SCRAP
BOOK
Vol. 2

printout
Reach for Excellence
Large Information Systems Division ■ Honeywell ■
Vol. 12 No. 40
September 30, 1982

Air Force makes long-term commitment to Multics

The United States Air Force has announced a $57.1 million award to Honeywell Information Systems, for life-cycle funding of the Multics systems in the Air Force Data Services Center in the Pentagon. Multics was chosen initially because of its ability to handle data with multiple security-classification levels simultaneously and safely.

The Air Force already has 12 Multics processors installed at this site, and recently ordered four 8/70M processors. They are expected to order additional 8/70M equipment in 1983, making this the world's largest Multics installation. In addition to funding these equipment purchases, the Air Force award will pay for Honeywell hardware maintenance and services, software training and system analysts to be stationed on-site.

Bemer Retires from Honeywell

(but not from work)

"Robert W. Bemer, one of the computer industry's 'grand old men', is young and energetic in his appearance and outlook," wrote Computing in 1973, a paper for The British Computer Society. After interviewing Bob, it is clear the statement still fits. Bob will be retiring from Honeywell on September 30.

Since 1949 Bob Bemer has been an inventor, user, and as he put it, "a programmer." He is the 'father of ASCII' (American Standard Code for Information Interchange) * and has the personalized license plate to prove it. He was an IBM employee for 6 ½ years, with Univac for three, and then a member of GE--later Honeywell. Bob is extremely well known in the computer industry. He possesses a broad knowledge of the industry and has contributed many innovations to the field. He was very active in the early stages of computer language development and has contributed to the formation of several programming languages still in use today, such as early inputs to COMTRAN, a language developed for IBM, which was later absorbed into the language called COBOL.

Several of his major accomplishments were in the area of computer standardization. He was one of the major contributors to the IFIP vocabulary, and coined the phrase "software factory" in 1968, which means giving programmers useful tools for their work. As program Chairman of the ACM (Association for Computing Machinery) 70 Conference, he introduced a new concept for ACM's conventions--to present detailed analyses of various application areas. Bob was also the editor of the Honeywell Computer Journal which won many international accolades. Even more important to LISD, Bob has contributed greatly to text processing methods. He wrote papers on the subject as early as the 1960s and was instrumental in getting the American National Standards Institute (ANSI X3) Committee to approve a standards project on text processing.

Most recently, Bob is best known for being a promoter of TEX™ (Text EXecutive processor), which is used by almost everyone working with GCOS. His latest accomplishment is the Screen Environment™. Almost as an afterthought, Bob remarked, "I made up the name COBOL, I invented the environment, identification division, and the picture clause." For those in software, that is not the typical day's work. As a co-worker put it, "He's a genius." When asked what he felt was one of his biggest accomplishments he said, "I always have thought it's funny that I was the first programmer interviewed by the New Yorker Magazine." He answered seriously with an explanation of his innovation--"the

* Bob's most important do, in my view. — Richard Max

P.S. — In some notes we included Jack Ring's question: "Bemer, are you sure you're not really Grace Hopper in drag?" — RMP

NOTE: "KNOCK-KNOCK." "WHO'S THERE?" "G. EMERSON." "G. EMERSON WHO?" "G. EMERSON, good lookin' page ya got there, babe."

Bemer Retires

(cont. from pg.1)

escape sequence, the reverse slash, and four other characters in ASCII, which are on everyone's terminals around the world." The escape sequence sends the cursor, a blinking locator light, around the screen.

After Bob's work for Honeywell is complete, he begins his retirement with a self-owned company formed around his Screen Environment tm innovation, with Honeywell's approval. He plans to get heavily involved in programming picture-driven processing. Instead of using forms and languages the user would use pictures to designate what action is required. In Bob's words, "you would send a picture of a boy to the barn if that's what you needed done. You wouldn't have to know programming languages." Bob's retirement party posters read, "Bob Bemer Retires from Honeywell, but not from work!"--Happy Retirement, Bob.

The GCOS Development Center (GDC) celebrates an accumulation of 115 developer years of effort at a September service award luncheon. From left to right, Pete Dressen, Director of GDC and Dick Litschgi, VP-Software Development congratulate Lester Massey (25 yrs); Ed Roddy, Dorthea Clarke, Bob Brandt (30 yrs each). Dewey Manzer, our Vice President and General Manager, also attended the luncheon.

WESTERN WEEK *is next week. Wear your western apparel, hats, blue jeans, boots . . .*

82-10-03

B. and M. — We really enjoyed the GREEK food Eric set up for you two. For me yours was the most fun farewell fling I've experienced. So I sent copies of this page to Grace Hopper, Dr. Herbie and Mary Charlotte Mitchell (in South Africa), to my software son, Eric, in Albuquerque, to Dr. I. David Hill in England, to my 93 year old Uncle Waldo in Iowa, to my big brother, Dr. Roger Gene, a prof. at O.S.U. in Corvallis, and to other friends and relatives far and wide. — Pete

Software Quality Emerging as a Management Issue

By Edward J. Bride
Software News

HOUSTON—Software quality is becoming more and more of a management issue, and less a technical one, if you believe the views of several specialists in the area.

During a session at the National Computer Conference, speaker after speaker advised a sparse audience that the Quality Assurance (QA) team faces the usual problems of managing any project in a large organization.

Many of these problems revolve around the need for solid communications channels among project members. And when the QA manager acts like a "watchdog" rather than a team member, communications break down and alienation begins.

Chuck Lybrook, vice president for software quality at Chemical Bank in New York, said the members of the QA team need to be considered as information sources for their technical peers, rather than as bureaucrats.

Furthermore, the QA team must have a management orientation. "A good technical solution may not always be the best management solution," he said.

Putting it another way, he also suggested that the QA team must help the technical team distinguish between what is important and what is not, adding there will never be a perfect system built.

"That's why I can say that not everything worth doing is worth doing well," Lybrook said.

The man in charge of Texas Instruments' (TI) software product quality agreed with Lybrook's characterizations.

John Ryan, manager of software quality in TI's computer and peripherals division said, "our role is to provide an objective assessment" of a project status to the project leader.

Bemer Blasts "Terrible Waste"

By Mary-Beth Santarelli
Software News

HOUSTON—"I'm enjoying the developments of today, but my pleasure is a bit spoiled by the terrible waste in software development and so much poor software," said Robert Bemer, one of computing's pioneers who spoke at the National Computer Conference here.

Bemer, a consultant at Honeywell in Phoenix, Ariz., remembered the limitations of early software, and the way programmers were required to tailor problems to fit requirements.

For example, he noted that one company had a software package that manipulated matrices and performed combinatory functions. Therefore, all problems were expressed in matrix form, even if this was not a "natural" way to find the answer, said Bemer.

"Many of today's software packages have similar contortional requirements upon the user," according to Bemer.

The AFIPS
History of Programming Languages Committee
requests the honour of your presence
at a dinner
recognizing the achievements
of the FORTRAN Pioneers
on Wednesday, June 9, 1982
in the Century I Ballroom
Stouffer's Greenway Plaza Hotel
Houston, Texas
7:00 P.M. for Cocktails
7:30 P.M. for Dinner

case by realising the significance of the silence of the watchdog [illegible]s owner was the criminal.

The same, explanation can be offered for the silence of Labour's Front Bench. Indeed, the leadership of all major parties play the Parliamen-

They should also be serious and interested in what is being done in their na[illegible]by security agencies, lift a bit of the cloak of secrecy, and open the government system before further encroachments are made on the privacy of citizens.

Such moves, however, do little for the stability of the UK computer industry and ten[illegible]tie down the management of these subsidaries, quite successful in their own right, with the complicated job of knitting into a new organisation.

Now we can take off the corporate corset

By Hedley Voysey

The Amenities Trust responsible for these pages has given me permission to celebrate 25 years in computing on April 1, 1982. There was some mention that I must not leave litter lying about.

An April Fool's errand is described by some as 'a bootless errand', so whether the time spent has been profitless should be mentioned, and perhaps accounted for in some way.

The adrenalin and hilarity counts are good for the period. Dark secrets have been mixed with light relief and high endeavour has been balanced by demonstrations of low cunning.

The concerns of the first five years are much the same as the great issues of today. The French suddenly designed a machine, the Gamma 60, about 1960, which opened up new avenues for computer architecture. It discussed, in a muted form, what local area networks discuss in a bellowing tone today. We are still trying to disperse portions of computing competence, without losing track of how to arbitrate on what to do next.

IBM had a thing called the 'Squoze' deck which did very useful things in a way nobody liked, but a lot of people went and used it. Somehow or other, IBM had employed Bob Bemer who wrote a paper called *A Checklist of Compiler Intelligence* which still can suggest useful things to do for systems software people. The idea of an International Algebraic Language was afoot and it eventually turned into Algol 60, and Bemer thought it was probably a good thing and so IBM had to let him go.

The people who signed the cheques for computers were never the users. So they bought them to act as a corporate corset for where they thought there was flab. The trend of doing things to people via computers was under way and that has not changed either. However, it is now much more likely that some users of computing systems are involved with finding the money for them, and that has helped enormously to check the greatest absurdities in systems design.

But the big money is still invested in systems which tend to value the technical competence of the system rather more highly than the competence of the staff associated with it in business functions. There is however, less need to re-arrange the work around the machine, because the cost has come down, and the competence has gone up. So staff can actually resist having tasks re-moulded for machines.

The cheapness of computers means that not only can they be used by big organisations, obsessed by the technical, but they can be used by small groups of people to keep track of organisations with technical obsessions. It remains to be seen whether countering poorly designed computer systems by other computer systems is of much value.

The era has witnessed a fascination by administrators with systems of rules, partly because of computing's features. Rules do not substitute for involvements with people that result in judgments by people. These judgments help to form the rules.

Regional meeting in the national interest

By Meinard Donker

The people crowding into the Maison de la Culture at Rennes on March 4 looked like a typical concert audience. Students in blue jeans mingled with suited business types from this prosperous Brittany town. By 8.30pm they had filled the 1,000 seats available, where they were to remain until nearly midnight.

It was not Beethoven who had brought them together, but the Annuaire Electronique — the electronic telephone directory which is the locomotive drawing French business into the telematics age.

This was the first public debate organised around the development that will affect the population of France earlier, and to a greater extent, than that of any other country. The panel on stage in front of this large audience reflected the fact: Jacques Dondoux, the director general of telecommunications, and other members of the administration sat alongside one of the Annuaire's most lively critics, the managing editor of the newspaper *Ouest France*. Next to him was one of the first members of the public to use the new 'Minitel' domestic terminals, who disarmingly admitted that his three sons had mastered its search procedures shortly after the neat little terminal and keyboard had been delivered to his house, and they had initiated him on his return from work.

The debate had been masterminded by a body known as Granit — which stands for the Armorican Group on Information Processing and Telecommunications. It is as though the Post Office had made Cardiff a centre of research, development and experimentation and a Welsh think-tank had staged Britain's first debate on the country's most important new industry. During the evening someone lightheartedly asked, in French, when the Annuaire would be available in the Breton tongue.

The region is taking its role as the pilot area extremely seriously and it was rewarded with a debate that, if it came to no conclusions about the matter, at least ensured that all sides made their views heard.

We learned some hitherto unpublished facts about the use of videotext in France: for instance, that the JEF electronic newspaper published by a group of periodicals for the subscribers to that other videotext experiment at Velizy near Paris was the most utilised information on the system.

We also learned that every local administration in France now has videotext entry nodes to the national Transpac network, thus opening the way for interaction between Minitel terminals and business computers linked to the network to book travel or theatre seats, order goods, and so on.

In such a setting Culture was bound to raise her pretty head. One of the dangers of videotext information services, a speaker claimed, would be the impoverishment of the language. Telegraphic-sized sentences are hardly suited to a Romance language like French. In that case, came the answer, there will surely be place for both types of information . . . a comforting thought at least for the editor of *Ouest France*.

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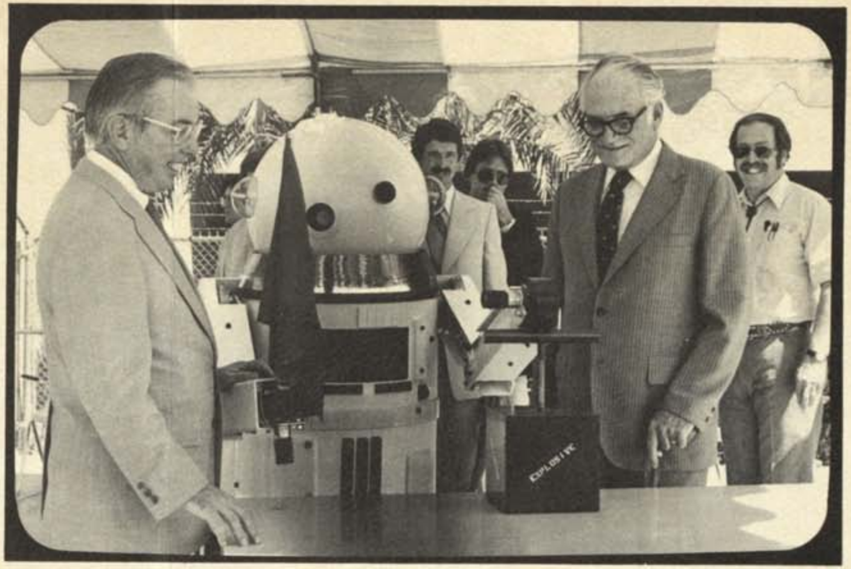
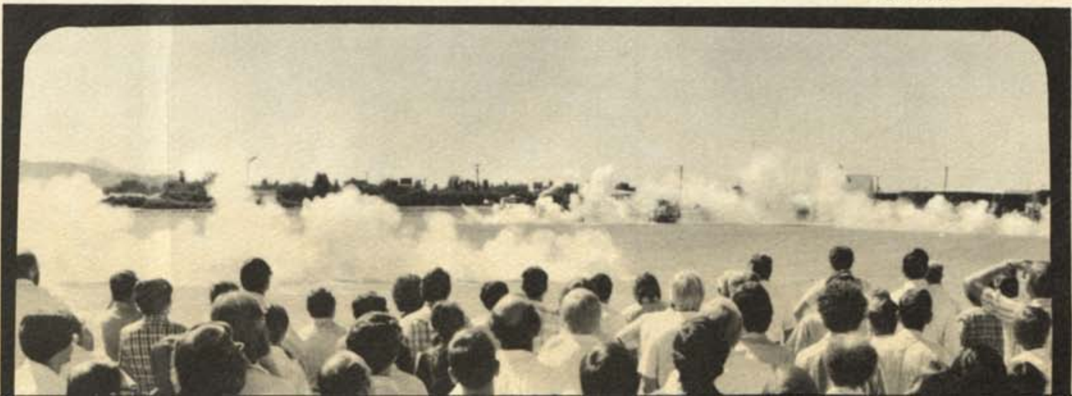


Dick Douglas [left] and Senator Goldwater [second from right] assist R2D1 as he sets off the fireworks. Bob Bemer [right] and other guests wait for the fireworks to go off.



