing the use of engineers would do well to examine these MBR systems, as they are extremely wasteful of engineering and engineering management talent. Engineers immersed in them often exhibit below-average morale and are easily proselytized.

In the ideal Objectives environment--MBO--personnel at all levels participate in the formulation of goals and implementation of plans, and the various parts of the organization pull together to achieve the purposes of management. Can you imagine the consternation of an eager young engineer schooled in these MBO methods but placed in an MBR organization where the goals are either nonexistent or so prolific, contradictory, and time-varying as to be equally illusory? And how does one apply Management By Exception when there is no stable plan against which to measure deviations?

This is not to imply that Management By Rejection systems are erratic or illogical. On the contrary, they usually function with devastating consistency.

Under MBR, no one from the top down or the bottom up has a clear idea of directions to be taken. MBR systems are perpetuated by upper levels of management which cannot be accused of possessing excessive amounts of leadership, creativity, imagination, or aggressiveness.

The incredible result (universally denied) is that all of the fundamental, far-reaching concepts originate in the deepest bowels of the MBR organization.

Managers in the MBR system, however, are not altogether deprived of their prerogative of "managing." Their latitude is severely restricted, and their decision-making is degraded to the simple process of choosing between alternatives presented by the next lower level. In other words, their practice of management involves rejecting options they dislike and allowing few (if any) ideas to percolate up the chain.

MBR systems breed two types of managers. The courageous support ideas they believe good and try to convince their supervisors. They often fail because "good" is difficult to define and defend in a goal-less environment.

Other managers, more politically oriented, tend to support only ideas they think their supervisors will enthuse over. They often fail because the supervisors have not reached a consensus on what to enthuse over and change their minds faster than ideas are submitted.

And unfortunately, although the rejectors have a high turnover rate, they keep coming and coming and coming.

In the engineering profession too, and within IEEE, far too many people manage their professional lives by rejection--pursuing their careers while rejecting membership and participation in the Professional Communication Society which offers benefits to all engineers who have anything to say or talk about.

Those who would like to formulate Communication Objectives are invited to write to an officer or editor of the Professional Communication Society.

--Adapted, especially in the last two paragraphs, from the Engineering Management Society Newsletter, May/June 1979. Edward A. Wolff, as President of EMS, wrote the original article.

Interview with PC's President

Bertrand B. Pearlman

The following is adapted from an account printed in the Stauffer Engineering Newsletter for January 1980:

"The most important thing to remember," says Bert Pearlman, "is that with proper organization and scheduling you can accomplish even more than you had hoped. Of course," he adds with a twinkle, "it helps to be chairman of some of your 'outside' associations, because then you can delegate authority."

Bert, who is Manager of Design Engineering at the Dobbs Ferry site of Stauffer Engineering Company, lives by that precept and does, indeed, accomplish, lead, create, and direct, to an almost unbelievable degree. A graduate of the present Polytechnic Institute of New York, with a professional Engineering License from the State of California, he joined Stauffer in 1965 as Principal Electrical Engineer after several years in similar positions with other companies.

Now, with 40 regular employees in his department, as well as some 35 to 50 temporaries at any given time (engineering is cyclical and covers peak periods in design), he supervises instrument, electrical, mechanical, architectural, civil, structural, piping, utilities, plant layout, and vessel engineering functions. In addition, he is chairman of Stauffer's Engineering Standards Committee, responding to the government's regulatory agencies and the evolving technical needs of the Engineering Department, and is responsible for metrication (converting to metric standards) for the Engineering Department.

Much of Bert's continuing activity is centered on providing design engineering services for new and expanded plants and technical assistance to divisional and corporate departments. He and other members of the department travel extensively, visiting vendors as well as manufacturing facilities.

Bert is affiliated with various professional associations, including several committees of the Chemical Manufacturers Association. A senior member of the Institute of Electrical & Electronics Engineers, he is now serving as President of that organization's Professional Communication Society (1979-80) and is also a member of several other societies within the IEEE. Other societies to which he belongs are the American Institute of Chemical Engineers, the Instrument Society of America, and the Society for Technical Communication. Bert was recently recommended for inclusion in "Who's Who in Engineering."

