The Need For Heroes

The article by S.H. Unger ("The Need for Heroes," Jan./Feb. issue), addresses timely and important questions regarding engineering employment. While I sympathize with the general tenor of his remarks, I believe the "Oath for Scientists and Engineers" to be much too general to be meaningful.

As one example, consider the sentence "I will not use my scientific training for any purpose which I believe will be used to the harm of any human being." Is the engineer working on a burglar alarm involved in harming another human being—the burglar? Are those few of us left in the defense-related industry working to harm other human beings? Or would we be harming human beings more if we stopped working?

I believe a much more mature formulation of professional obligations of engineers is required.

H. Hecht
Los Angeles, Calif.

We would like to receive — and publish — letters from you on topics of interest to other professionals in the computer field. And we welcome your comments about individual articles appearing in the magazine as well as where you think we should place more editorial emphasis or where we're missing the boat altogether. (This becomes particularly important since we're discontinuing the readers service card with this issue. Instead, we're furnishing the company's address so you can make direct contact concerning products or applications featured in COMPUTER.) So, if you have a comment, some invective or some praise (always welcome) write to: Editor, COMPUTER, IEEE Computer Society, 8949 Reseda Blvd., Northridge, Ca. 91324. We'll be glad to hear from you.

— Ed.

Optical Computing Symposium

A one-day, in-depth symposium on Optical Computing will be held April 12 at the Norton School in Darien, Connecticut.

Co-sponsors are the IEEE Computer Society Connecticut Chapter and the Naval Underwater Systems Center; cooperating sponsors are the Connecticut Section, Fairfield County Subsection, Southwestern Connecticut Section of the Optical Society, and CBS Laboratories.

The symposium is interdisciplinary in nature and will consider those optical methods of computation that permit one to obtain results in the areas of image sharpening and character (pattern) recognition which exceed in quality and speed of execution results obtainable using the most powerful state-of-the-art digital computers. A by-product of these techniques is the development of optical memories which offer great promise as mass storage and processing media. Significant applications of these image sharpening and pattern recognition techniques exist in the areas of biomedicine, astronomy, radar, ultrasonics, and microscopy.

For information contact Robert J. Doyle, technical chairman, CBS Laboratories, High Ridge Road, Stanford, Ct. 06905.

Workshop on Privacy and Protection in Operating Systems

A workshop on privacy and protection in operating systems sponsored by the Technical Committee on Operating Systems of the IEEE Computer Society, will be held in Princeton, New Jersey on June 13 and 14, 1972.

The workshop will consider the problems that arise when many users have access to a computing system simultaneously and some must be restricted in their use of the system or their access to information stored in the system. Such topics as cryptographic techniques and physical security arrangements will not be included. Rather, those aspects of operating system construction which make it possible for users to do useful things in restricted environments, and pertinent hardware considerations, will be the main subjects of discussion.

Attendance at the workshop will be limited to approximately 30 people who are currently working actively in this field. Those interested in attending should send a research summary and abstract of their proposed presentation to the chairman and organizer of the workshop:

Dr. R. Stockton Gaines
Institute for Defense Analyses
Von Neumann Hall
Princeton, N.J. 08540

Japan in June

The IEEE Computer Society is making special arrangements for a group to Japan to coincide with the Tokyo Conference, "Islands of Applications," being held June 8 to 13, 1972. The Group inclusive tour will include round trip air transportation (by regularly scheduled airlines), hotel in Tokyo, sightseeing, and other special arrangements.

The tour will depart from California and Honolulu on June 4 and return June 18, 1972. Arrangements are being worked out so that members
of IEEE, their families or friends, can take advantage of the substantial savings regardless of where they originate from in the United States.

All reservations and ticketing will be handled through a travel agent and optional side tours will be available. You will also have the opportunity of stopping over in Hawaii.