After a "Gentlemen, start your engines," signa
a green flag from R2D1, four bulldozers bro
building.

2 Moon Mountain Trail
Phoenix, AZ 85023

1981 October 28

Editor, Datamation Magazine

At a time of increasing interest in dictionaries as office automation tools, for hyphenation and spelling checks, I have observed an odd anomaly in hyphenation as decreed by Webster's (Merriam) dictionaries. It is this:

- All words ending in "TIONARY" are hyphenated as "TION-ARY", except "DICTIO-NARY".
- All words ending in "NATION" are hyphenated as "NA-TION", except "HYPHEN-ATION".

Now I am aware of the horrible inconsistency of hyphenation as it is practiced, but there seems to be very long odds against this combination. Do any Datamation readers know the reason?

Bob Bemer,
Phoenix, AZ

Honeywell

1981 October 27

Thomas N. Hastings
Chairman, ANSI X3L2
Digital Equipment Corp.
Continental Blvd, MK1-2/J05
Merrimack, NH 03054

Dara Hekimi, Secretary General
ECMA
114 Rue du Rhône
1204 Geneva
SWITZERLAND

Gentlemen:

ISO/DP 7352 (Document 97/SC 14 N) postulates (page 40) the possible existence of an ISO Syntax Register for the specification of data interchange formats. I had proposed (last year, in a Danish magazine, where you probably did not see it) a Register for tokens in a database. This letter is to make such a proposal formal, if your groups have not already started work on it.

As you know, DP 7352 refers to tokens as "tags". "Token" is a better term for short strings standing for long strings in a database, particularly if they are mnemonic. E.g., airport codes, stock exchange symbols, country codes, currency codes, etc. A "token" stands for something in its place; a "tag" is attached.

Section "f)", p. 14, should imply such an ISO Tag/Token Register, like an ISO Syntax Register. Like ISR00004, we would have an ITR00004. The list might be an ISO Standard as well, as country codes are, but this would identify the list as a registered token list among many such lists. The Registry number could be embedded in the interchange format.

A token registry is needed to understand interchange data if the syntax is not available (another "explicit" attribute). Examples of some standardized data element classes are:

Token	Entity	Standardizer	Registry No.
AZ	Arizona	United States	ITR ?
HON	Honeywell	Stock Exchange	ITR ?
MM	Merchant Ship	UNESCO	ITR ?
ITA	Italy	ISO 3166	ITR ?
ITM	Lira	ISO TC68	ITR ?
LIN	Linate Airport	IATA	ITR ?

HONEYWELL INFORMATION SYSTEMS INC., P.O. BOX 6000, PHOENIX, ARIZONA 85005, TELEPHONE 602/866-6000

The overlaps in various specific tokens show the need for an for an international registry of token lists:

Token	ISO 3166 Country	ISO TC68 Currency	IATA Airport	IATA Airline	US Stock Exchange
AF	Afghanistan			Air France	
FRA	France		Frankfurt		Farrah Mfg.
FRM		French Franc	Fairmont, MN		
HON			Huron, SD		Honeywell
KHM	Cambodia	Khmer Riel	Khamtis, Burma		
DOM	Dominican Rep.	Dominican Peso	Dominica		

TC97/SC2, while working on the 8-bit Teletext code, could provide symbols in that set to identify ISO Registries. One symbol for a token registry, one for a syntax registry. If the Airport Registry No. was ITR12, an airport could be represented explicitly by the sequence

ITR12IAD (for International Airport Dulles)

If the registry symbol existed (represented by ¤ here), it would be

¤12IAD

In summary, I am suggesting three actions: 1) amending the document to introduce the concept of an ISO Token Registry, 2) establishing such registries via SC14, and 3) asking SC2 if it can assign symbols for data element registries within the 8-bit Teletext set. I assume the latter group will immediately understand this method of unique identification of variable-length strings of characters, analogous to unique identification of single characters outside of ISO 646 via ISO 2022 and 2375.

Bob

R. W. Bemer

bcc: Olle Sturen, Secretary General
International Standards Organization
1 rue de Varembe
1211 Geneva 20
SWITZERLAND

Memorandum from
R. W. BEMER

Here's the way to get the whole act together -- your very [illegible] special ISO symbol in the Teletext character set!

1981 October 27

Then probably you could consider a single registry number; perhaps 4 digits would suffice, because not all ISO standards would be candidates. Furthermore, the number need not coincide with the number of the standard, although it could if you didn't mind a sparse set of registry numbers. In that case the standards that didn't need to be registered for the ISO symbol could have their numbers assigned for other items.

I think it is a pretty good idea to have the ISO symbol available for Viewdata, television sets, CRTs, and even typewriters. Sort of keeps ISO in the public eye, and may attract considerably more attention to its standards.

Regards,

Bob

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LIN	Linate Airport	IATA	ITR ?

Terminal users--increase your productivity

Every day there are more Honeywell 7801 video terminals going into service here in Phoenix. You can recognize them by the plain black area to the right of the screen, without switches of any kind. But don't be misled if you see some with the black area covered over with operating instructions for something called "Screen Environment." They're still 7801s, but the people using them have found a new tool for much greater productivity!

Because of the demand, we have reproduced those instructions here in the PRINTOUT. The overlay may be cut out and put on your 7801 terminal (if you don't have one now, keep it, because there may be a 7801 in your future--it's a part of Office Automation).

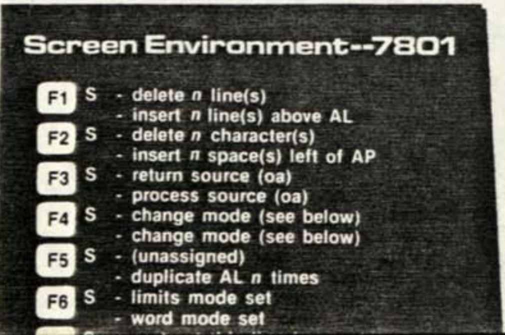
The Screen Environment is just that--an "environment" for doing all of the computer tasks you need to do. It's driven by a TEX (WP2.0) program developed by Bob Bemer of LISD and Duncan MacGregor of Honeywell Ltd. in Toronto, Canada. Bob claims that "What we have here is a tool so significant to programmers that it deserves a field and name of its own. We expect at least the success of video terminals in Word Processing, and I propose we name it 'Program Processing.'"

The potential for increased productivity of programmers seems great. Seattle First National Bank, a test site, has users that say productivity can be quadrupled. Compare this to full use of structured programming, which some industry studies say can increase productivity only in the range of 25-50 percent.

Because the 7801 is an "intelligent" terminal, with its own microprocessor, a computer system can support more of them than you might expect. That's because the communication traffic between the terminal and the host system is minimized. The driving program operates on the principle that when the screen picture is changed, any line that was there previously does not get rewritten, only moved around by the microprocessor in the terminal. The result is that the overhead is no more than for asynchronous hardcopy terminals, but you can get results much faster. Thus the actual cost of doing jobs is less, particularly in people time, but also in computer resources.

Learning to use the Screen Environment is not difficult. It operates primarily by function keys (see the instruction cutout), except for overwriting, inserting, and deleting characters (just like word processing). Both hardcopy and on-line instructions are available, and you might look for an announcement of seminars that Bob Bemer has been giving. One hundred sixty people have already attended.

Your "Screen Environment" overlay. Cut out and put on the right side of your 7801 terminal.



Screen Environment--7801

F1 S - delete *n* line(s)
- insert *n* line(s) above AL

F2 S - delete *n* character(s)
- insert *n* space(s) left of AP

F3 S - return source (oa)
- process source (oa)

F4 S - change mode (see below)
- change mode (see below)

F5 S - (unassigned)
- duplicate AL *n* times

F6 S - limits mode set
- word mode set

Guess what's coming

Its time for LISD's annual Blood Drive dates: Sept. 15, 16, 17 and 18. Remembe and 7 and Mobile units at Metro Center a make your appointment now by calling L administrative clerk, on Ext. 2608? Here a donate blood:

Sept. 15	6 to 10 a.m. 4 to 8 p.m.
Sept. 16	8 a.m. to 2 p.m.
Sept. 17	noon to 4 p.m.
Sept. 18	9 a.m. to 3 p.m.
Metro Center Sept. 16	11:30 a.m. to 5:
Camelback Sept. 17	noon to 4 p.m.

General blood donor qualifications: 17 weight more than 110 pounds; minimum donations; and never had hepatitis.

Reaching for excellence in a personal way

Galindo defends his t

Ralph Galindo, an employee in Manufacturing, will defend his Professional Karate Association's Amateur Welterweight Championship title for the first time on Aug. 22.

After this particular fight, Galindo will continue to fight on a professional basis. All of his previous bouts have been won by

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Computer in Pittsbu keeps track of traffi

The City of Pittsburgh can now implement its many innovative programs--from keeping tabs on those charged with traffic violations to giving its water treatment chemist an electronic library of water treatment information on other city governments--with the help of a Honeywell Level 66/DPS Model 440 host computer system the city has been using since May 1980.

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London
26-28 November 1980

STATE OF THE ART REVIEW 1980

Largest-ever review
of computing today
and tomorrow

STATE
OF THE ART
REVIEW
1980

London
26-28 November 1980

Key areas reviewed and analysed at the Infotech State of the Art Review 1980

- Future computer systems
- Corporate information management
- Future software
- Business information technology
- Office of the future
- Man/machine communications
- Software life-cycle management
- The information industry
- Future networks
- Database technology
- Intelligent systems
- Software organisation

The Infotech State of the Art Review is the most important event in the DP community's calendar in 1980. It is designed to bring together senior management representing all facets of the DP profession in a top-level discussion of the key issues influencing the development and use of information processing technologies — now, and in the future.

During the world's largest programme of specially-commissioned presentations and informal discussions, all the major issues of concern are presented, reviewed, analysed and discussed, drawing together the insights and specialist knowledge of international DP professionals whose decisions will shape the future direction of computer development and use.

In total, the Infotech State of the Art Review represents a unique opportunity for senior technical and non-technical management to exchange knowledge, opinions and experiences and to gain in-depth understanding of those issues of direct relevance to their own responsibilities.

In compiling the programme Infotech has selected the most articulate, the most respected, and the most thought-provoking speakers from the thousands of international experts who have spoken on Infotech platforms over the past decade.

Carefully structured into a coherent framework, the State of the Art Review 1980 permits each delegate to select sessions that match his own particular interests and professional requirements.

Afternoon and evening discussion panels and film presentation complement the speaker presentations and the maximum degree of high-level professional interaction has been designed into the programme. A buffet reception gives delegates and speakers the opportunity for informal contact and discussion.

No DP professional with a serious involvement and interest in the latest developments in computing should miss this intensive three-day State of the Art Review.

Full programme: pp 2-7 Profiles of panellists and speakers: pp 8-12

WEDNESDAY 2[illegible] NOVEMBER

18.00 - 20.00
Buffet rec[illegible]n

A buffet recep[illegible]n the evening of the first day provides an excellent opportunity for speakers and delegates to meet informally and to discuss their own ideas and experiences with an unparalleled number of other high-level professionals.

Chairman
John Iliffe
Queen Mary College, London

Session 1 Option 1

9.30 - 10.45

Michael Flynn
Stanford University, USA

Technology, language, and systems architecture — the State of the Art

• System design — economics of technology, anomalies • Effect of shifting economics on requirements of complex systems architectures — eg timesharing • User systems costs — language as the man/machine interface • An understanding of language issues and technology directions to create new systems architectures and developments

Session 2 Option 1

11.15 - 12.30

Gordon Bell
Digital Equipment Corp, USA

Distributed processing and limits to its growth

• Factors limiting growth • Basic technologies — fifth generation, VLSI-based computers • Complexity of design • Lack of standards • Forecast standards • De facto constraints — communication, TV formats • Problems of greater complexity of larger systems to user and designer • Quantity of information to be processed

Chairman
George Cox,
Butler, Cox and Partners

Session 1 Option 2

David Butler
Butler, Cox and Partners, UK

New challenges for the Management Services Director

• Key problems faced by Management Services Directors — technical, economic, and human • Major opportunities • Systems architecture • Distributed processing • Office automation • Productivity of systems personnel • Death of data processing • New roles of the Management Services Director

Session 2 Option 2

Peter Hermon
British Airways, UK

Computers in the expanding role of Management Services

• Productivity as the cornerstone of Management Services • Computers just one technique • Approaches to productivity • Organisation needed • Role of the Internal Consultant • New opportunities for more effective computerisation • Increased scope for major benefits

Chairwoman
Steve Shirley (Mrs),
F International

Session 1 Option 3

Manny Lehman
Imperial College of Science and Technology, UK

Software engineering: the State of the Art

• Programs and the programming process • Program classification • Intrinsic evolution • Evolutionary levels • System creation • Sequential enhancement • System generations • The value of the evolutionary pattern • Implications • Life-cycle management • Process history • Models • Programming environments • New architectures

Session 2 Option 3

David Barron
University of Southampton, UK

The software revolution

• Structured programming and program design methodologies • Program proving • Prescriptive language standards • Validation packages • Text editors • Tools for presentation and analysis of programs — pretty-printers, cross-reference listings, profilers, debugging packages • Operating systems to facilitate program development

Chairman
Fred Lamond,
Independent Consultant

Session 1 Option 4

David Firnberg
Urwick Nexos, UK

Will tomorrow's office be an office?