His list of memberships in non-professional associations is long also. Bert is a devoted worker for the Boy Scouts — leader of a troop in Dobbs Ferry, Assistant District Commissioner, District Financial Chairman, and member of a special five-year planning committee. He is Vice-President of Temple Beth Abraham in Tarrytown and chairman of its Board of Education, and is United Way Coordinator for Engineering, Licensing, and Patent Departments at Stauffer.

Two particular projects are obviously close to Bert's heart, however, and both of them are undertakings he was instrumental in organizing. First is the Engineering Explorer Post at Stauffer. A coeducational, teenage wing of the Boy Scouts, the Explorer organization introduces engineering fundamentals to young people and demonstrates the diversity of fields and opportunities in engineering.

The other project, which Bert also heads as chairman, is group sponsorship of one of the cottages at Children's Village in Dobbs Ferry, a center for treatment, research, training, and prevention of emotional problems of children. Some 15 volunteers from Stauffer have "adopted" the 12- to 14-year-olds in an established residence, treating them to four major events each year (picnics, parties, outings), as well as providing small gifts and celebrating birthdays. "Everything we can do," Bert comments, "is tremendously rewarding."

Bert's wife, Joan, has a Bachelor's degree in zoology and a Master's degree in education. Having careers in both medical research and religious school teaching she is serving as Vice President on the local Board of Education and is an active member of the League of Women Voters.

The Pearlmans have four sons--two sets of twins. The younger boys are sophomores in high school, one of the 17-year-olds is working for a degree in biological research and the other plans a future in physics. Both of the older boys have reached the rank of Eagle Scout.

Bert confesses to a love of classical music and to being an accomplished accordionist; he is now learning to play the organ he recently built for the Pearlman home in Dobbs Ferry.

PCS Statistics

The following figures on PCS membership appear in the Annual Report of IEEE's Secretary-Treasurer for 1979:

Membership by Grade

Fellows	31
Senior Members	220
Members	1315
Associate Members	174
Total	1740
Student Members	182
1979 Total	1922
1978 Total	1738
1977 Total	1412

Affiliate Members

Year End 1979	10
1978	10
1977	9
1976	6
1975	6

Transactions, 1979

Issues	4
Pages	240
Papers	50
Letters	7

Membership by Region

Region 1	362
2	245
3	136
4	166
5	132
6	339
7	141
8	196
9	81
10	134

Communication without Technology

by

Vice-Admiral James Bond Stockdale, USN (Ret.)

The following paragraphs about Admiral Stockdale and communication by a system of one-tone tapping are reprinted from the Aerospace and Electronic Systems Society Newsletter for March, 1980. The AESS editor extracted this material and nine introductory paragraphs from SIGNAL, with permission of The Armed Forces Communications and Electronics Association.

Vice Admiral James Bond Stockdale's A-4 fighter-bomber was shot down over North Vietnam in September, 1965. Injured after parachuting into enemy territory, he was stripped, beaten, and sent to a POW camp with a broken shoulder and a broken knee. He spent the next seven and one half years in Hanoi's Hao Lo prison (called "Alcatraz" by the POWs), mostly in solitary confinement. During those long years of captivity, the spirit of resistance to the enemy exhibited by Admiral Stockdale became an inspiration to his fellow POWs in the camp. Word was spread of his heroic actions through an improvised "tapping" communication system learned by rote and used by the POWs in an environment where spoken communication was forbidden.

Admiral Stockdale retired from active duty last September to become President of The Citadel. He previously served as President of the Naval War College. His decorations include four Silver Stars, two Purple Hearts and the Congressional Medal of Honor. The following extracts from talks given by the Admiral before his retirement to various electronics/communications groups outline the intricacies of the system and explain what his experience taught him about the amazing capabilities of the human mind.

Prison Camp Communications

I am going to talk about communications theory in the context of a prison camp during the Vietnam War in which everybody lived in solitary confinement—a solitary confinement in silence in which the use of torture was considered a punishment for those who break that silence to communicate with their fellows.

Our Vietnam enemies gave us two options to choose from—we could "lie low" and not communicate and "go to seed" over the years of silence and solitude,or we could communicate as a matter of military duty and "take our lumps." Myself and all those near me were clearly in the second camp. So the problem became how to communicate stealthily.