The savings for each person in the group as against individual prices would be approximately two to three hundred dollars. Based on the latest available data the total airfare from the East Coast will be approximately $700 and from the West Coast approximately $450. In addition to the airfare, the tour requires a minimum of $200 per person for the land portion which can be used to cover hotels, sightseeing, and certain other features. For further information write:

Tokyo Conference
Post Office Box 639-Woodmoor Station
Silver Spring, Md. 20901

Japan in October

On October 3–5 AFIPS and the Information Processing Society of Japan will present the USA-Japan Computer Conference in Tokyo.

This meeting is designed to bring together leaders in computer technology and its uses from the two sponsoring countries. In the technical sessions, the stress will be on presentations that show similarities and dissimilarities in approaches taken by people in both nations to solve similar information processing problems. There will also be a major exhibit program, featuring products and services from both countries, as well as post-conference technical tours. To accommodate U.S. registrants, charter flights to Japan are planned.

Conference chairmen are Dr. Shohei Takada of Hitachi and Dr. Robert W. Rector, University of California, Los Angeles.

For further information, contact Robert B. Steel, Informatics, Inc., 21050 Vanowen Street, Canoga Park, Ca. 91303.

Reduced Overseas Air Fares

Again this year the IEEE is offering its members the opportunity to qualify for affinity group fares when flying to attend conferences held outside the U.S. and sponsored by the IEEE unit. As in 1971, these groups are being assembled by the National Center for Educational Travel which is responsible for all flight arrangements.

For additional information, contact NCET directly. Their address is: National Center for Educational Travel, Inc., 1601 Connecticut Ave., N.W., suite 801, Washington, D.C. 20009, (202) 232-1166.

Magnetic Recording Seminar

A one-day seminar on “Advances in Magnetic Recording Engineering” will be held April 24 at the Bell Telephone Auditorium, 1 Parkway, Philadelphia, Pa. Sponsors are the IEEE Philadelphia Section and the Committee on Basic Science.

Invited technical representatives from the industry will discuss the present status and future prospects of the magnetic recording technology.

Advance registration is $12 for IEEE members and $15 for non-members ($3.00 additional at the door). Mail registration fee to Helen B. Yonan, IEEE Office, Moore School of E.E., University of Pennsylvania, Philadelphia, Pa. 19104.

72/SJCC Chairman

Dr. John E. (Jack) Bertram, IBM Director of Engineering, Programming and Technology, will serve as General Chairman for the 1972 Spring Joint Computer Conference. According to an announcement by the American Federation of Information Processing Societies (AFIPS), sponsor of the Joint Computer Conferences, Dr. Bertram will head a New York-based steering committee responsible for the overall planning and implementation of the 72 SJCC to be held in Atlantic City Convention Hall, May 16-18.

Systems Performance Evaluation

The objective of the Workshop on Systems Performance Evaluation held at the Argonne National Laboratory, Oct. 1971, was to promote an exchange of ideas and techniques among those actively participating in the measurement and modeling of computer system activity. The multi-disciplinary approach to the problems encountered was exhibited by session titles and papers presented within the sessions.

The sessions on System Performance and Evaluation Criteria described some of the tools and techniques used in measurement systems and analysis methods for collected data. This session also introduced the problem of selection of metrics and criteria for performance evaluation, topics which were further emphasized in both formal and informal meetings during the workshop.

The session on Scheduling and Resource Allocation included topics ranging from the efficient scheduling of multiprocessor systems by precedence relations; memory migration in paged memory systems; to the automatic compile time analysis of programs for determination of memory page requirements.

The session on Language Studies included several topics. Among these were software measurement sampling techniques, compiled statement and error measurement, compiler parser performance measurement, and analysis of the uncertainty in program run time in multiprogrammed systems.

The session on Modeling Techniques treated evaluation by
means of analytic models of devices and systems. Included in the discussions were the use of time-series analyses applied to measurements on interactive information retrieval systems, validation of assumptions by various statistical tests, the use of graph models for statistical evaluation of program run time, and the simulation and analysis of file management systems by means of parametric representation of static file descriptions and dynamic file transactions.