• Intelligent end-user devices providing office support • Digital transmission appropriate to *all* information • Increased world telecommunications networks • Economic and social pressures • Constraints of past technologies • Freedom of future technologies • Probable future developments • Human reaction

Session 2 Option 4

Alex d'Agapeyeff
CAP-CPP, UK

Personal computing and viewdata in large company DP

• End-user computer buying • Immediate and longer term needs • The retail supply industry • Software for the retail market • Viewdata as everyman's database • Distributed DP standards • DP departments as distributors • Reliability and support problems

Session 3 Opt

Branko Soucek

Zagreb University, Yugoslavia

From microcomputers to supercomputers — the next ten years

14.00 - 15.00 • Small computer trends — relation of minis and micros to mainframe • Mainframe trends — functional processors, future mass memories, future technologies • Application software development trends — portable solutions, string preprocessors, block-oriented languages • Impact on commercial DP • Hidden/invisible computers, 1984 and beyond

Session 3 Option 2

Hamish Donaldson

Hill Samuel, UK

Profiting from technological progress

• Hardware prospects and cost trends • Computers and communications — pressures and trends • Software development — the prospects • Realising the trends within business • Towards *cost-effective*, convivial computing and decision support systems • Dramatic impacts on user areas and on the DP function

Session 3 Option 3

Sjir Nijssen

Control Data, Belgium

Conceptual information analysis: the 'structured programming' of problem specification

• Need for powerful, formal specification techniques to reduce software costs • Framework • User-friendly information analysis methodology • Practical experience • Comparison information analysis approaches • Effect of CODASYL DDL and ISO on software productivity • Effect of conceptual information analysis on software development

Session 3 Option 4

Martin Healey

University College Cardiff, UK

Personal computing versus professional computing

• Trends and rates of change in diskette-based computers with some DP application • How good are they? • Software features • Reliability, maintenance, support • Use in large organisations • Effect on DP department • Standards • Union reaction • Foreign competition • Effect on bureaux

Session 4 Option 1

Algirdas Avizienis

University of California, Los Angeles, USA

Non-stop systems for the 1980s

15.15 - 16.15 • Causes of unreliable computing — physical, man-made • Defences against unreliability • Specification, prediction, measurement of DP system reliability • System design practices for fault-avoidance and fault-tolerance • Causes of unreliability — technical, management, user • Solutions — unity, change, education • Prediction for 1990

Session 4 Option 2

Jim Feeney

Hoskyns Systems, UK

MIS — the failure of technology

• The reasons why very few effective MIS exist today • Current developments which make them more likely • The failure of technology • The unsuspected barrier • How this might be surmounted — management options, financial and technical policies, changing philosophical orientations

Session 4 Option 3

Herman Kopetz

Technical University of Berlin, West Germany

System design for maintainability

• Why software maintenance — error correction, functional enhancement, portability • Evaluating the maintainability of software — cause effect analysis, maintenance matrix, maintenance documentation • Maintainability as explicit design, goal-data vs code-oriented design, interfaces and invariants, concept of smallest replaceable unit

Session 4 Option 4

Philip Hughes

Logica, UK

International viewdata

• Growing number of national viewdata systems • Complementary role of international viewdata • Value of international viewdata — to the general user, to the corporate user, to the information provider • Regulatory and tariff problems • Standardisation • The way ahead

Session 5 Option 1

Bruce Berra

Syracuse University, USA

Database machines

16.45 18.00 • Review of different approaches • Associative array processor/associative memory systems • Cellular logic devices • Multiple processor systems • Special purpose function architectures • Information storage and retrieval machines • Impact of database machines • Impact of database machines in next five to ten years

Session 5 Option 2

David Cainer

Barclays Bank, UK

Fourth generation machines with first generation technicians

• Analysis of different tasks behind computer development • Improvements — manual, computer-based • Experience of Barclays Bank — organisational changes, difficulties encountered, value to large users • Role of standards — good and bad effects

17.30 - 18.00 • Panel discussion on corporate information management

Session 5 Option 3

Les Belady

IBM Thomas J Watson Research Center, USA

Manual, machine-aided and mechanical processes in software development and maintenance

• Managing complexity and increasing productivity — past, present, future progress • Research and practical experience in re-use of program components — potential contribution to simplicity and productivity • Quantification of software and life-cycle — objective metrics, empirical evaluation

Session 5 Option 4

Edward Zimmerman

National Telecommunications and Information Administration, USA

Public Electronic Message Systems

• Advances in computer and telecommunications technology • Economies of scale from microelectronics • EMS as alternative to other expensive, energy-intensive means of transporting information • Obstacles to establishment and operation of public EMS systems • Incentives for growth of EMS

THURSDAY 27 NOVEMBER

18.15 - 19.30
Film presentation
by David Clark, University of London

Specially selected films of advanced computer graphics complement and reinforce many significant aspects of the presentations made during the day. The best of the latest high quality computer graphics and computer generated image techniques are highlighted during the film presentation.

18.15-19.30
Panel Discussions

Man/Machine Communications
Brian Shackel (Chairman), Joseph Weizenbaum, Robert Dunn, Herbert Chang, Larry Harris, Martin Healey

Information Industry
Iann Barron (Chairman), Marc Porat, Philip Dorn, Mike Cooley, Reay Atkinson

Chairman
Chris Ellis,
Nexos Office Systems

Session 6 Option 1

09.00 - 10.30

Pat Coen
Logica VTS, UK

Office automation — The State of the Art

• Office automation developments • Probable technical developments — input, display, storage/processing, output, communications • Problems — user acceptance, system architecture, user interface design • Convergence of text processing, data processing, image/fax, voice

Tom Stewart
Butler Cox & Partners, UK

Office automation and the office worker

• Human influence on success of computer, telecommunications, office systems • Economic pressure • The 'people' problem' • Union power • Real life examples • Need for new skills • Implementing human factors • The next 10 years

Session 7 Option 1

11.00 - 12.15

Moshe Zloof
IBM Thomas J Watson Research Center, USA

Office procedures by example

• Unified high-level non-procedural language for automation of office and business application • Two-dimensional business objects — tables, forms, reports, charts and audio documents • Query-by-example database management language • Two-dimensional programming

Chairman
Brian Shackel,
University of Technology, Loughborough

Session 6 Option 2

David Hebditch
Independent Consultant, UK

Dialogue design for user-friendly systems

• Need for improvements in practical user system dialogues • Potential of man/machine symbiosis • Innovative techniques — personalised dialogue styles, adaptive/learning dialogues, teaching (manual-less) dialogues, advanced error avoidance techniques, dialogues without error messages, non-textual dialogues • Practical problems of implementation

Session 7 Option 2

Joseph Weizenbaum
MIT, USA

Simplifying systems for non-expert users

• Problems of computers in business • Incomprehensibility of large DP systems growing • New responsibilities of DP managers/technicians • Creating comprehensible systems • Saturation of the market by DP industry • Have we more than covered our needs? • Preventing the compounding of mistakes in the next decade

Chairman
George Sokol,
US Army European Research Office

Session 6 Option 3

Daniel Teichroew
University of Michigan, USA

The DP department as a computer user: using computer systems to develop computer systems

• Functional role of 'systems departments' — managing information processing systems • Developing organisational/management procedures • Current limited computer usage, manual tasks • Development of tools for integrated computer-aided information processing systems • Interactive facilities • Recent progress • Areas of future development in 1980s

Session 7 Option 3

Robert Abbott
EDP Audit Controls, USA

Security, audit and control in the 1980s

• Present controls — necessary but inefficient • Application software • System software • Microprocessors • The system programmer • The maintenance engineer • Changes anticipated in next two to five years • Present inadequacies • Critical issues identified • Enhancements and improvements • Directions in which solutions may be found

Chairman
Iann Barron,
Inmos

Session 6 Option 4

Louis Pouzin
Institute for Research in Informatics and Automation, France

Limits to growth: the seven major obstacles facing the information industry of the 1980s

• Human interface mismatches — human perception vs computer perception, typical approaches, keys, commands, menus • Communications gaps/deterrents — network access, terminal idiosyncracies, cryptic diagnostics, network failures, unstable software • Support or lack of • Pseudo standards, modems, procedures, command languages • Reliability • Regulations • Unemployment

Session 7 Option 4

Philip Dorn
Dorn Computer Consultants, USA

The shape and structure of tomorrow's information industry

• Suppliers, distributors, users of information • Hardware providers • Can existing companies with narrow product ranges remain profitable? • Survival of small companies • Competing as a value-added assembler without raw microelectronic capabilities • Future of suppliers and hardware vendors • Key technologies necessary for survival

Session 8 Opt

Bob Bem
Honeywell Information Systems, USA

File management for office automation

14.00 - 15.00 • New problems of invisible computerised office files • Comparison with problems of today's data processing • Data acquisition – provisions for conversion, purchase/rental, creation • Retrieval – accommodation of fuzzy specification • Storage – reconditioning requirement • Safety and security capabilities • Successful man/machine interaction

Session 8 Option 2

Brian O'Heron
Grundy International, USA

Achieving user-oriented systems

• Responsibility to the user • Understanding the user's requirements • Involving the user • Working with the user • Educating the user • Protecting the user • Following through with the user • Making sure the system works • Future relations with the user • The user's role in the 1980s

Session 8 Option 3

Ed Miller
Software Research Associates, USA

Software quality assurance

• Motivation factors: the need for assured quality • Relationship to software engineering • Methodology for quality analysis • Inspection methods • Dynamic analysis methods • Hierarchical text planning techniques • Effectiveness assessment and QA results • Role of automated tools • Future directions of quality assurance technology

Session 8 Option 4

John Peers
United States Robotics Society, USA

Intelligent information systems: the impact on society

• Information handling systems evolution • Heuristics and self-adaptive systems • The impact on conventional data processing and on society • Cost trends and the predicted spread of the new-style systems • Development and control of an adaptive, heuristic information handling system

Session 9 Option 1

John Ellenby
Grid Corp, USA

Integrating the components of office automation

15.15 - 16.15 • Failure of major vendors to meet user demand for integration • Why the success of small new-start office systems companies? • Promise of VLSI • VLSI requirement of organisational integration • Can only major companies afford required investment level? • Meeting the future user demand

Session 9 Option 2

Herbert Chang
Bell Laboratories, USA

Computer-aided design: the State of the Art

• Design entry – textual, graphics • Design libraries and catalogues • Design databases • Systems and circuit design process – design verification and simulation, test generation, design analysis • Physical design process – partitioning, placement, routing • Documentation generation • Design scenarios • Future trends and challenges

Session 9 Option 3

Ian Palmer
CACI, UK

Systems development in 1990: methods

• Entity analysis and functional analysis • Techniques of entity modelling – functional decomposition, entity subtypes, entity life-cycles • Stages of overview • Need for analysis validation – quantification and functional selection • Relevance to conventional environments • Difference from traditional methodologies

Session 9 Option 4

Carol Ogdin
Software Technique Inc, USA

Trends, implications and future impacts of the micro

• Widespread availability of cheap computing power – implications to the computer industry, DP professionals, users • Historical parallels – spread of micros analogous to that of printing? • Importance of 'information/process' interchangeability • Future trends • Effects on society • Educating increasing number of users

Session 10 Option 1

John McQuillan
Bolt, Beranek and Newman, USA

Computer communications in office automation

16.45 18.00 • Significance of current convergence of computing and communications technologies • Alternative scenarios for next 5 years – future workstation • Writer-to-reader mailbox protocol – a model for future office communications • Automating the *management* of information • Cost-effectiveness in nonsimultaneous communications • Substitute for many higher level protocols

Session 10 Option 2

Robert Dunn
Summagraphics, USA

Graphics in man/machine communication: the personal 'workstation' of the future

• Architecture and application of personal graphical workstations • Turnkey application requirements for entertainment, mapping, engineering analysis, publications, spatial layouts, education • Architectures for graphical terminals, host DP facilities, total systems • Graphical man/machine dialogues • Representations • Expressions – qualitative, subjective, relative

Session 10 Option 3

Anthony Wasserman
University of California, San Francisco, USA

Systems development in 1990: tools

• Advances in the next decade • Integrated programming environments • System development machines • Programming language technology • Graphics for system design and evolution • Modelling tools • Databases for systems development

Session 10 Option 4

Marc Porat
Aspen Institute for Humanistic Studies, USA

The Information Society

• Understanding the importance of information • How to get, organise, use, package, sell, and protect it • Film, 'The Information Society' Part 1 – exploring America, government, Citibank, leaders in public and private sector • Part 2 – new information tools precipitating the revolution • Part 3 – the problems of the information society

FRIDAY 28 NOVEMBER

Chairman
Donald Davies,
National Physical Laboratory

Chairman
Ed Tozer,
Arthur Andersen

Chairman
Brian Randell,
University of Newcastle

Chairman
Ray Curnow,
Probit Consultancies Ltd

09.00 - 10.30

Session 11 Option 1

Howard Frank
Network Analysis Corporation, USA

Networks and telecommunications: the State of the Art

• Last decade • Development of networks • Architectures • Evolution of switching technologies • New vendor offering • The next five years • Technology • Current R and D – voice networks, beginning integration • Management • Impact on the organisation • Redefinition of term • Scenario for 1990 • System architecture, capabilities, requirements

Session 11 Option 2

Stephen Robinson
Independent Consultant, USA

Database: the next five years and beyond

• Corporate DP • Data banks • Short-term 1980-1982 – database software, business world utilisation of data banks • Intermediate term 1983-1985 – hardware advances, software changes/relational structures, query languages/data banks, organisational changes • 1990 – the readily available, all-knowing database and other fairy tales, database of EAM systems

Session 11 Option 3

Peter Naur
University of Copenhagen, Denmark

Prospects for the programming methodologies

• Brief review of programming methodologies • Criticism of current methodologies • Problems of programming compared with partly analogous activities: journalism, encyclopaedia making, problem solving • Prospects for the methodologies • Conclusions for specialisation of the programming task

Fritz Bauer
Technical University of Munich, West Germany

Programming as fulfilment of a contract

• Both partners understanding the programming contract • Formalisation of problem description between partners • Organisational measures – the software lawyer • Formal measures – intelligible yet formal language • International vagueness and the question of generalisation • Defining, measuring and guaranteeing efficiency

Session 11 Option 4

Edward Feigenbaum
Stanford University, USA

Expert systems in the 1980s

• Exploiting computing capabilities • Acquiring and representing knowledge – formal and informal – of human experts • Construction of applications – medicine, signal processing, science • Industrial and governmental applications • The next five years – office automation, emergence of hand-held 'expert consultant' • Application of symbolic computation

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11.00 - 12.15

Session 12 Option 1

Joseph Freitag
Comsat, USA

Tomorrow's telecommunications applications

• Mechanisms driving evolution – terrestrial systems, satellite networks, public and private systems • Directions of innovation – prime implementors, market segments • Effect on home services • Scenarios for 1990 – addressing a larger universe of users • Impacts from advanced applications • Challenges for the year 2000

Session 12 Option 2

Peter King
Birkbeck College, London, UK

The impact of relational databases

• Assesses the impact of relational databases proposals first made only 10 years ago • Developments of last decade • Outline of probable impact on commercial users in next 5 years • Research and development in cost-beneficial application

Session 12 Option 3

John Barnes
SPL International, UK

Real-time languages: the State of the Art

• Trends and current advances in real-time languages • The impact of ADA – a future standard • Plans for compilers • Major benefits – validation control • Technical benefits – programming in the large, data abstraction, multitasking • Portable libraries • What should the potential user do?