As a starter, of course, you secretly tap on walls. The Morse Code is no good—it soon becomes obvious that you cannot cope with the limitations of a bitonal system. It is just not practical because you have got to have a reliable, repetitive beat.

But how do you build a monotonal system? There are many ways you could apply monotonal systems to the descriptions of letters. I believe the most efficient is a method devised back in the days of the American Civil War. The system drops the letter K out of the alphabet (a C can always be used where you would use a K and the meaning is preserved), and with the resultant 25 letter alphabet, sets up a five-by-five matrix. The system is comprised of a line across the top where the letters A, B, C, D, and E are assigned beats (such as 1-1 for an A; 1-2 for a B; 1-3 for a C; 1-4 for a D; and 1-5 for an E). Using the same convention, on the second line five more letters are added: 2-1 for F, 2-2 for G, and so forth. It follows that the most inefficient letter to transmit is Z, with a 5-5 beat. But this is about as good as you are going to be able to do with efficiency with one tone and 25 letters.

What I have discussed so far and throughout this recounting is all common sense, all human mind. The same also holds true for operating signals—you do not need many. I am sure if I put any number of you in a cubicle and gave you a contract to devise a system of operating (OP) signals you would produce a complicated and cumbersome cross-indexed monstrosity.

In our situation, we devised operating signals under pressure and under the threat of pain, with a real appreciation for safety and efficiency. We found that only four OP signals are needed. The first is one that says "no," "danger," "stop," or any connotation of the negative. For this you should use any "one" signal—a single thump, the single noise, the single flash, a single wave. The second necessary operational signal should say "yes," "go," "concur," "execute," "good." For this we used two of anything—the most efficient signal except for the single beat "no" signal. The third necessary signal is "repeat," which was three for us. And the fourth is "wait"—four beats or four "what-have-you" in our method.

In seven and a half years of communicating almost solely by some application of the five-by-five matrix, I nor any one of my 400 companions experienced a need for another operating signal. That fact alone could save millions of dollars today.

One quickly realizes that the need to protect the channel is paramount. If you had been in isolation for a period of months and maybe years (as I had been) and suddenly get back to the "mainstream" and want to establish contact, you learn to be cautious about rushing into conversation. You learn to slow down and, first, agree with your partner about danger signals; second, you must agree on a cover story if you are caught; and third, you need to decide on a backup communication system.

Taking the trouble in that first few minutes of contact to say what happens "when we lose this net" has saved me more than once. You might simply specify a bent wire that indicates a hiding place for a note or an alternate call-up procedure—simplicity will get you by, but to ignore the need to establish fallback procedures first can mean months of communication interruption.

You are probably wondering at this point, "How in the world do you learn this monotonal code with its matrix alphabet without prior knowledge?" That is a good question. It turns out to be more of a theoretical than a practical problem. Sometimes you can stick notes in bowls of rice scheduled to be served, sometimes you can whisper under doors. One of my friends knew the matrix format when he came into the cell block for the first time. He explained that he saw it while forced to lie on the floor in the torture room. The matrix was diagrammed on the bottom of a table with the admonition, "All prisoners learn this code."

In the more common case, the "teacher" had to wait until the new prisoner had overcome his initial fear of working the wall by brushing it or thumping it. (He would have been threatened with going through the torture cycle again if he broke silence). The new prisoner had to decide to "take a chance" and hope that it was not a guard trying to trick him into violating the camp "rules" of absolute silence. For some to overcome such apprehension took months, for some days and for a very few, hours.

Experienced men found that for the most sluggish "student" it was best to commence by tapping 26 times on the wall. In a matter of minutes, hours, days or maybe longer (depending upon who the student was), the person on the other side realized that you were talking about an alphabet. He eventually made some kind of recognition signal of his own design and let you know he understood that another human was using an alphabet.

That is the start. Communication is fundamentally the connection of one brain to another and they are sensitive instruments. I stress this point throughout—do not sell your brain short, because it can do better than David Hume says and perform better than the artificial intelligence designers think it can.

Once the novice knows that you are talking about an alphabet, it is a good assumption that "A" is probably one beat and 26 is probably "Z." If this understanding was slow to develop, one way that was used was to send your partner an "8" and then a pause and then a "9." Eventually his mind lights up—"8," "9;" "H," "I"—"Hi!" Then you are in business—an inefficient business, but a corner has been turned in this brain-to-brain relationship. Now you can start the laborious hours and days of trying to describe the regular communications system by this very primitive code.