The Multiprogramming Systems Measurement session addressed several questions concerning this particular environment. One paper considered the assumptions made whenever the techniques of stochastic processes and modeling with measurement data used queueing theory are applied to system to analyze these assumptions. Another presentation described the implementation of a subsystem supervisor used in detecting and recording critical operating system parameters. A final paper discussed several memory usage measurement techniques that may be applied to job measurement.

The session on Special Systems Measurement described current and potential measurement possibilities in unconventional environments. One system contains a major replacement of software with functional hardware, allowing significant performance evaluation without artificial constraints being placed on user programs, and another paper described the use of a large processor in measuring other real-time computer systems via telephone lines. The features of data recording and operation in "interrupted real time" were described. A final paper described features of a modeling program for evaluation of self-repair and fault-tolerant digital systems.

The final session on Time Sharing Systems Measurement featured presentations on the measurement of response time in time-sharing systems by means of driver programs simulating large numbers of terminals, measurement of user terminal behavior, and measurement and modeling of communications-oriented real-time systems.

Conclusions
General audience participation and reaction appeared quite favorable, and later written comments indicated approval of technical content, accommodations, and general organization. Some discussion of further workshops on the topic arose, but no organizational actions evolved at that time.

Richard A. Aschenbrenner
Program Chairman

72/FJCC Site
Switched to Anaheim

The 1972 Fall Joint Computer Conference will be held December 5-7 in the Anaheim Convention Center, Anaheim, California. The conference had been initially planned for November 14-16 in Las Vegas.

"The selection of Anaheim," said AFIPS President Keith W. Uncapher, "has been prompted by several factors, the foremost being our responsibility and obligation to make the FJCC as accessible as possible to those in the computer field and to EDP users. As with other high technology fields, the computer industry has been greatly impacted by recent adverse economic conditions. In response to this and in view of the still uncertain economic outlook, we believe it essential that the JCC's be held at sites close to the population centers of our field."

"In addition," Uncapher added, "AFIPS has a prime responsibility to the many organizations who participate in the JCC's as exhibitors. We believe the Anaheim location will facilitate increased attendance from the greater Los Angeles area, especially on the part of individuals wishing to spend only one or two days at the FJCC. The new one-day registrations for the conference technical program will also permit many individuals to attend conference sessions in Anaheim without the necessity for extensive travel arrangements."

According to Uncapher, the original selection of Las Vegas as a site for Fall Joint Computer Conferences was made several years ago during a period when the computer field was experiencing unprecedented growth. The ability of the Las Vegas facilities to accommodate over 25,000 attendees and up to 1,000 exhibit booths was a prime factor in their selection. However, he noted, current economic conditions and their impact on the size of the JCC's have forced AFIPS to undertake a rigorous re-examination of available sites in keeping with present industry and professional needs.

IEEE PRESS Publications

The first two titles in the new IEEE PRESS Selected Reprint Series were published in November 1971 and a third is to appear soon. Other volumes are being readied for publication later in 1972.

Already published are Active Inductorless Filters, edited by S.K. Mitra of the University of California, and Clearing the Air: The Impact of the Clean Air Act on Technology, edited by John C. Redmond of General Dynamics, John C. Cook of Teledyne Geotech Company, and A.A.J. Hoffman of Texas Christian University. A Practical Guide to Minicomputer Applications, edited by Fred F. Coury of Hewlett-Packard Company, will be published in January. The first of these books is sponsored by the IEEE Educational Activities Board, the second by the Geoscience Electronics Group, and the third by the IEEE Computer Society. See the advertisement in the January 1972 issue of IEEE SPECTRUM for a description of these three books and for ordering information.
Switching Theory Call