Session 12 Option 4

Larry Harris
Artificial Intelligence Corp, US

Natural language and database query

• Communication problem of formal query language • Artificial intelligence techniques allowing natural language to be effectively processed in real-world environments • User experience • Areas of effectiveness and ineffectiveness of natural language query • Future trends • Film of the ROBOT system in action

14.00 - 15.00

Session 13 Option 1

Marino Benedetti

Italian PTT, Italy

European telecommunications: integration and coordination

• Why telecommunications? • Why Europe? • International development – problems, compatibility, standards • Established international forums, eg CEPT • Example of ISDN harmonisation program • The challenge of the new information technology • Future configurations

Russell Pipe

Transnational Data, The Netherlands

New regulations constraining telecommunications users

• The new regulatory environment • PTT policies – rate, tariff, standards • Action – Brazil, Canada, France, Germany, Spain, Sweden, US • International projects • How will developments impact data processors and communications managers in Europe?

Session 13 Option 2

Peter Bates

Memorex, USA

Database design for the 1980s

• Computerised information as a business model • Identification of essential business elements • Database classification – reference, operational, historical • 'Immediacy value' of information • Program classification – transaction, interrogations, generative, summary, control • Requirements of distributed processing and distributed databases • Current and future hardware and software technology

Session 13 Option 3

Michael Fagan

IBM Corporation, USA

Software inspection and software quality control

• Overview of software inspection process
• Comparison with other approaches for quality control and review • Advantages – success example • Obtaining interest and *commitment* from management, systems analysts and programmers • Inspection moderator selection, training and evaluation/certification • Reporting and follow-up
• Uses of Inspection data

Session 13 Option 4

Donald Michie

University of Edinburgh, UK

The State of the Art in machine-learning

• Rote-learning • Parameter learning
• Updating semantic networks • Analogy
• Computer induction – costs • Computer induction – efficiency • Computer induction – transparency of end-product • Automatic feature extraction • Programming by examples

15.15 - 16.15

Session 14 Option 1

Chairman; Donald Davies

National Physical Laboratory, UK

European Telecommunications Panel

• The possible technologies versus the practical possibilities • User needs – the Eurodata forecasts on conclusions and evaluation • Plans in Europe and in separate countries • Planning communications systems in a decade of uncertainty

Panellists:
Donald Davies (Chairman), Philip Hughes, Marino Benedetti, Russell Pipe, David Hebditch, Philip Kelly

Session 14 Option 2

William Olle

Independent Consultant, UK

The impact of database on information systems planning and design

• Evolution of programming language standards and DBMS standards • Effect of commercial pressures on DBMS approaches
• Advantages of CODASYL approach • Need for analysis of problem data, business processes, and data dictionary systems
• Future ANSI DBMS standard Data Definition Language – impact on information systems design

Session 14 Option 3

Ed Daly

GTE Automatic Electric Laboratories Inc, USA

Successful software management

• Concepts of organisation structure – efficient operational groups • Importance of well-defined design methodology • Technologists and management • Project organisations • Functional organisation • Matrix organisation • Implementation guidelines
• The Management Grid • Organisation and software productivity • Software organisation – dated, modern, State of the Art

Session 14 Option 4

Earl Joseph

Sperry Univac, USA

Scenario: the State of the Art in 1990

• Future architectures • General-purpose programs • Compilable programs • Synergy systems • Ethnotronic systems • Sensor-based • Component programs • Code-spliced and transmitted systems • Knowledge-based computers • Parameters programmed systems • Future impacts on society, office automation, jobs, energy productivity

Chairpersons

John Iliffe Research consultant to ICL and visiting professor at Queen Mary College, London. Ran first IBM Service Bureau to open in London. 20 years in academic and industrial research in UK and US includes program segmentation and capability-based security mechanisms. Recently, concerned with advances in parallel computation and microsystem design.

Chris Ellis Manager of Business Strategy for NEXOS Office Systems. First involvement with the 'Office of the Future' was as Project Manager for IBM's successful installation of text processing and retrieval in the Houses of Parliament. At IBM was responsible both for marketing support and strategic product requirements for Office Systems.

Donald Davies Leads a team working on data security at the National Physical Laboratory. Internationally recognised for pioneering work on packet-switched networks. Received British Computer Society's John Player Award for work in this area. Distinguished career began in 1947 as a member of the team that built the MPL ACE computer.

George Cox Managing Director of Butler Cox and Partners, involved in corporate planning, market investigation and product studies for manufacturers and service companies in the information and technology field. As management consultant worked on wide variety of assignments in both government and industry including several major computer policy studies for large organisations.

Brian Shackel Professor of Ergonomics and founder of Human Sciences and Advanced Technology Research Group at University of Technology, Loughborough. Researches into ergonomic aspects of computer systems. Previously Academic Advisor to Department of Employment, Scientific Editor *Applied Ergonomics*, head of Ergonomics Department at EMI Electronics, and with Medical Research Council's psychology research unit.

Ed Tozer Manager in Management Consultancy Division of Arthur Andersen specialising in database and real-time systems, and methods for the design and installation of information processing systems. Has worked for industry and government. Actively involved in CODASYL database developments and was Chairman of the BCS/CODASYL working group on database administration.

Steve Shirley (Mrs) Director of F International Group and a Vice President of the British Computer Society. Also a member of the Department of Industry's CSERB and chairs its Computer Committee. Was a member of the ACARD working party on Information Technology which reported to the Cabinet Office earlier this year.

George Sokol Heads Information and Communications Science Branch of the US Army European Research Office, UK. Manages research grant programme and encourages knowledge exchange between European and US computer scientists. Has spent over twenty years directing software projects. Former posts include Director of US Army Computer Systems Command and Director of MIS with Sylvania Electronic Systems.

Brian Randell Professor of Computer Science at University of Newcastle. Has held this post since 1969. Has previously been Principal Investigator on a number of research projects, a major one being system reliability. Was also at IBM Thomas J Watson Research Center, New York, working on design methodology and multiprocessing systems.

Frederic Lamond Independent Consultant. Started career as Senior Systems Analyst for Univac. Then Export Sales Consultant and Technical Support Manager for English Computers, Technical Consultant at Leasco Systems and Research, and European Editor of the Auerbach Computer Technology Reports. Has contributed to the international computing press with a growing consultancy activity.

Iann Barron Founder and executive director of INMOS. Responsible for microcomputer development and language product strategy. Before founding Inmos, career has spanned computer design at Elliott Automation, founding and running Computer Technology Limited and consultancy. Is also visiting Professor of Computer Science at Westfield College, University of London.

Ray Curnow Director of Probit Consultancies Ltd, specialists in the economic and social implications of technical change. Previously Senior Research Fellow at the Science Policy Research Unit, University of Sussex. Consultant to the BBC, the Department of Industry, and a number of major companies. Co-author of *The future of microelectronics* and of *The silicon factor*.

Speakers and panellists

Robert Abbott Pr[illegible] and founder member of EDP Audit C[illegible]s. Previously at the Lawrence Livermore Laboratory, initiated and led the RISOS project, which demonstrated the insecurity of most systems software. Has undertaken numerous security audits for Government and industry in Europe and the USA.

Alex d'Agapeyeff Co-founder, Chairman and Managing Director of the CAP-CPP Group. Experience has been in computer programming, especially in system software. Has performed advisory roles for the Government. As Chairman of CAP MicroSoft, has been responsible for many developments in microprocessor software. Initiated CAP MicroSoft's development of telesoftware on viewdata.

Reay Atkinson Heads Computer, Systems and Electronics Division of Department of Industry. After planning study in 1969 of computers in central Government was appointed Director of the Central Computer Agency, responsible for the application of administrative computers throughout the Government Service. Has had responsibility for development and application of Government computer procurement policies.

Algirdas Avizienis Professor at UCLA researching in computer system architecture and fault-tolerant computing. Previously at Jet Propulsion Laboratory initiating and directing the JPL-STAR computer research project. Has been Principal Consultant on various fault tolerant computer research projects. Author of many technical papers on digital system architecture, computer design and fault-tolerance.

John Barnes Director of Language Research at SPL International's Abingdon Research Centre. Was with ICI for many years and designed and implemented RTL/2. Has been involved with US Department of Defense ADA project as an advisor to the UK Department of Industry and a member of the ADA language design team.

David Barron Professor at University of Southampton and has been responsible for the SOFAR fast FORTRAN system. Previously lecturer at Cambridge University involved in the CPL project and the design of the Atlas 2 Supervisor. Author of several books on computing, and has published many papers in *The Computing Journal.*

Peter Bates Manager of Information Systems Planning Information Technology Division of Raychem, directing development of a new generation of information systems. Previously Corporate Director of Information Systems at Memorex, responsible for worldwide system planning and coordination of data processing and telecommunication activities. Has managed many technical projects including large-scale management information systems.

Fritz Bauer Head of Computing Science at the Technical University of Munich since 1967. Main interests are numerical analysis and programming methodology. Participated in the development of ALGOL 60. Invented an error-correcting code and was co-developer of the push-down principle of compiler construction. Has written extensively on computer science and program development.

Les Belady Senior Staff Memb[illegible] IBM's Research Center and Editor o[illegible]E *Transactions on software engineering.* Has worked on program behaviour, storage management strategies, computer graphics and secure operating systems. Helped develop IBM's first experimental virtual system, managed research into methods of developing and maintaining large software and co-developed program evolution dynamics.

Gordon Bell Vice-President of Engineering at DEC. Helped develop an assembler for Deuce computer in Australia. Was staff researcher at MIT's Speech Laboratory, and held positions in the Electrical Engineering and Computer Science Departments at Carnegie-Mellon University. Co-authored book, *Computer structures* with Allen Newell.

Bob Bemer Has worked for RAND Corporation, IBM, Univac, Bull and General Electric. Joined Honeywell Information Systems as Staff Consultant and Editor of the Honeywell Computer Journal. Became Senior Consulting Engineer and in recent years has headed the company's development of an interactive enquiry system based on the relational model.

Marino Benedetti Company director with Italian telecommunications and electronic holding company. Responsible first for corporate planning and later of international relations. Previously with European subsidiary of American electronics and telecommunications company in Rome and Geneva, and with Italian telephone operating company in technical and planning capacities. Chairman of Eurodata foundation.

Bruce Berra Professor and Chairperson of the Department of Industrial Engineering and Operations Research at Syracuse University, New York. Industrial experience was gained at IBM, Bendix, and Hughes. Has been active in numerous special interest groups and technical committees on database management, with a special interest in computer architecture for database management.

David Butler Founder and Chairman of Butler Cox and Partners, a leading consultancy firm concerned with European data processing and communications at the corporate policy level. Previously, was Director of the Diebold Research Programme in Europe, following a decade in DP Management and consultancy. Has written and lectured internationally.

David Cainer Programming Manager for Barclays Bank. Work includes the specification and development of standards for programming. Previously at De La Rue Bull as part of an international team working on a banking package. Has published on SYMOB (a banking package) and program testing.

Herbert Chang Head of the Engineering Design Process Department of Bell Laboratories, responsible for the development of design automation systems. Past work includes automatic maintenance techniques for electronic switching systems, development of computer fault-simulation systems and software support systems and software engineering techniques. Co-author of *Fault diagnosis of digital systems.*

Speakers and Panellists (continued)

David Clark Senior Producer at University of London's Audio Visual Centre producing educational films and TV. Senior Consultant in the Interactive Planetary Image Processing System Group at University College, London. Editor of UK *Computer Animation Newsletter*. Coordinated introductory book *Computers for imagemaking*. Presented at ACM SIGGRAPH '79 and is UK representative at SIGGRAPH '80.

Pat Coen Chairman of Logica VTS and founder member of Logica. Currently responsible for consultancy in areas of text processing systems design and implementation. Has over 16 years experience in management science, computing, communications, and office systems, and has advised major companies throught the world on the establishment of office information systems.

Mike Cooley Works for Lucas Aerospace and is Chairman of the Amalgamated Union of Engineering Workers (TASS) for UK sites, and its former National President. Author of numerous scientific and technical papers and co-author of recent publications. Has broadcast internationally and is a member of international committees on computers and society.

Ed[illegible]y Executive Director — Electronic Switching, GTE Automatic Electric Laboratories. Worked in Research Department for three years. Then joined Technical Staff for Bell Laboratories. 1969 rejoined GTE and has held positions of Director — Advanced Development Laboratory, and Director — EAX Operations Laboratory. Widely known for practical and down-to-earth writings on software management.

Hamish Donaldson Head of Banking Services at Hill Samuel. Responsible, over last six years as Projects Manager and Head of Management Services, for introducing distributed processing based on combination of minis and mainframes. Formerly worked with De la Rue Bull Machines and Urwick Dynamics. Authored *A guide to the successful management of computer projects*.

Philip Dorn President of Dorn Computer Consultants. Has worked on military command and control systems, graphical data processing, timesharing, data communications, compilers, operating systems, language design, operations management and chargeback systems. Serves as a Contributing Editor of Datamation, as an editorial advisor to *l'Informatique* (Paris) and as a regular contributor of 'outlook' to *Data-Nytt*.

Robert Dunn Joined Summagraphics after leaving Communications Research and Development Command of the US Army. Headed project to couple computer graphics and video disks. Was Chief of CAD-E/CAM at US Army Electronics Command. Former Chairman of ACM-SIGGRAPH and of US graphics standards study group. President of Lifesmith consultancy in graphics product development.

John Ellenby President and Chairman of Grid Corp, concerned with office automation products. Previously with Xerox, originally as program manager and latterly as manager of advanced publishing systems, and manager of advanced programs, responsible for early planning and implementation for advanced VLSI facility for research. Has extensive international consulting and lecturing experience.

Michael Fagan Senior programmer-manager at the IBM Kingston Development Center. Over the past five years has managed programming methodology and programming process departments, and has been deeply involved in programming technique and process development and evaluation. Developed the use of inspections for program design and code.