Procedure

But how did we call them up? How did we "roger?" What was the procedure? The answer was that we borrowed from a very American rhythm pattern for a call-up signal: the "shave and a haircut." When an American hears "shave and a haircut," even if he has never thought of a code, he almost automatically lunges to the wall and supplies his "two bits." We "rogered" with a "2," a "yes" as an affirmative signal after each *word* was copied or understood (of course, with some of the words that were long, you could tap them off early once you were ready to "buy" on the basis of what you had heard).

A very primitive form of encryption thus developed from the "early tap-off." The interloper who does not know your language and does not know what has transpired between your two minds and how well you understand one another cannot intercept. Abbreviations confuse him even more and abbreviation patterns can change over time with any two partners.

A man who is granted a contract to come up with an abbreviation table would probably give you something that would have to be changed almost entirely after the first month of use. But abbreviations hammered out in the field are solid. For example, frequently you had to use the word, "think" which was shortened to *TK*—I could go on and give you hundreds more examples. They grew up in different camps with substantial variations. As people were mixed and new "tappers" came on the other wall, it amounted to a system of dialects. Yet we became accustomed to one another's dialects easily. If we did not understand their abbreviation, we would not give them the "2" signal until they had spelled out the entire word.

What I have described thus far is a jam-free system that cannot be countered. First of all, you had the discrete signature of your partner—his individual style. For instance, no two people gave the old Steve Canyon flamboyant, "Roger, Roger" exactly the same way because the "tapper's" personality came out. You could recognize your friend by the way he expressed the "Roger, Roger"—by the speed, the touch and whether he meant "yes," "OK," "concur," or "good," "WILCO," "oh yeah?", or "yes sir" or whatever. I understand that the Soviets back up all of their telemetry nets with a key. I certainly understand why.

This matrix system lent itself to other applications such as a visual flash system. Also, every time a detailed man would sweep the courtyard, he would be sending out a regular newspaper. Snickers would be heard in the cell block and the guard would become rattled. Every time we swept our toilet buckets out we were acting as "town criers." We even developed a vocal tap code—I give credit to my "classmate" Jerry Denton for that. Ones or twos were made with coughs or sniffs. The number three was a throat clear; the number four was a hawk and number five was either an exaggerated sneeze or a spit, depending on the conditions.

For official traffic, the senior ranking officer insisted that all members memorize the message. That was our law, as nothing was written down, of course. We thus became acquainted with the storage capacity of our minds and how many words we could memorize. Of course, it placed a large weight on the message composer because he had to put things out in a logical pattern so that a reasonable man could memorize them handily.

I can remember one afternoon in the little prison nicknamed "Alcatraz" where several of us spent a couple of years and where I as the senior officer had been sending out a long series of messages concerning how we were going to combat what we called the "Fink Release Program" (this program was one people at home were supposed to think was a benevolent early release program, but it actually amounted to buying your way out by becoming a propaganda tool).

It was a complicated subject. I sent out six 50-word groups, flashing them on call across to Nels Tanner (I had to flash them because my cell was across the courtyard). After receiving each group, Nels would have to leave his place under the door where he had seen my finger, go to the wall and tap it out in both directions and come back under the door. It would take a couple of hours or more to get a 300-word message out to everyone composed well enough that they could all memorize it. I remember just before being put in irons for the night (as we were every afternoon at 4 p.m.), Nels was saying goodnight, (GN), under the door as he always said to me. He added that he had handled about 5,000 words that day—that is a lot of traffic.

All of this was happening in a place like "Alcatraz" where 11 of us, each in a tiny cell, were supposedly being thwarted in our communication attempts by two armed guards, each constantly patrolling, listening and

trying to find if there were any unauthorized sounds about. This activity went on for years.

Cryptography got more sophisticated as we handled classified information. We had date-time groups and we would "slide" the alphabet; additionally, we used a matrix to develop a script that really looked like chicken tracks, rotating the axes depending on the day and the date. What I am saying is that if you take about five good "commonsensical" manipulations with some versatility (such as a rotating axis, a slide and a convention for each day), and put them in series, you can come up with a code that cannot be broken. When I got home, I challenged the Defense Intelligence Agency (DIA) to break a sample that was written out to demonstrate to them the strength of our system and they could not do it because there were just too many variables. This illustrates the point that the human mind can come up with combinations in 30 minutes that computers can never break.