The Thirteenth Annual Symposium on Switching and Automata Theory, sponsored by the Switching and Automata Theory Committee of the IEEE Computer Society and the Electrical Engineering Department of the University of Maryland, will be held in College Park, Maryland on October 25, 26, and 27, 1972. Papers describing original research in the general areas of switching theory, automata theory, and the theoretical aspects of computers, computation, and programming are being sought. Typical (but not exclusive) topics of interest include: Algorithms of Theoretical Interest; Automata Theory; Cellular and Iterative Networks; Computational Complexity; Formal Languages; Mathematical Foundations for Computation; Program Schemata; Reliability and Fault Diagnosis; Sequential Machines and Asynchronous Circuits; Theory of Algorithms; Theory of Parallel Computation; Theory of Parsing and Compiling.

Authors are requested to send six copies of an extended abstract (no word limit) by May 17, 1972, to: Professor Richard M. Karp, Department of Computer Science, 573 Evans Hall, University of California, Berkeley, California 94720.

The abstract must provide sufficient detail to allow the program committee to apply uniform criteria for acceptance, and should include appropriate references and comparisons with extant work. It is also helpful to include a brief interpretation of the major results and explanation of their significance. A total of five to eight typewritten pages is suggested.

Authors will be notified of the acceptance or rejection of their papers by July 3. For inclusion in the conference record, a copy of each accepted paper, typed on special forms, will be due at the above address by August 14.

Local arrangements for the conference are being handled by: Professor James H. Pugsley, Electrical Engineering Department, University of Maryland, College Park, Maryland 20742.

Microprogramming Call

The Fifth Annual Workshop on Microprogramming is seeking papers on any topic relating to the theory, design, or use of microprograms. Both presentations of written papers and informal working sessions based on panel discussions will be featured at the workshop, which will be held on September 25 and 26, 1972, at the University of Illinois at Urbana. It is sponsored jointly by the ACM Special Interest Group on Microprogramming and the IEEE Computer Society. Professor C. W. Gear of the University of Illinois is general chairman.

Papers, proposed panel topics and requests to participate as a panel member should be submitted to the program chairman: Mr. Richard Borovec, Department of Computer Science, University of Illinois, Urbana, Illinois 61801.

Papers must be submitted in triplicate for refereeing no later than May 15, 1972. Panel topics and requests to take part in a panel must be submitted by July 15, 1972.

Attendance at the workshop will be by invitation only. Registration details or other information may be obtained from Mr. Lee Hollaar at the address above.

FJCC/72 Call for Papers

"Coming of Age," is an appropriate theme for the 1972 Fall Joint Computer Conference, the 21st year of the JCC's. We've grown up not only in size but also in years. With age comes responsibility; with maturity comes insight. Your Program Committee has taken the responsibility for developing a program of high quality. If you would like to be a contributor, let's hear about it. Subject areas which should be covered by the technical program include: User Applications and Requirements; Software Development; Architecture Trends and Limitation; Measurements, Analysis, and Evaluation; Terminals; Communications; Reliability; Complete Systems and Networks; Social Issues; Hardware Advances; New Ideas-Try Us.

A profile of the "Checkless Society" will be developed as an adjunct to the main technical program. This program should be of special interest to all attendees of the '72 conference. These added sessions will explore the technical, social, legal and control aspects of this coming development.

Again, let's hear your ideas and insights.


Theory of Computing

The SIGACT-sponsored Fourth Annual ACM Symposium on Theory of Computing, will be held May 1-3, 1972 at the Heart O' Denver Motel, 1150 E. Colfax Ave., Denver, Colo. There will be twenty-nine talks in the general areas of program schemata, computational complexity, theory of algorithms, automata, formal languages and theory of compiling.

Written papers will be published and distributed to registrants at the conference. The proceedings will also be available after the conference from the ACM order department. The purchase price for the proceedings of this and the previous three ACM Symposia on Theory of Computing is $10 for members of ACM and/or SIGACT and $12 for nonmembers.

Students will be welcome at the technical sessions without registration fee; they may purchase proceedings and tickets to special events separately, if available.