Edward Feigenbaum Professor of Computer Science at Stanford University. Director of its Heuristic Programming Project, a world leader in the application of Artificial Intelligence (AI). Has directed many knowledge-engineering projects, including pioneering application of AI in Dendral project. President of American Association for Artificial Intelligence. Co-editor of new *Handbook of Artificial Intelligence*.

James Feeney Managing Director of the Hoskyns Group since 1976. Has worked in the computer industry since the early 1960s. Has a technical background in the development of operating systems and language processors as well as extensive experience in the production of advanced application systems.

David Firn[illegible] Leading authority on the application [illegible]formation technology. Managing Director of Urwick Nexos Ltd, primarily concerned with helping organisations to create and operate effective business sytems. Was Director of the NCC from 1974 until 1979 and has been Head of Management Services of ICL. Has consulted for the government and lectured internationally.

Michael Flynn Professor of Electrical Engineering and Computer Science at Stanford University and Director of Standord's Computer Systems Laboratory. Worked for IBM, taught at Northwestern University and St Johns Hopkins University. 1973 founded Palyn Associates. Continues interest there as senior consultant. Was founding chairman of the ACM Special Interest Group on Computer Architecture.

Howard Frank Co-founder and President of the Network Analysis Corp responsible for the management of research and management consulting. Activities as Principal Investigator with ARPA have included design and performance studies, analysis of command and control communications systems, and packet radio system design. Co-author of *Communication, transmission, and transportation networks*.

Joseph Freitag Previously with Comsat General as director of Business Development and advisor to high technology systems businesses in US communications and computer industries. Former Vice President, United Technology Corporation, and with General Telephone and Electronic developing first global type satellite earth stations. Implemented first nationwide real-time data collection systems in Latin America.

Larry Harris Vice [illegible]nt of Artificial Intelligence Corp, and A[illegible]iate Professor of Computer Science at Dartmouth College. Consulted for the former on the development of ROBOT, a natural-language system to be successfully installed in the commercial environment. Has lectured internationally on structured programming and structured design.

Martin Healey Reader in Electrical and Electronic Engineering at University College, Cardiff. As lecturer and consultant specialises in terminal-oriented minicomputer systems and data communications. Author of over 80 published papers on control theory and computing, as well as four textbooks. Acts as consultant to a number of companies and lectures internationally.

David Hebditch Consults on a variety of teleprocessing subjects including the design of the man/machine interface. Joined DP industry in 1963 as programmer with Schweppes Ltd. Later worked for Halifax Building Society as Senior Systems Analyst, with particular responsibility for data communications. Designed and implemented several major teleprocessing systems.

Peter Hermon Management Services Director at British Airways Board and on several international airline boards. Responsible for work on computers, communications, operational research, organisational development, productivity and cost reduction. Initiated BOADICEA project. Part-time consultant to Civil Service on computing and served on Central Computer Agency Council until 1979.

Philip Hughes Chairman of Logica Holdings Limited. Started in Computer and Management Sciences consulting when joined CEIR Limited (now Scicon). Was appointed General Manager and Head of Professional Services. In 1969 co-founded Logica Limited and has been Managing Director and Chairman. Particularly involved with developments in the field of data communications.

Earl Joseph Staff Scientist to Sperry Univac and is internal consultant on future trends in architecture and technology, and on their application and impact. Has co-authored twelve books, and published over sixty papers. Holds several computer patents and is the architect of five major distributed systems.

Philip Kelly Deputy Director for Non-voice Networks in the Network Planning Department of British telecommunications. Formerly, head of Data Systems Planning Division. Represented the British Post Office on CEPT's Special Committee on Data Transmission. Chairman of committee overseeing the planning and implementation of the telecommunications network for EURONET.

Peter King Head of Department of Computer Science at Birkbeck College, University of London. In private consultancy mainly concerned with DP problems of large organisations and practical application of file management and database software. As member of Advanced Programming Study Group, was responsible for initiating studies of the CODASYL DBTG proposals by BCS.

Herman Kopetz Professor o[illegible]uter Science at the Technical University [illegible]erlin. From 1968 to 1970 was first post-doctoral Research Associate at the University of Georgia USA. Was associated with the Steel Company VOEST-Alpine, the largest company in Austria, and was in charge of the department of computer process control.

Manny Lehman Professor of Computing Science at Imperial College and Head of Department of Computing and Control. Former posts include work with Israeli Government on SABRC computer and with IBM heading group designing a large multiprocessing system. Co-developed approach to study of programming process *Evolution dynamics of large programs.*

John McQuillan Vice President of BBN Information Management Corp, a subsidiary of Bolt Beranek and Newman Inc providing packaged software for storing, retrieving, and communicating information. Major contributor to design and implementation of ARPANET. Has perfomed system design, analysis and evaluation studies in networks for other US government agencies and for industry.

Donald Michie Professor of Machine Intelligence Research Unit at Edinburgh University. Visiting Professor at University of Illinois. Editor-in-chief of the *Machine intelligence* series. Edited new publication *Expert systems in the microelectronic age.* Founder of Edinburgh University's Centre for Industrial Consultancy and Liaison. Lectured extensively on machine intelligence and perception.

Edward Miller Chairman of Software Research Associates (SRA), California. Originator of many of the new testing techniques, and the leading exponent of a rigorous and systematic testing methodology, and is internationally recognised for contributions in the field of programming, software engineering, and software testing. Has lectured internationally in these fields.

Peter Naur Professor of Datalogy at University of Copenhagen. An internationally recognised authority on programming languages and methodology. Best known for pioneering contributions in the fields of language design and software engineering.

Sjir Nijssen Head of a team at Control Data that has implemented a prototype of a next generation database management system. Consults on practical application of the conceptual schema approach to design and implementation of information systems. Chairman of IFIP working group on databases and lectures on database technology at the University of Brussels.

Carol Ogdin Technical Director of Software Technique, and Consulting Editor of both *EDN* and *Mini-micro systems* magazines. Author of *Microcomputer design* and *Software design for microcomputers.* Has experience in systems, digital electronics and software design. Has concentrated recently on the application of microprocessors and minicomputers to a variety of novel devices.

Speakers and Panellists (continued)

Brian O'Heron President of Grundy Terminals. Previously held posts with ICL, the Douglas Aircraft Company, the Systems Development Corporation, Philco Ford and Litton Industries. At Sperry Univac was Project Manager on the British European Airways Seat Reservation System, and later Director of Customer Support Services in the USA, Canada and South America.

William Olle Has been running own independent consultancy practice since 1971. Specialises in the selection and use of database management systems and techniques. Is Chairman of the British Standards Institute working group on database management systems and is an active member of the corresponding ISO working group.

Ian Palmer Technical Director for CACI. Has many years practical experience in systems implementation and management consulting. Has led large data handling implementation projects for government and industry and has advised and lectured worldwide. Has also published extensively including the textbook *Database systems — a practical reference.*

Jo[illegible]ers Executive Director of the Unite[illegible]ates Robotics Society. Formerly founder and President of Logical Machine Corporation and invented the 'Adam' compiler-less business computer system concept. Co-founder of Interscan Ltd. and Allied Business Systems. Published and broadcast on information systems. Author of *1001 logical laws*, published in 1979.

Russell Pipe Consultant to the OECD concerning transborder data flows. Was involved in development of legislative proposals on US census and privacy issues. 1976 assisted in the preparation of a report to the US President on National Information Policy. Editor of *Transnational Data Report*, a journal specialising in information, politics, and regulation.

Marc Porat Associate Director, Program on Communications and Society, Aspen Institute for Humanistic Studies. Has been principal investigator on major studies in communications and information policies for many organisations. US representative and consultant to the Computer, Communications, and Information Policy Group of the OECD. Has written on *The information economy* and has developed a TV documentary on *The information society*.

Louis Pouzin Director of Pilot Projects at IRIA. Has managed many large software projects, including CTSS as part of Project MAC at MIT and Meteos, a real-time operating system for the French Weather Bureau. Joined IRIA in 1972 as Director of CYCLADES, an experimental computer network, linking universities and research centres in France.

Stephen Robinson President of S L Robinson & Associates, consulting in technical and managerial aspects of database information systems. Formerly manager of Database Technology at CACI responsible for consulting and education projects in database. Has perfomed similar functions at Performance Development Corporation. Previously with Mathematica, Applied Data Research, Polytechnic Institute of Brooklyn, and Service Bureau Corporation.

Branko Soucek Professor at the Institute Ruder Boskovic and the University of Zagreb. Also teaches in US. Interests are cybernetics, digital instrumentation, and mini-and microcomputer-based systems. Authored *Microprocessors and minicomputers* and *Minicomputers in data processing and simulation*. Is author with A D Carlson of *Computers in neurobiology and behaviour*.

Tom Stewart Consultant at Butler, Cox and Partners, specialising in human aspects of computer systems and related development. At Loughborough University was involved in several research and consultancy projects in the man/computer area, including computer systems evaluation, dialogue design, and terminal design. Has published and lectured extensively in Europe.

Daniel Teichroew Professor and Chairman of Industrial and Operations Engineering and Director of widely acknowledged ISDOS project, at the University of Michigan. Has worked in a variety of computing environments. Worked for the US National Bureau of Standards. Then joined the National Cash Register Company and became Head of Business Systems Analysis.

Anthony W[illegible]man Assistant Professor of Me[illegible]formation Science at University of California, San Francisco. Former Chairman of ACM Special Interest Group on Software Engineering. Research interests include programming language design, programming methodology, software engineering education and database management. Member of editorial boards of several specialist journals and program committees of international conferences.

Joseph Weizenbaum Professor of Computer Science and a member of the Laboratory for Computer Science at MIT. Author of ELIZA, a computer program for natural language communication between man and machine. Interests are in computer science education and in the relationship of computation to culture and society. Published *Computer power and human reason*.

Edward Zimmerman Deputy Administrator of the NTIA and Deputy Assistant Secretary of Commerce for Communications and Information. Previously in the Office of Administration in the Executive Office of the President. Provided staff support for Advisory Group on White House Information Systems, and worked on MIS. Has held management and technical positions in the computer industry.

Moshe Zloof Research Staff member in Computer Sciences Department of IBM's Thomas J Watson Research Center. Manager of the office automation project. Previously technical assistant to the Director of Computer Sciences. Joined IBM to work in the biomedical areas. Conceived and worked on the query-by-example programming language, which is now an IBM product.

STATE
OF THE ART
REVIEW
1980

REGISTRATION FORM

Send to the Registrar, Infotech Limited, Nicholson House, Maidenhead, Berkshire SL6 1LD, England.
Alternatively, telephone or telex your registration (Telephone 0628 39101. Telex 847319)

Fee table

Make payment in local currency

Austria	19306	Schillings
Belgium	43218	Francs
Denmark	8330	Kroner
Eire	686	Punts
Finland	5488	Markka
France	6174	Francs
Germany	2744	Marks
Netherlands	2940	Guilders
Norway	7154	Kroner
Spain	99862	Pesetas
Sweden	6174	Kronor
Switzerland	2548	Francs
UK	490	Pounds + VAT
USA	1372	Dollars
Infotech Units	98	

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See fees table. Please pay in your local currency and make cheques payable to Infotech Limited. Payment is due before the event. The attendance fee also covers documentation, refreshments, and lunch, but does *not* cover travel or hotel accommodation.

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4 weeks' notice	100% refund
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Less than 2 weeks' notice	no refund

Cancellations are valid only if notified in writing

Company/organisation

Full postal address

Booking placed by: Name

Position **Telephone** **Signature**

Delegates' names/positions	**Fees**
Sub total	
15% VAT For payment in UK pounds VAT no. 209 4166 70	
Total due	

Infotech reserves the right to make any changes in the programme that may prove necessary. If the event is cancelled through circumstances beyond Infotech's control, registration fees will be refunded in full. Infotech accepts no liability for any other expenses that may be incurred.

SOA454PS

Robert Abbott
Alex d'Agapeyeff
Reay Atkinson
Algirdas Avizienis
John Barnes
David Barron
Iann Barron
Peter Bates
Fritz Bauer
Les Belady
Gordon Bell
Bob Bemer
Marino Benedetti
Bruce Berra
David Butler
David Cainer
Herbert Chang
David Clark
Pat Coen
Mike Cooley
George Cox
Ray Curnow
Ed Daly
Donald Davies
Hamish Donaldson
Philip Dorn
Robert Dunn
John Ellenby
Chris Ellis
Michael Fagan
Edward Feigenbaum
James Feeney
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Carol Ogdin
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William Olle
Ian Palmer
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Marc Porat
Louis Pouzin
Brian Randell
Stephen Robinson
Brian Shackel
Steve Shirley (Mrs)
George Sokol
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Tom Stewart
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Ed Tozer
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THE TAYLOR REPORT/Alan Taylor

Foul-Up Shows Abuse of Redundant Data

A recent error in a reader's subscription renewal form for the magazine *Arizona Highways* shows that a good system of redundant information can be subject to design abuses.

The facts are simple. The Zip Code for a Chatham, Mass., resident was entered incorrectly into an address book. In a transposition error, the 2 and the 6 were transposed to give the Zip Code 06233 instead of 02633. This type of error would be caught by any check-digit system — if Zip Codes were designed to be used independently of other information.

The wrong 06233 Zip Code, with the right address, was then used to order a gift subscription to *Arizona Highways*. The magazine never arrived at the right address because somewhere in *Arizona Highways'* system the Zip Code was used in preference to the town and state identification in the original order. As a result of the normal and anticipatable error, the magazine was sent to Ballouville in Connecticut, rather than to Chatham in Massachusetts!

It appears, from the details *Arizona Highways* now gives, that its computerized system does not in fact check the original town and state, but simply uses a table lookup based upon the Zip Code. If, as in this case, the magazine is not returned, no action is taken.

Abuse of Redundancy

This is not a very important matter, on the surface. But still

Abuse of Redundancy

This is not a very important matter, on the surface. But still it is one which, in some form, should be part of any system designer's education — and elementary education at that.

The *Arizona Highways* system is clearly at fault in at least three ways. (I suspect that there may be more system faults here, but three will do.) And, while in this instance the subject matter is not that important — a $12 subscription — such faults can be uncorrected indefinitely in other computerized systems as well.

The first fault, chronologically, comes in the data input system. The actual input is ignored! The actual instructions of the input originator are never fully carried out.