Summary

Why did I say earlier that we as communicators when immersed in the technical world, do not give enough credit to the human mind? First of all, we complicate matters by always looking for a perfect system. A perfect system serves an idiot—it is bound to be too complex. I think there is a lot of wisdom in old Admiral Gorshkov's maxim that, "The best is the enemy of the good enough."

Secondly as I said, I believe that an overblown communication capacity gives our military commanders bad habits. I recently told the Midshipmen at the Naval Academy in a speech that I think there is a greater possibility of their having to depend on their own initiative in an "out of communications" situation than was necessary for my generation especially because of the probable difficulties of radio wave transmissions in nuclear clouds.

You have got to think through the possibility of a communications blackout, and this is difficult when our officers are brought up in an environment of total communications. I had more trouble in Hanoi (even with senior officers), wasting too much time trying to speculate about what they thought Washington would think of our policies because they had been conditioned by good communications for years to be ill at ease when they were not able to "touch base" with headquarters. Imagine it—we were in a position where we knew more about how to run a prison organization than anybody else in the world at that time and our "conditioned" officers were uncomfortable relying on their own spontaneity and intuition!

Thirdly, I "badmouth" your profession because it seems to ignore Shelling's and other strategists' admonitions to not forget the tactical advantages of being out of communication. Think about it. If it is patently clear to your adversary that you cannot receive a message, there is no way he can send you an ultimatum. There are advantages to a commander when his troops know he cannot be contacted. They cannot ask for relief.

However, the bottom line is that there is no question of the importance of the linking of human minds in the face of an adversary. Communication cannot be stopped as long as the will to communicate exists. It has been my observation that in this computer age of specialized technology, there is still no substitute for the power of the human brain in meeting a seemingly insurmountable challenge.

Useful Be's

Work with ten Bs as you begin to communicate:

1. Be ready to speak. There's nothing as nice as a cheerful word of greeting.

2. Be ready to smile. It takes 72 muscles to frown and only 14 to smile.

3. Be ready to call people by name. The sweetest music to anyone's ears is the sound of his own name.

4. Be friendly and helpful. If you would have friends, be friendly.

5. Be cordial. Speak and act as if everything you do is a genuine pleasure.

6. Be genuinely interested in people. You can learn to like everybody if you try.

7. Be generous with praise, cautious with criticism.

8. Be considerate with the feelings of others. It will be appreciated.

9. Be thoughtful of the opinions of others. There are three sides to any controversy--yours, the other fellow's, and the right one.

10. Be alert to give service. What counts most in life is what we do for others.

--Adapted from Aerospace and Electronic Systems Newsletter (January 1980)

New Scrambler

A group of U.S. inventors has patented a device called the Phasorphone, which can protect private telephone conversations and business radio transmissions at a much lower cost than voice scramblers now on the market.

Signals scrambled by Phasorphone cannot be unscrambled without another Phasorphone and the applicable code for setting it.

Existing scramblers cost several thousand dollars a unit, but the inventors expect to market the Phasorphone for only several hundred.

--Information from the Newsletter of IEEE's Aerospace and Electronic Systems, June 1980.

Course or Self-Study

William A. Mambert is the author of a 30-hour course, Effective Presentation, which is also available as a programmed self-study kit in the Wylie Professional Development Series.

The course consists of ten units, all but one of which are divided into several segments:

1. Personal Communicativeness--acquiring a communicator's perspective and a philosophy of communication

2. Structure and Thesis--understanding the principles of logic

3. Kinds of Structure—learning how to combine ideas

4. The Functional Approach--establishing a purpose

5. Idea Support and Reinforcement—learning how to handle detail

6. Outlining and Data Gathering--collecting and organizing information

7. Idea Integrity—preparing effective introduction, body, and conclusion

8. Visual and Other Aids—using illustrations

9. Preparing to Face the Audience—making notes, rehearsing, improving presentation

10. At the Podium—behaving "correctly," "holding" the audience, analyzing feedback

These ten "steps" can be used to outline an overview of the process of making technical presentations, or be followed as a checklist when preparing a single presentation. Can you supply detailed instructions under each heading?