For further information and advance registration forms, write to: Prof. Jeffrey D. Ullman, Department of Electrical Engineering, Princeton University, Princeton, N.J. 08540.
IEEE Elects Board

The Annual Assembly of the IEEE has elected the following to the IEEE Board of Directors for 1972. In the past the Annual Assembly met early in January to elect those officers to the Board to fill additional positions not open to election by the general membership. This year, for the first time, the elections took place late in November allowing all 1972 offices to become effective January 1.

The IEEE Officers elected for 1972 by the Annual Assembly are: Vice President Publication Activities — Dr. C. L. Coates, Jr., University of Illinois, Urbana, Illinois; Vice President Technical Activities — Mr. J. K. Dillard, Westinghouse Electric Corp., East Pittsburgh, Pennsylvania; Treasurer — Mr. R. W. Sears, American Institute of Physics, New York, New York; Secretary — Mr. A. P. Stern, The Magnavox Company, Torrance, California; Vice Chairman Technical Activities Board — Dr. E. A. Wolff, NASA Goddard Space Flight Center, Greenbelt, Maryland; Chairman Awards Board — Dr. E. L. Ginztom, Varian Associates, Palo Alto, California; Chairman Educational Activities Board — Dr. Glen Wade, University of California, Santa Barbara, California; Director-at-Large — Mr. Seymour Cambias, Jr., New Orleans Public Service, Inc., New Orleans, Louisiana (Seymour Cambias will fill J. K. Dillard's unexpired elected term of 1970-72).

Dr. James H. Mulligan, Jr., IEEE President in 1971 becomes Junior Past President for the year 1972. Dr. Mulligan is Executive Secretary, National Academy of Engineering, Washington, D.C.

IEEE Officers for 1972 elected by the voting members are: President — Mr. Robert H. Tanner, Director of Information, Bell-Northern Research, Ottawa, Ontario, Canada; Vice President — Dr. Harold Chestnut, Consultant, General Electric Corporate Research & Development, Schenectady, New York; Regional Delegates/Regional Directors, 1972-73 — Mr. Harold S. Goldberg, Data Precision Company, Wakefield, Massachusetts; Mr. Grover F. Daussman, Military Department of Tennessee, Nashville, Tennessee; Mr. William E. Cory, Southwest Research Institute, San Antonio, Texas; Mr. Douglas M. Hinton, Bell Canada, Belleville, Ontario, Canada; Mr. Ernesto Obregon, Colsegueros, Bogota, Columbia. Divisional Delegates/Divisional Directors, 1972-73 — Dr. M. E. Van Valkenburg, Princeton University, New Jersey; Mr. Linder C. Hobbs, Hobbs Associates, Inc., Corona Del Mar, California.

“In addition to welcoming Mr. Koory to this position,” he continued, “we express our appreciation to former JCC Committee Chairman, Dr. Albert S. Hoagland. Dr. Hoagland, who relinquished this position due to expanded activities related to his recent election as President of the IEEE Computer Society, will remain a member of the JCC Committee.”

Jay Forrester Honored

Jay Wright Forrester, Professor of Management, Massachusetts Institute of Technology, Cambridge, Massachusetts, has been awarded the Medal of Honor of the IEEE.

The IEEE Medal of Honor, awarded for a particular contribution which forms a clearly exceptional addition to the science and technology of concern to the Institute, goes to Dr. Forrester: “For exceptional advances in the digital computer through his invention and application of the magnetic-core random-access memory, employing coincident current addressing.” Dr. Forrester will receive a gold medal, certificate and $5000. Presentation of the Medal of Honor will be made at the annual banquet of the Institute March 22, 1972 at the New York Hilton, the major social event of the IEEE International Convention and Exhibition (IEEE INTERCON), which takes place March 20-23, 1972.