No system should ignore input data. The data may be discarded after input and checking, but it certainly should not be ignored. Even if, as will be the case in this particular application, the actual town and state information is often in error (can you think of how many variations of Ballouville will occur?), the input must be input. That's elementary, and that was mistake number one.

The reason the input was ignored is that in the mailing address case, as in many systems nowadays, a possible, definite address can be obtained from only part of the input. The designer accepted as the design goal producing *an* address, without concern as to whether it was the correct address.

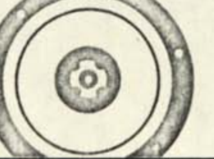
Items like Zip Codes are error-prone. Transposition, transcription and other errors can and do occur without obvious format problems in any nonprotected numeric strings, even short five-digit ones.

Any system designer knows that check digits can protect the accuracy of such number codes, but apparently the corollary has not been understood. If check-digited numbers can be used, then presumably it is dangerous to use noncheck-digited numbers. And this is what the *Arizona Highways* designer has done. The Zip Code has been used without protection. So that is error number two.

The third error, which may well be the cause of the others, is that the system confuses input with production.

In the production of an address, table-identified town/state printing is perfectly all right. Once the correct Zip Code is in the address, there is no need to hold the individual address lines in a redundant form. Redundancy and redundant checking are needed in input, not during production.

The quite common system fault that seems to have happened here is that the production standard of not needing the town/state data has been carried too far into the system and has been used in the input area.



Honeywell

1979 January 18

Elektronische Rechenanlagen
R. Oldenbourg Verlag GmbH
Rosenheimer Strasse 145
8000 München 80
WEST GERMANY

Sirs:

A paper of mine was published, I believe, in Volume 19, 1977 August, 167-172. It was entitled "Über den computer in unserer gesellschaft".

Unfortunately I have no copy of it. Being flattered that it should be published in your magazine, and translated to German by such a distinguished computer expert as Prof. H. Zemanek, I ask if it is possible for you to make an issue or tear sheet available to me. For my historical and personal files.

Thank you for your kind consideration.

R Bemer
R. W. Bemer

HONEYWELL INFORMATION SYSTEMS, P. O. BOX 6000, PHOENIX, ARIZONA 85005, TELEPHONE 602/993-6000

HERB GROS

Second group o the first kind

Ten years ago in strangely-named Garmisch-Partenkirchen, there was an international meeting dedicated to the realities of software. It was at that meeting, attended by Backus and Barton and Bemer, by Dijkstra and Naur and van der Poel, by d'Agapeyeff and Pinkerton and Randell, by Bauer and Perlis and Ross, and by two great Old Boys now departed, Stan Gill and Ascher Opler, that the term 'Software Engineering' began to be heavily used. I have characterized the field, in another place, as 'the technology of making very complex computer programs responsive to user needs, free of errors, and economical.' Other definitions are of course rampant.

Bob McClure, then little known even in the US, gave his famous growth curve for software at a Garmisch session, showing five thousand lines of support code for the 650 in 1954 and two million for the 360 in 1967 (58% per annum, compounded).

In late May of this year, the University of Aarhus invited another group, not quite as famous as the earlier crew, to come together for the same purpose. Bob Barton, reluctant parent of the Burroughs adventures, came again and was most warmly received. Edsger Dijkstra, who has been increasingly angry with the world lately, refused to attend — much to the unhappiness of the younger people who observed the vigorous combats of the professionals. Several of us tried to get Grace Hopper to come, but she had a long-standing commitment at the

sured.

That particular battle was a draw. Many of us felt that giant airline reservation systems, numerical weather forecasting, advanced computer graphics and the like, were genuinely gigantic, and had to be tackled by gigantic teams. Remember the two articles about the IBM palace in Santa Theresa? Others thought it possible to break down such systems into modules which could be handled by small companies or academic projects. The debate then veered off toward the pet computer science remedies, including excruciating new languages, of the more academic academics present, and was abandoned.

The buzzword boys then had their turn, and fashionable panaceas of the last year or two were described. Didn't go well; cooler heads prevailed. As a guess, it was partly because the great advocates, the Dijkstras and the Millses, and certainly their commercial exploiters, were not present. Instead, on the second day a discussion which ran through the rest of the workshop began, on the topic of program correctness. There is, as most readers are aware, a considerable body of esoteric publication on both sides of the Atlantic, about proving programs correct.

story, about a Finn Sundmann who finall duced a mathematical - is, provably correct an vergent — solution three-body problem. tunately, for practical like the moon, o tronautics, the Sund method turns out the slowly convergent ser mathematics (excl pathological Guinness of Records types). Tak lions of terms to giv digit of position, al NASA still uses highbrow calculations.

Toward the end meeting, another radic was proposed. Why no ganise the hardware to programming largely lete, or at least entirely ent in nature from th sent messy struggle? T her different concept faced, and the one p gated by Bob Barton w more accessible. He p to the possibility of pl realisation, in a world tastic chip technology, gram modules which co assembled Lego-style. goes back to plugboard of course, but his could now contain tho of gates or bits of m each, and still be ma tured for a few dollars Far out! Far out! Bu about all those dust-se corrodable contacts?

One other arg which I tried to put to my closing summary about money. The wo members and observe were unhappy with tions of cost-effective said, should regard not as a *ding an sich*, b convenient measure

Some answers to some questions on Structured Program Design Methodology (SPDM), of which Michael Jackson's is one example, Djikstra's another — and more related techniques exist.

Q Who uses SPDM?

A An ever increasing proportion of commercial installations, mainly in Britain and parts of the continent, many large government departments.

Q Who is SPDM aimed at?

A Primarily at programmers, but advanced use of the technique could easily involve those who specify programs in a commercial installation, (systems analysts?).

Q How does SPDM compare with rival programming methods?

A Briefly, it is more thorough and disciplined and provides more measures of a program's 'correctness'.

Q How does SPDM compare with systems design techniques?

A Simplistically, SPDM takes over where many systems techniques leave off, at the program specification. However, the system may be documented using the same notation as is used to describe the logic of programs in SPDM. This is a significant point since the logic of programs can and *should* be based upon the structure of the problems they solve.

Q How does SPDM affect the time taken to develop a program?

A While the overall time remains much the same as before, the design stage is lengthened, the coding slightly reduced and the testing considerably reduced. The finished product is (of course) better, ie more reliable and amendable.

Q How useful is SPDM with large programs?

A The larger the problem, the more useful is SPDM.

Q What affect does the use of a database have?

A Very little. Bachman diagrams show the inter-relations between data items, in all possible ways. Each program (or application) is likely to require the programmer to impose just one particular view of the data upon the database: this view may be conveniently expressed using SPDM notation.

Q Does SPDM reduce programmer job satisfaction?

A No, unless programmers are excluded from the design stage of the program and left merely to coding. Their confidence in their programs correctness (and hence their ability) should be increased, once they have become proficient.

HONEYWELL BULL INTEROFFICE CORRESPONDENCE

DATE: August 27, 1973
FROM: William A. Blodgett
MAIL STATION: Press Relations, Paris
TO: Messrs. C. W. Bachman
W. O. Bailey
R. W. Bemer
A. G. Lock
MAIL STATION:
COPIES TO: Messrs. J. Clavel
C. J. Freudiger
M. Gilbert
SUBJECT: NORDIC SEMINARS 1973

Gentlemen:

First, let me again thank you for your taking time to participate in the Nordic Seminars. In a way, it's a pity it was so short -- by the fourth seminar, you were getting it down to a great vaudeville act.

We are now attempting to analuze, in the form of a merchandizer, the qualitative results of the seminars. Quantitatively, it was a success:

We had anticipated an average attendance of between 40 and 50 persons at each of the four seminars; we averaged more than 75. We had expected somewhere around 350 persons ar Norddata to attend the HIS/CHB seminars; we were well over 600. In all, you gentlemen, plus our CHB folks, reached more than 1,000 customers, prospects, data processing professionals (and in Norway, competitors) during the two weeks.

Among the other memorable highlights of the two weeks -- which unfortunately will not appear in the merchandizer -- were Bachman's pre-dawn, walking-short hikes into the Norwegian hinterlands; Bemer's concert tour which paralleled the trip (you sure you don't know Grieg, Robert?); the entertaining "Walt and Judy" show, which included rather unusual p.m. naps, and 4 a.m. sun-rise watching rituals; and the feats of trail-blazer. Lock who gave "Red-Dog Leader" nervous breakdowns on at least four occasions.

The success of this trip, though, can be measured in your enthusiastic participation. Depending on the final results, comments, etc. perhaps we can start looking forward to another such endeavor -- this time European in scope. Good platform might be IFIPS - 74.

Regarding the charge number -- somehting I know you are all waiting ansiously for -- it is 04600.

Hope to see you all again soon.

Cordially,

Bill

1973 Scandinavian Trip

STO -	Anders Grønlund	(basketball, single)
OSL -	Arne Liland	(Datasystems NYTT editor
	Peter Hidas	(Devt. Mgr., interviewed)
	Ørjar Heen	(old acquaintance, mother at hotel, salmon)mgr. systde
	Arne Heen	(Aud, no relation, large system sales)
	Garø	(Country mgr., did not meet)
	E. Jacobsen	(?)
CPH -	Sven Eriksen	(
	Knud Thorup	(Marketing large systems)
	C. Phillips	(Country Mgr., like Charlie, saw in STO)
	Engel	(press)
CHB	Charlie Freudiger	

DAVID B. KRET
STATE SENATOR
DISTRICT 28
THIRTY-FIRST LEGISLATURE

STATE CAPITOL, SENATE WING
PHOENIX, ARIZONA 85007

(H-945-7186)

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COMMITTEES
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NATURAL RESORCES AND ENVIRONMENT

JOINT LEGISLATIVE BUDGET
COMMITTEE

Arizona State Senate
Phoenix, Arizona

1973 JUN 27

June 26, 1973

Mr. Bob Bemer
Honeywell Information Systems
P. O. Box 6000
Phoenix, Arizona 85005

Dear Mr. Bemer:

Thank you for your willingness to serve with the Joint Legislative Budget Committee as a member of a Citizens' Blue Ribbon Committee.

Arizona has a difficult and growing problem in records management. Huge volumes of documents are being generated daily which we must file, retrieve, etc. Long term storage is both extremely costly and occupies space which is critically needed for other governmental functions.

In an effort to solve the State's records management problem, the Legislature appropriated funds for use by the Tax Commission to develop an electronically operated system. The Tax Commission, in conjunction with the Department of Finance, has solicited bids. However, before any selection can be made, the Joint Legislative Budget Committee must approve such action.

To minimize our call upon your time and because expedited action is desirable, a meeting will be held in Room 218 of the Senate Wing on Monday, July 2nd, 1973 at 2:00 P.M. In the interim, proposals presented by Ampex and Trans-A-File are available for examination at my Senate office, Room 224.

Your assistance to the State in helping to solve this problem is greatly appreciated.

Sincerely yours,

David B. Kret
LS.

David B. Kret, State Senator
Chairman, Joint Legislative Budget Committee
Subcommittee on Records Management Systems

dbk:lc
cc: Representative Stewart, Vice Chairman of Subcommittee
Senator Runyan, Member of Subcommittee
Representative King, Member of Subcommittee
State Tax Commission
Department of Finance
Department of Administration

RSVP

1973 National Computer Conference & Exposition
June 4-8 New York Coliseum

The Biggest Computer Show on Earth

On June 4, 1973 a totally new concept in conferences will open in the New York Coliseum . . . The 1973 National Computer Conference & Exposition.

The 73 NCC is the first national gathering of the data processing community to examine the total picture of computer technology, its application, emerging uses and its impact on user industries and the world economy. As such, it supersedes the traditional Spring and Fall Joint Computer Conferences which for over 20 years served as the key meetings of the computer field.

Big, bold and different, the 73 NCC marks a total commitment on the part of the American Federation of Information Processing Societies to create a major forum for the entire data processing community. Big in every way, it will feature the most extensive program on data processing applications and computer technology ever assembled. All this plus the world's largest display of computer hardware, software, systems and services.

Under the General Chairmanship of Dr. Harvey L. Garner, Director and Professor of the Moore School of Electrical Engineering at the University of Pennsylvania, the 73 NCC provides this year's focal point for the world computer community. Each segment of the conference is headed by a recognized national authority who has, in turn, enlisted the active participation of key professionals and leading industry spokesmen.

[illegible] NCC, June 4-8, has been planned to meet your day-to-day needs. We hope you'll take advantage of this once-a-year opportunity to look, listen and learn; to exchange views, ideas and experience with the leading experts in the data processing field. You'll take home a wealth of practical working knowledge—the kind of know-how which spells immediate dividends for you and your company.

Keynote
To be Announced
Monday, June 4

Conference Luncheon
Lewis M. Branscomb
Vice President and Chief Scientist
IBM Corporation
Wednesday, June 6

Industry Luncheon
Edward N. Cole
President and Chief Operating Officer
General Motors Corporation
Thursday, June 7

World's Largest Data Processing Exhibit

The 73 NCC puts a world of data processing products and services right at your fingertips.

Over 200 exhibiting organizations will make 73 NCC the world's largest computer show. And each of the approximately 700 booths in the Coliseum will be staffed by industry experts ready to assist you in finding the optimum solution to your data processing problems.

Virtually every segment of computer technology and EDP services will be explained and demonstrated. Major areas include computer mainframes, small to medium sized digital computers, electronic calculators and mini-computers, special purpose systems, data communications equipment and services, test equipment and components, data conversion equipment, software services, scientific and business publications, plus a comprehensive display of peripheral equipment.

The 73 NCC puts it all together. A unique showcase geared to the needs of data processing and installation management personnel. And for senior management, an extraordinary opportunity to evaluate first-hand the major areas of EDP technology and to obtain specific information on overall economics, performance and cost effectiveness.

Whatever your category of interest, if you can't find it at the 73 NCC, it's probably not available.

Preliminary List of Exhibitors

Addison-Wesley Publishing Company
American Appraisal Company, Inc.
American Data Systems
American Elsevier/ North-Holland Publishing Company
American Telephone & Telegraph
Ampex Computer Products
The Ansul Company
Applied Digital Data

Basic Timesharing
Beehive Terminals
Benwill Publishing Corporation
Burroughs Corporation

Cambridge Memories, Inc.
Centronics Data Computer Corporation
Codex Corporation
ComData Corporation
Compu-Serv Network, Inc.
Computer Copies Corporation
Computer Design Publishing Corporation
Computer Devices, Inc.
Computer-Link Corporation
Computer Machinery Corporation
Computer Operations, Inc.
Computerworld
Control Data Corporation
C. P. Clare & Company
CPS, Inc.
Cullinane Corporation

Data 100 Corporation
Data Disc, Inc.
Data General Corporation
Datamation
Data Printer Corporation
Data Products Corporation
Datapro Research Corporation
Dataram Corporation
Data Test Corporation
Datum, Inc.
Decision Data Computer Corporation
Decision Incorporated
Diablo Systems, Inc.
Digi-Log Systems, Inc.
Digital Computer Controls, Inc.
Digital Development Corporation
Digital Equipment Corporation
Documation Incorporated
E. I. du Pont de Nemours & Company, Inc.