Revising Boilerplate

Government Version

1. Any amount advanced or expanded by the Government for the collection hereof or to preserve or protect any security herefor, or otherwise under the terms of any security or other instrument executed in connection with the loan evidenced hereby, at the option of the Government shall become a part of and bear interest at the same rate as the principal of the debt evidenced hereby and be immediately due and payable by Borrower to the Government without demand.

2. Presentment, protest, and notice are hereby waived.

Lawyer's Version

1. Any costs incurred by the Government in collecting this note or in preserving or protecting any underlining security or as otherwise provided in the note or security agreement may, at the option of the Government, become part of the principal debt, bear interest at the same rate as the principal and may be made immediately due and payable without demand.

2. Presentment, protest, and notice are hereby waived.

Consumer's Version

1. Any costs incurred by the Government in collecting this note: may be added to the unpaid balance of the loan, bear interest at the same rate as this loan, and are immediately due without demand.

2. In the event of default, the Government can demand immediate payment of the remaining unpaid balance of this loan without giving anyone further notice.

Simple Version

1. If the Government has to spend money to collect this loan, you will have to
   * Pay the collection cost immediately, and
   * Pay interest on the collection cost.

2. If you skip any payment or pay late, the Government can make you pay all the rest of the money immediately.

"Versions" from The Editorial Eye, Issues 35 (November, 1979) and 37 (January 80).

Computer Take-over ?

What will computers do next? Recent articles describe mechanized capabilities as follows:

1. Editing (The Editorial Eye, May 14, 1979)

If a document is written in ENYART Technical Language (basic and specialized vocabulary), a program EQUATER (Enyart Quality Assurance Text Editor/Revisor) will flag such errors as

excess length of sentences
incomplete sentences
ambiguous syntax
passive verbs
unclear reference of pronouns
noun clusters
improper or too-long modifiers

2. Typing (Smithsonian Magazine, March 1980)

OptoCon, a device developed for immobilized persons, tracks eye movements. The "typist" looks at letters of the alphabet in a desired order and the machine types the words thus "spelled out." A speed of 18 words a minute has been realized.

3. Reading (Smithsonian Magazine, March 1980)

If you place an open book face down on the Kurzweil Reading Machine, a synthetic voice will read the words to you in an imitation of natural speech.

4. Detecting brain waves (New York Times, March 11, 1980)

A computer has been used to signal the presence of a newly identified brain wave called N400, which occurs when the human mind tries to understand nonsense. For example, the sentence, "He spread socks on his bread," evokes the N400, but a misspelled word does not. Because of its ability to recognize the N400, the computer can be used as a diagnostic or research tool in the investigation of verbal skills, learning and reading ability, and the creative use of language.

5. Providing a full line of office services

Computer systems exist which will receive a document or dictation, return the material typed with words spelled correctly and layout as specified, make copies, distribute via video screen (bypassing the Postal Service), and provide tape or disk storage.

—Information derived from The Editorial Eye (May 1980).

Fumblerules Revised

(See April Newsletter for Fumblerules)

Fumblerules are funny because each one illustrates the error it warns against. The revisions suggested below express the "rules" correctly, but remember--for a well-considered purpose on a particular occasion, almost any such rule can be broken.

Be careful, however. Breaking a "rule" often leads to disaster, especially if the violation itself is so startling as to detract from its intended purpose. Try to get unusual effects "legitimately."

Don't use sentence fragments.

Proofread carefully to see if you left any words out.

Don't use commas that are not necessary.

Repetition can be eliminated by re-reading and re-editing.

Writers must not shift point of view.

Don't write in dialect.

Don't begin a sentence with a conjunction.

Don't overuse exclamation marks.

Place pronouns close to their antecedents.

Use hyphens sparingly.

Write adverbs correctly.

Don't use contractions in formal writing.

A careful writer avoids dangling participles.

Don't use old-fashioned words or phrases.

Never split an infinitive; or
Remember, never split an infinitive; or
Remember never to split an infinitive.

Don't write run-on sentences; they are hard to read.

Don't use double negatives.