In addition to his pioneering work in computer memories, Dr. Forrester has more recently applied the analytical tools available through this computer revolution to major problems of modern society, especially those so difficult to model as industries and cities. In these activities, he has attempted with some degree of success to set up models that show how cities build up, level off, and then decay, and likewise how more general problems of a social character relating to waste pollution, natural resources, housing, population, etc. interact with each other to generate future crises.
Short Courses


Computer Monitoring Workshop, $135. (incl. lodging and meals) April 6-7, 1972, Brigham Young University, Attn: Ronald F. Mulberry, Special Courses and Conferences, 242 HRCB, Provo, Utah 84601.

Image Processing, Coding, and Transmission June 5-9, 1972, Purdue University, Attn: Paul A. Wintz, School of Elec. Eng., Lafayette, Ind. 47907.


The University of Wisconsin will be conducting the following short courses:


UCLA will be conducting short courses April thru June on:

- Computerized Structural Analysis, Computer Analysis of Networks: ECAPIII

- Analysis and Digital Computer Methods in Engineering, UCLA Extension, P.O. Box 24901, Los Angeles, Ca. 90024.

JCC Proceedings Available

Proceedings of the 1971 Fall Joint Computer Conference, November 16-18 in Las Vegas, are currently available from the American Federation of Information Processing Societies (AFIPS).

The Proceedings, Volume 39, contains 68 formal papers presented at technical sessions plus 28 panel “position papers.”

Papers cover a wide range of areas important to computer professionals and to others concerned with the application of EDP technology. Included is coverage of such diverse sessions as: “Computers in Medicine — Problems and Perspectives”, “Data Security in Data Base Systems” and “Simulation of Environmental Dynamics.”

The price for the 678 page volume is $26.00. A reduced rate of $13.00 is available for pre-paid orders from members of AFIPS’ Constituent Societies, stating their affiliation and membership number. In addition to the hard-cover volume, the Proceedings are also available on microfilm and microfiche.

Copies of the Proceedings may be ordered by writing: AFIPS Press, 210 Summit Avenue, Montvale, New Jersey 07645.

Miller ACM Journal Editor

The appointment of Dr. Raymond E. Miller as Editor of the JOURNAL of the Association for Computing Machinery (ACM) was announced by Eric Weiss, Chairman of the Publications Board.

Dr. Miller is the sixth editor to serve in this prestigious position and succeeds Dr. Gerald Salton who has done a distinguished job as editor for the last two years.

Dr. Miller is a Fellow of the Institute of Electrical and Electronics Engineers. He was Chairman of the IEEE Technical Committee on Switching and Automata Theory for the past three years and Area Editor for Theory of Computation of the JOURNAL of the ACM since November 1969.

He has written numerous papers in switching theory and parallel computation and is the author of the two volume book, Switching Theory, published by John Wiley and Sons.

Computer Computation Symposium

A three day symposium on recent research on complexity of computer computations will be held March 20-22, 1972. The Symposium, sponsored by the Mathematical Sciences Department of IBM Research and by the Office of Naval Research, will be held at the Thomas J. Watson Research Center in Yorktown Heights, New York.

Studies in complexity which are closely related to how computations are actually performed on computers will be the focal point of the symposium. This area of study includes lower bounds on the number of operations required in computations such as sorting, combinatorial problems, matrix and polynomial calculations, and the number of steps required in certain iterative computations. Also of interest are improved algorithms for performing calculations along with theoretical and experimental evidence concerning the efficiency and numerical accuracy of the algorithms.

It is expected that there will be about eight one-hour and eight half-hour talks. The preliminary list of speakers includes John E. Hopcroft, Richard M. Karp, Michael S. Paterson, Michael O. Rabin, Volker Strassen and Shmuel Winograd. The proceedings of the Symposium will be published.

For further information please contact Mrs. Jean Bohlinger, Mathematical Sciences Department, IBM Thomas J. Watson Research Center, P.O. Box 218, Yorktown Heights, New York 10598. Phone: (914) 945-2331.