Electronic Engineering Company of California
Electronic Memories & Magnetics
Electronic News
EDP News Services, Inc.
Exide Power Systems, Division ESB Inc.

Fabri-Tek Incorporated
Facit-Odhner, Inc.
Fenwal Incorporated
Floating Point Systems, Inc.

General Automation
General DataCom Industries, Inc.
Grumman Data Systems

Hathaway Industries, Inc.
Hayden Publishing Company
Hewlett Packard
Houston Instrument
Howard Industries

IBM Corporation
ICC/Milgo
Identimation Corporation
Imlac Corporation
IMSL
Inforex, Inc.
Information Data Systems, Inc.
Information Displays
Infosystems
Infoton, Incorporated
Intel Corporation
Interdata, Inc.
Interdyne Company
International Computer Products, Inc.
Iomec Inc.

KYBE Corporation

Licon, Division Illinois Tool Works
Lipps, Inc.
Litton ABS OEM Products
Lockheed Electronics Company, Inc., Data Products Division

3M Company, Microfilm Products Division
3M Company, Min-Com Division
McGraw-Hill Book Company
Memory Technology
Micro-Switch, A Division of Honeywell
Miratel Division, Ball Brothers Research Corporation
Modern Data Services, Inc.

Nashua Corporation
Northern Telecom, Inc.
Nortronics Company, Inc.

Official Directory of Data Processing
Omron Systems, Inc.
Penril Data Communications, Inc.
The Portland Company
Powertec, Inc.
Precision Instrument Company
Prentice Hall, Inc.
Prime Computer, Inc.
Princeton Electronic Products, Inc.
Printer Technology, Inc.
Producers Service Corporation

Quantum Science Corporation

Randomex, Inc.
Raytheon Company
RCA Corporation
Recortec, Inc.
Redactron Corporation
Rixon, Inc.

Scanbe Manufacturing Corporation
Science Accessories Corporation
Scientific Time Sharing Corporation
Scriptographics Corporation
I. P. Sharp Associates Limited
Signal Galaxies
The Singer Company, Librascope Division
Spacesaver Corporation
Standard Logic, Inc.
Standard Memories, Inc.
Storage Technology Corporation
Sycor, Inc.

Tally Corporation
Tandbergs Radiofabrikk A/S
TEC, Incorporated
Tektronics, Inc.
Tele-Dynamics, Division of AMBAC Industries, Inc.
Teleprocessing Industries, Inc.
Teletype Corporation
Texas Instruments, Inc.
Thomson-CSF Electron Tubes, Inc.
Timeplex, Inc.
Transcom, Inc.

Vermont Research Corporation
Versatec, Inc.
Vocal Interface Division, Federal Screw Works

Wangco, Inc.
Warren G-V Communications, Division of Sola Basic Industries
John Wiley & Sons, Inc.

Xerox Corporation

The Computer and its World

Unique in its scope and purpose, 73 NCC features the most extensive program on data processing applications, computer technology and management issues ever assembled.

Over 100 sessions, seminars and special events will be presented. Heart of the program will be more than 90 sessions and panels divided into two important areas—Methods & Applications and Science & Technology. Each forms a "conference within a conference." Each will provide you with the opportunity to pick and choose among an extraordinarily wide variety of topics.

73 NCC will also feature a Special Program of major addresses, special sessions, and conference functions.

No matter what your needs, you'll find 73 NCC the *one* conference designed to serve the computer user, the EDP specialist, and the executive concerned about the impact of computer power on his day-to-day business activities.

Methods & Applications

Under the direction of Robert W. Bemer, Staff Consultant to the Vice President of Honeywell Information Systems, the Methods & Applications Program will focus on resource utilization—the effective use of our computers, our time and our people. It will analyze available resources and project capital expenditures in personnel, equipment and time which look promising for the future.

Thirty-six sessions will cover installation management, government, industry, and merchandising plus horizontal subjects of universal interest to computer users. Each will take a pragmatic view of the topic under discussion through interactive panel discussion supplemented by in-depth presentations.

Installation Management: The critical and complex world of installation management will be put under the microscope in 12 sessions with emphasis on management issues, cost effective operation and proper allocation of resources.

You'll find an in-depth analysis of regulation of the computer/communications industry, legal protection for software, confidentiality and security, and data integrity. Experts from government, industry, and the professions will examine proposed regulations, contractual aspects of proprietary software rights, recent studies of data banks and privacy, the protection of sensitive personal information, and data entry validation and control.

In addition, you'll have the chance to review progress and trends in performance evaluation and measurement, user and vendor experience in developing and servicing software products, prospects for cutting line costs for remote terminals, and continuing education and inhouse training for EDP personnel.

Government: A significant portion of U.S. computer power is used by government agencies. Underlining this, seven sessions will explore computers on the state and local scene, urban services, metrication, simulation of international relations, plus computers in Congress and in the elective process.

The urban scene will receive careful scrutiny through an analysis of what computers can and cannot do for such areas as traffic control, crime analysis, city management, dispatching of vehicles, and human services. Supplementing this will be a review of computers on the state and local scene highlighting the variations in plans and approaches of different governmental bodies.

With adoption of the metric system on the horizon, a panel of experts will explore the use of computers in the conversion process. Drawing on leading spokesmen from industry and government, the session will cover a range of topics including numerical control conversion, future inventories of mixed parts, automatic drafting, and conversions as applied to machine readable text.

Industry: From manufacturing automation to specific applications in the automotive industry, computer control and data processing techniques are key tools in our search for increased productivity and a more favorable balance of trade. These topics will be explored in six sessions, together with an analysis of graphical applications in the garment industry which, appropriately, is centered in New York City.

Just as computers wed communications a few years ago, data processing is now becoming integral to the automotive industry. Recognizing this, the NCC will feature a two-day program on the automotive field.

Included will be extensive coverage of off-vehicle computers to diagnose automobile malfunctions, the growing use of onboard computers, an analysis of computer use in automotive manufacturing and a summary session covering the impact of computers on the automotive industry including consumerism, safety, and emission control.

Merchandising: From point-of-sale systems through modeling techniques in marketing, the computer is becoming increasingly ingrained in merchandising systems and techniques. Three sessions will provide you with the latest on computers in retail systems and in advertising/marketing.

Retail Systems will cover both point-of-sale and general systems. Under POS, you'll find a wealth of information on systems, terminals and merchandise identification. Included will be discussion of recent work undertaken by the National Retail Merchants Association.

General Retail Systems has been planned to bring you up-to-date on the use of total computer systems in retail—covering marketing, software and systems. Panelists will take the user's point of view with emphasis on current problems.

General Topics: To round out the Methods & Applications Program, eight sessions will cover a variety of topics of major importance to users and corporate management. Included wil be an analysis of publishing, knowledge dissemination, reliability, impact of hand-held calculators, voice answerback, computer use around the world, securities, and, fittingly, "Computers Are For People".

Publishing and knowledge dissemination will cover small office systems up through large-scale computer systems. Blue ribbon panels will discuss current capabilities and characteristics of operational publishing systems that are computer-based from text entry to graphic output.

The need for total systems reliability will be examined in a session on "Reliability for Integration into Human Affairs". From computer-controlled on-line monitoring for medical applications through the Bay Area Rapid Transit System, panelists will cover requirements for extreme reliability.

Three sessions will deal with the intriguing topic of "Ordinary Mortals Using Computers Without Pain". Topic slated for analysis include the impact of hand-held calculators, voice answerback, and the interface between humans and the computer.

Hand calculators will be examined from the point of view of the technologist, the user, and the educator. With prices tumbling and technology still ahead of acceptance, this field will be examined with emphasis on the future impact of inexpensive calculators. In addition, voice answerback will receive careful scrutiny with the accent on human acceptance and increased efficiency.

Finally, "Computers Are For People" will examine the proposition that we have now reached a point where it is both feasible and mandatory that the machine become subservient and palatable to its human user. The psychological and the physical interface between humans and computers will be examined. Existing case studies will be explored and future impact examined in a number of areas.

Science & Technology

The Science & Technology Program is a record breaker—one we're confident will set new standards of excellence for future conferences.

The architect of the S&T Program is Dr. Carl Hammer, Director of Computer Sciences for UNIVAC. Dr. Hammer recognized early the challenge of putting together a dynamic program for the first National Computer Conference. And he was confident of the support he could enlist from his many colleagues.

His confidence was well placed. This program is the result of the help offered by hundreds of dedicated volunteers who have given unstintingly of their personal time. More than 100 papers and almost 400 participants will be featured in 56 sessions. Included will be an in-depth examination of virtually every aspect of developing technology.

Areas slated for coverage include: communications, networking and terminal[illegible] computer architecture and hardware; information processing and pattern recognition; management topics including conversion, data bases, data security, forecasting, and performance evaluation; displays and graphics; EDP education; simulation and process control; software; and areas of broad concern to the computing community.

And, as a special feature, each of AFIPS' 13 Constituent Societies will present a session covering topics of prime interest to its membership.

Communications, Networking and Terminals: Many would agree that most of our network computers have yet to justify their economic or technical viability. The problems are domestic—the super-problems, international. Communications satellites will clearly play an important role in providing necessary transmission capacity.

Network computers presently impact storage, retrieval, the transfer of technical information, and data banks.

How many of the above problems and others are identified and how they are being solved is the subject of six information-packed sessions. In addition, a seventh session will probe intelligent terminals and their future development.

Computer Architecture and Hardware: Associative hardware devices, virtual machine systems, storage systems, optical interconnection technology, special purpose hardware, plus single and multi-purpose mini-computers are presently receiving increased research and development attention.

The worth of these devices and techniques will be demonstrated through a wide variety of applications, although these presently lag the hardware development. How they are being used and how they will be used in data management systems, in sub-mini to super-maxi tactical military computer systems, and in other application areas will be covered in seven sessions.

Information Processing and Pattern Recognition: In most organizations, there is no shortage of information. Yet we're having difficulty getting pertinent information and responding to it properly or in time. The new tools and methodologi[illegible] which are being developed and forecast for the next five to ten years to properly harness information will be discussed in several sessions including one on "Information Science—Promises, Realities, and Futures".

The true power and versatility of the computer has often been demonstrated but rarely as dramatically or beneficially as in the area of pattern recognition. Over ten hours of sessions will be devoted to this important subject. Topics include the inputting of pictorial data into digital computers and advanced techniques in pattern recognition in a variety of areas ranging from medical consulting and diagnosis to aircraft control.

Management Topics: To meet your needs and interests, 73 NCC will feature a host of management-oriented sessions on performance evaluation and resource utilization in the computing process. How conversion problems impact or delay optimum utilization and performance will also be discussed.

For example, trends in data base management is the subject of a four hour session. Data security is covered in three sessions, including a special session in which IBM will give an interim report on its data security study sites. Computer integrated design systems, particularly as they pertain to such large-scale projects as ship design, is the theme of another presentation.

In addition, a panel of five specialists will discuss the thesis that substantial failures in computing departments are due largely to nontechnical managerial causes. How several large companies have recognized and dealt with these managerial failures and how others can avoid them is the subject of still another panel.

And what of the future? The impact on society, the multinational computer, the computer in the home? What's planned for data entry and what further roles will the computer play in communication services? Two sessions on "Views of the Future" will provide some of the answers and are certain to stimulate your thinking on these critical topics.

Graphics: 73 NCC will feature a "Day of Graphics". This all day series of unique sessions will report on recent significant achievements in the important man-made interface of computer graphics.

The program spotlights a few of the graphic programming methods applied to enlarging man's creative ability; in producing three dimensional drawings; and in employing computer graphics in the fields of education, medicine, aerospace, engineering, architecture, art and the movies. A film program will also spotlight computer graphics.

This series of sessions is truly a "Festival of Computer Graphics". Whether you attend the entire 13½ hour program or just a part, the experience promises to be rewarding.

Education: If your area of interest is the use of computers in education or curricula development, you'll benefit from the nine hours of sessions on many aspects of these vital topics. Areas to be covered include improvement of instruction and management, procedures in educational data systems, undergraduate programs in information systems, academic computing at the junior/community college, and a graduate program in computer science.

Simulation and Process Control: Two major sessions will center on simulation and the application of computer technology to the solution of industrial instrumentation and control problems.

Development of the "art" of simulation will be reviewed and panelists will analyze important current work and explore what this portends for the future. The session on instrumentation and control will focus on modeling and simulation, control of continuous processes, and needs for industrial computer standards.

Software: Software and its many facets will be critical ingredients in numerous S&T sessions. In addition, six specific sessions will cover languages, communication, cryptology, and computational processes.

A host of experts will explore recent developments, current needs, and future implications. Topics include computational linguistics, mathematical software, natural language processing, computing for statistical processes, effective methods for designing and developing application packages to meet user needs, and cryptology from the viewpoint of the commercial and industrial user.

Computing Community: As the computing community evolves and matures, the excitement and ad hoc approach of an earlier era are giving way to cool, objective approaches to problem solving at all levels. However, many questions still remain. These questions, and important new ones, will receive close attention in a series of five sessions.

Key areas scheduled for discussion include future needs for EDP systems and applications in pollution control, an analysis of critical turning points in software development, methods to improve communications between the auditor and EDP operating personnel, the role of technical societies in computer resource management, and the legal complications of the computer revolution.

Special Program

To round out 73 NCC, we've planned an extensive Special Program to meet your broad information needs and interests.

Under the direction of Conference Vice Chairman Dr. Charles F. Freiman, Manager of Systems Development for IBM Research, Yorktown, the Special Program includes several high-interest sessions, a full-day program on the Computer Arts, a special seminar on Managing the Impact of Generalized Data Bases, plus featured addresses, luncheons, receptions, and related special activities.

Special Sessions: Ten special sessions will be held on topics of major interest, including a full-day program on The Computer Arts.