Use the semicolon properly; it serves best to indicate a brief pause between two closely related sentences.

Reserve the apostrophe for its proper use; omit it when it's not needed.

Write positive rather than negative sentences.

Verbs have to agree with their subjects.

To end a sentence with a linking verb is sometimes thought improper.

Don't use incorrect verb forms that have sneaked into the language; or
Use correct verb forms.

Don't mix metaphors.

Don't use slang or jargon.

Don't be redundant.

Writers should use singular pronouns with singular nouns in their writing; or
Pronouns should agree in number with the nouns they stand for.

Don't exaggerate.

Use alliteration for special effect only.

Don't write several prepositional phrases in a series.

Use correct idioms.

Don't overuse quotation marks.

Don't use clichés.

Worst Sentences

PC-er Robert H. French of District Heights (MD) offers three bad examples from a proof-read contract report. The author of the report has a PhD in Electrical Engineering and his native language is not English. Neither of these facts, however, is sufficient to explain or excuse the carelessness displayed and the incompetence suggested in these inadequate messages. Editor needed!

#1

In every k digits of the X sequence on digit is replaced by the frame digit, (k-2) digits are used to scramble the date, only one digit is preserved during transmission, namely.

#2

Therefore in GF(2^5) the product between the element, $F_1(x)$ and in the element, $F_2(x)$ is the element, x+1.

#3

If we lift this digit out of every k digits of the transmitted data sequence and from a sequence.

Thoughts on Format

In July 1979, Edmund Arnold, author of three books on graphic arts, took part in a workshop at a convention sponsored by Agricultural Communicators in Education, and a report of his remarks appeared as "Graphics Overview" in the ACE Quarterly (July-September 1979). The paragraphs below present some of his ideas briefly:

You cannot make a fish bite on a hook, and you cannot make a reader read your printed communication. But you can put on "enough warm worms" to land the fish, and you can use techniques of "functional typography" to cajole potential readers into receiving your message.

Therefore, consider three aspects of print media that affect readers' ability to "stay with it":

a. The mechanics of reading--the knowledge and experience needed to decode all the illogical shapes of letters and arbitrary relationships of grammar into what the encoder really "meant" in the first place.

b. The psychology of reading--the attractions and deterrents that encourage people to read and "read on" or repel them from beginning to read and "turn them off" in mid-sentence.

c. The economics of reading--the problems of money and timeliness involved in producing and purchasing "hard copy."

The idea of functional typography is that every element on a printed page must do a useful and necessary job in one or more of these areas of getting people to "stay with it." Non-functional elements are mal-functional elements.

In a given instance, for example, should the type be large or small, plain or elaborate? What about format and spacing? What about headings, paragraphs, justification, pagination, photographs? Balance white space with text space; put headings under, not above, graphs, pictures, and tables.

Nothing will guarantee 100% readership, and getting 80% is a minor miracle, so fight for individual readers. Each reader has only a certain amount of time that he will devote to any publication. "When that time is used up, whether it has been used productively or whether it has been wasted--when that time is done, he is done. Whether he is on page five or page 55 or anywhere between, this is it."

So be sure that every typographical element "works" to keep readers with you. Make each page look inviting and uncomplicated. Don't force the reader to guess, don't let him feel confused or tired or even the least bit bewildered.

Remember, you are competing for every reader's attention against every piece of printed matter that comes into his house or his office. Lure readers, like fish, with "warm worms" and careful preparation.

Washingtonese

From a House Bill on a tax revision law:

If any credit allowed for any taxable year is increased by reason of a credit carryback, such increase shall not affect the computation of interest under this section for the period ending with the last day of the taxable year in which the credit carryback arises, or, with respect to any portion of a credit carryback from a taxable year attributable to a net operating loss carryback, . . . such increase shall not affect the computation of interest under this section for the period ending with the last day of such subsequent taxable year.

--Reprinted from the Aerospace and Electronic Systems Newsletter, July 1979.

Eh ?

The thesis of this essay is at the same time straightforward and radical. I suggest that a hermeneutic phenomenology of communication stands dialectically juxtaposed to a logical positivism of communication such that the former functions as a presuppositional critique of the latter.

--From an Article in the Journal Communication Quarterly, Vol. 25, No. 3, via the AESS Newsletter, January 1980.