Five key sessions will touch on topics of critical importance to our industry. You won't want to miss:

- Computer Technology as a Public Resource
- Venture Capital for the Computer Industry
- Outlook and Prospects for Marketing Abroad—organized by the U.S. Department of Commerce
- Career Development for Computer Professionals
- Economic Future of the Data Processing Industry—organized by the editors of BUSINESS WEEK

Special Management Seminar: A special day and a half seminar "Managing The Impact of Generalized Data Bases" will be held Thursday and Friday, June 7-8. The seminar has been organized by the SIGBDP and SIGFIDET Special Interest Groups of the Association for Computing Machinery. Registration, which includes a copy of the seminar Proceedings and a separate Thursday luncheon, is $40 and is open to all 73 NCC full-conference registrants.

Presentations will review experiences and problems of companies which have installed generalized data bases and will offer a suggested plan for achieving maximum gains through such systems.

Featured Addresses and Conference Functions: In addition to the keynote address at 10:30 a.m. on Monday, June 4, the 73 NCC will feature two major luncheons and two conference receptions.

The Conference Luncheon will be held at 12 noon on Wednesday, June 6, and will feature a major address by Dr. Lewis M. Branscomb, Vice President and Chief Scientist for IBM Corporation. A special Industry Luncheon will be held at 12 noon on Thursday, June 7, and will feature an address by Edward N. Cole, President and Chief Operating Officer of General Motors Corporation.

Conference receptions will be held Tuesday evening, June 5, and Thursday evening, June 7.

Special Activities: You'll have the opportunity to enjoy three special activities at 73 NCC—a Science Film Theater, a Computer Art and Music Exhibit, and a special High School Computer Science Fair.

The Science Film Theater and the Art Exhibit—Circuit NCC—will be held all five days of the conference. The Computer Science Fair will be held Monday and Tuesday, June 4-5, and will be open to the public.

Conference at a Glance

Monday, June 4

10:30
Keynote Address

1:30-3:30

Methods & Applications
Regulation of the Computer/Communications Industry
Robert Bigelow

Voice Answerback Comes of Age
Tom Fisher

Point-of-Sale Systems
Richard K. Hampson

Computer Use Around the World
Bruce Gilchrist

Science & Technology
Association for Computational Linguistics
Robert F. Barnes

Conversion Problems
Bonnie Dunning

Design and Development of Application Packages for Users
Wayne B. Nelson

Computer Evolution and the Next Decade (IEEE Computer Society)
Ned R. Kornfield

Trends in Data Base Management
George Dodd

3:45-5:45

Methods & Applications
Legal Protection for Software
Robert Bigelow

Voice Answerback Comes of Age (contd.)

Data Processing Directions in the Retail Industry
Richard K. Hampson

Science & Technology
Simulation: Past, Present & Future (SCI)
Philip J. Kiviat

Intelligent Terminals
Ira Cotton

Computing for Statistical Purposes—Expectations Amid Accomplishments and Gaps (ASA)
Mervin E. Muller

Natural Language Processing
Aravind K. Joshi

Trends in Data Base Management (contd.)

Information Science and Technology from a Global Viewpoint
Robert M. Landau

Tuesday, June 5

8:45-10:15

Methods & Applications
Performance Evaluation and Measurement
Barry W. Boehm

Computers in the Elective Process
E. Drake Lundell, Jr.

Publishing
Frank Anzelmo

Science & Technology
Instrumentation, Computers and Process Control (ISA)
Arthur C. Lumb

Advanced Hardware
John T. Lynch

Information Science—Promises, Realities, and Futures
Jack Belzer

The Use of Computers in Education (AEDS)
Sylvia Charp

Environmental Quality and the Computer
Peter W. House

Special Program
A Day of the Computer Arts Music: Demonstrations, Presentations, Philosophy
Stefan Bauer-Mengelberg

10:30-12:00

Methods & Applications
Performance Evaluation and Measurement (contd.)

Computers in the Elective Process (contd.)

Publishing (contd.)

The Impact of Hand-Held Calculators
Gregory Williams

Science & Technology
Instrumentation, Computers and Process Control (contd.)

Advanced Hardware (contd.)

Specialized Information Processing (SLA)
Betty B. Brociner

The Use of Computers in Education (contd.)

Special Program
The Editors View Computer Art
Grace Hertlein

1:30-3:30

Methods & Applications
Computers in the Congress
Ernest C. Baynard

Manufacturing Automation
Robert H. Anderson

Knowledge Dissemination
Andrew A. Aines

Science & Technology
Performance Evaluation
Marshall D. Abrams

Information Networks-International Communication Systems
Betty B. Brociner

An Undergraduate Program in Information Systems
Gerald L. Engel

The Impact of Networking on Storage, Retrieval and Transfer of Technical Information
Andrew J. Kasarda

Special Program
The Computer and the Arts
George Arnovick

Economic Future of the Data Processing Industry (Business Week)
Lewis H. Young

3:45-5:45

Methods & Applications
Graphics Applications for the Garment Industry
Fenton Gilbert

Science & Technology
The Auditor's Interface with EDP Systems (AICPA)
Noel Zakin

Performance Evaluation (contd.)

Automated Project Management Systems
Ira Bitz

Academic Computing at the Junior/Community College: Programs and Problems
Harold J. Highland

The Growing Potential of Mini/Small Systems
Douglas B. McKay

Networks and Data Banks: What Contents?
Michael Lesk

Special Program
The Renaissance of Art-Science
Kurt Lauckner

Computer Technology as Public Resource
Alan R. Kaplan

Evening 6:00
Conference Reception

7:00

Special Program
Computer Generated Films
Kenneth Knowlton

Wednesday, June 6

8:45-10:15

Methods & Applications
Five Year Plans for State Government
John Gentile

Computer Use in Automotive Manufacturing
ns Kuschnerus

Science & Technology
Computer History: Critical Turning Points and Software Developments
William F. Luebbert

Interactive Computing: A Mind Expander (SID)
Carl Machover

Resource Utilization in the Computing Community (ACM)
Herbert S. Bright

Data Security in Government
James M. Clayton, Jr.

A Graduate Program in Computer Science
Michel A. Melkanoff

Wave Form Analysis in Clinical Medicine
Harold W. Shipton

10:30-12:00

ethods & Applications
omputer Operations of State Agencies and Universities
John Gentile

Computer Use in Automotive Manufacturing (contd.)

Science & Technology
Computer History: Critical Turning Points in Software Developments (contd.)

Graphic Applications I
Jackie Potts

Resource Utilization in the Computing Community (contd.)

Information Science and Technology through the Eyes of ASIS (ASIS)
Robert M. Landau

Wave Form Analysis in Clinical Medicine (contd.)

Interim Report from the IBM Data Security Study Sites
L. Foster

12:15-1:30

Conference Luncheon
Lewis M. Branscomb, V.P. & Chief Scientist, IBM Corp.

1:30-3:30

Methods & Applications
Urban Services I
Ed Blum

Off Vehicle Diagnostics
Joseph P. Sweeney

Status and Future of Software Products Worldwide
Martin Goetz

Science & Technology
Graphic Applications II (contd.)

Views of the Future I
Murray Turoff

Mathematical Software: State-of-the-Art (SIAM)
William Jameson, Jr.

Secure Data Systems
Lawrence Foster

Computing and the Law: Interactions
Philip H. Dorn

3:45-5:45

Methods & Applications
Urban Services II (contd.)

Development of Generalized Software Products
James Porter

Advertising and Marketing
Charles Gulotta

Simulation of International Relations
George L. Draper

Science & Technology
Views of the Future II (contd.)

Graphic Film Festival
Jackie Potts

Satellite Packet Communications
Lawrence G. Roberts

Special Program
Venture Capital for the Computer Industry
Robert F. Johnston

Evening 7:00

Science & Technology
Graphics in 3D: Sorting and the Hidden Surface Problems
Rodney Allen

Thursday, June 7

8:45-10:15

Methods & Applications
Inhouse Training I
Ms. Dorothy Tucker

Onboard Computers for Automobiles
H. Blair Tyson

Data Integrity
Milton Bryce

Science & Technology
Storage Systems
Ben M. Y. Hsiao

Tutorial on Resource Utilization in the Computing Process
Herbert S. Bright

Special Program
Managing the Impact of Generalized Data Bases (by special registration only)
Charles A. Philips

Outlook and Prospects for Marketing Abroad
Joseph Miller

10:30-12:00

Methods & Applications
Inhouse Training II
Rudolf Gartzman

Onboard Computers for Automobiles (contd.)

Confidentiality and Security I
John Gosden

Reliability for Integration into Human Affairs
Donn B. Parker

Science & Technology
Storage Systems (contd.)

Data Communications Via Satellite (AIAA)
W. G. Schmidt

Tutorial on Resource Utilization in the Computing Process (contd.)

Special Program
Managing the Impact of Generalized Data Bases (contd.)

Outlook and Prospects for Marketing Abroad II (contd.)

12:15-1:30

Industry Luncheon
Edward N. Cole, President
General Motors Corporation

1:30-3:30

Methods & Applications
Inhouse Training III
Gail Buerger

Automobiles, Computers and the Consumer
Herbert Mainwaring

Securities
Robert W. Parker

Confidentiality and Security II
James Riley

Computers are for People
Gabriel Groner

Science & Technology
Network Computers: Economic Considerations—Problems and Solution
William J. Barr

Applications of Automatic Pattern Recognition
Louis S. Rotolo

Special Program
Managing the Impact of Generalized Data Bases (contd.)

3:45-5:45

Methods & Applications
Inhouse Training IV (contd.)

Confidentiality and Security III
Thomas Steel

Computers are for People (contd.)

Metrication
W. E. Andrus, Jr.

Science & Technology
Nontechnical Causes of Failure of EDP/MIS Groups
Herbert Halbrecht

Cryptology in the Age of Automation
Henry Ephron

Network Computers: Economic Considerations—Problems and Solution (contd.)

Ingredients of Pattern Recognition
Robert S. Ledley

Special Program
Managing the Impact of Generalized Data Bases (contd.)

Evening 6:00

Conference Reception

Special Program 7:00
Managing the Impact of Generalized Data Bases (contd.)

Friday, June 8

8:45-10:15

Methods & Applications
Economics and Remote Terminals
Dan Printz

Science & Technology
Virtual Machines
Ugo O. Gagliardi

What's Different About Tactical Military Computer Systems
James A. Ward

Associative Processors
P. Bruce Berra

Computer-based Integrated Design Systems
Herbert M. Ernst

Discrete Algorithms, Application and Measurement
Michael L. Krieger

Special Program
Managing the Impact of Generalized Data Bases (contd.)

Career Development for Computer Professionals
Paul Oyer

10:30-12:00

Methods & Applications
Economics and Remote Terminals (contd.)

Science & Technology
Virtual Machines (contd.)

What's Different About Tactical Military Computer Systems (contd.)

Associative Processors (contd.)

Computer-based Integrated Design Systems (contd.)

Discrete Algorithms, Application and Measurement (contd.)

Special Program
Managing the Impact of Generalized Data Bases (contd.)

Exhibit Hours
Monday 12-8
Tuesday—Thursday 10-6
Friday 9-12

Act Now...

...To put yourself in the picture at the first National Computer Conference & Exposition. 73 NCC brings it all together—and affords you the one opportunity to tour the world of data processing in five fact-filled days.

A variety of conference registrations are available to fit your needs. By registering in advance you can put yourself in the picture immediately and avoid long lines at the Coliseum.

Full conference advance registration covering the entire five days of the program including exhibits is $50 for members of AFIPS' Constituent Societies, and $60 for non-members. Or you may pre-register for any one day of the conference program and exhibits for $20—or for all five days on an exhibits-only basis for $15.

Full conference registration includes your copy of the comprehensive 73 NCC Proceedings. Post-conference price for the Proceedings alone is $40.

The following pages contain your official 73 NCC registration and housing forms. We hope you'll take advantage of this opportunity to get on board for the Biggest Computer Show on Earth.

New York in June

Whether it's business or pleasure, New York in early June has a magic all its own.

Located at the heart of the Boston to Washington megalopolis, New York has been called the corporate headquarters of the world—and, as such, is the hub of U.S. commercial activity.

On the other side of the ledger, New York stands alone in its diversity of cultural events, museums, historical sites, entertainment, fine stores, and first-class restaurants and accommodations. Whatever your inclination you'll find New York a town for all seasons—and a "Summer Festival" offering an endless variety of activities and events.

Advance Registration Procedure

1. Complete the Advance Registration form in detail.
2. Make your check payable to 1973 NCC in U.S. dollars. Include amounts for luncheons and special seminar if you wish to attend.
3. Mail the form with your check to AFIPS Headquarters prior to May 15, 1973.
4. Each registrant must complete a separate form or a facsimile of this form.

Cancellation Policy

To receive a refund, cancellations must be received in writing at AFIPS Headquarters no later than May 15, 1973.

Registration Form

Type of Registrant	Advanced Registration	Registration at NCC
Full Conference Registration		
Members of AFIPS Constituent Societies	☐ $50***	$60***
Non-Members**	☐ 60***	60***
Single Day*	☐ 20	20
Students with Identification	☐ 5	5
Exhibits Only		
Five Day Exhibits	☐ 15	15
One Day Exhibits		5
Special Activities		
Luncheon, Wednesday, Dr. Lewis Branscomb	☐ 12	12
Luncheon, Thursday, Edward Cole	☐ 12	12
Special Seminar and Luncheon—Managing the Impact of Generalized Data Bases (Available to full registrants only)	☐ 40	40
Total		

*Must indicate which day you plan to attend on registration form.
**$10 of the Non-Member registration fee may be applied to membership in any one of the AFIPS Constituent Societies.
***Proceedings are included.

Society Memberships (Check all applicable) Please Print

1 ☐ SCI 2 ☐ IEEE 3 ☐ ACM 4 ☐ ACL 5 ☐ AIAA 6 ☐ AICPA 7 ☐ ASA 8 ☐ ASIS 9 ☐ ISA A ☐ SIAM B ☐ SID C ☐ SLA
D ☐ AEDS E ☐ Non-Member

*Days I wish to attend full conference. ☐ Mon. ☐ Tues. ☐ Wed. ☐ Thurs. ☐ Fri.

Name______________________________
Last First Middle Initial

Title______________________________

Company______________________________

Address______________________________

City______________State______________Zip______________

Make check payable to 1973 NCC.
Return this form to: 73 NCC, c/o AFIPS,
210 Summit Avenue, Montvale, N. J. 07645, prior to May 15, 1973.

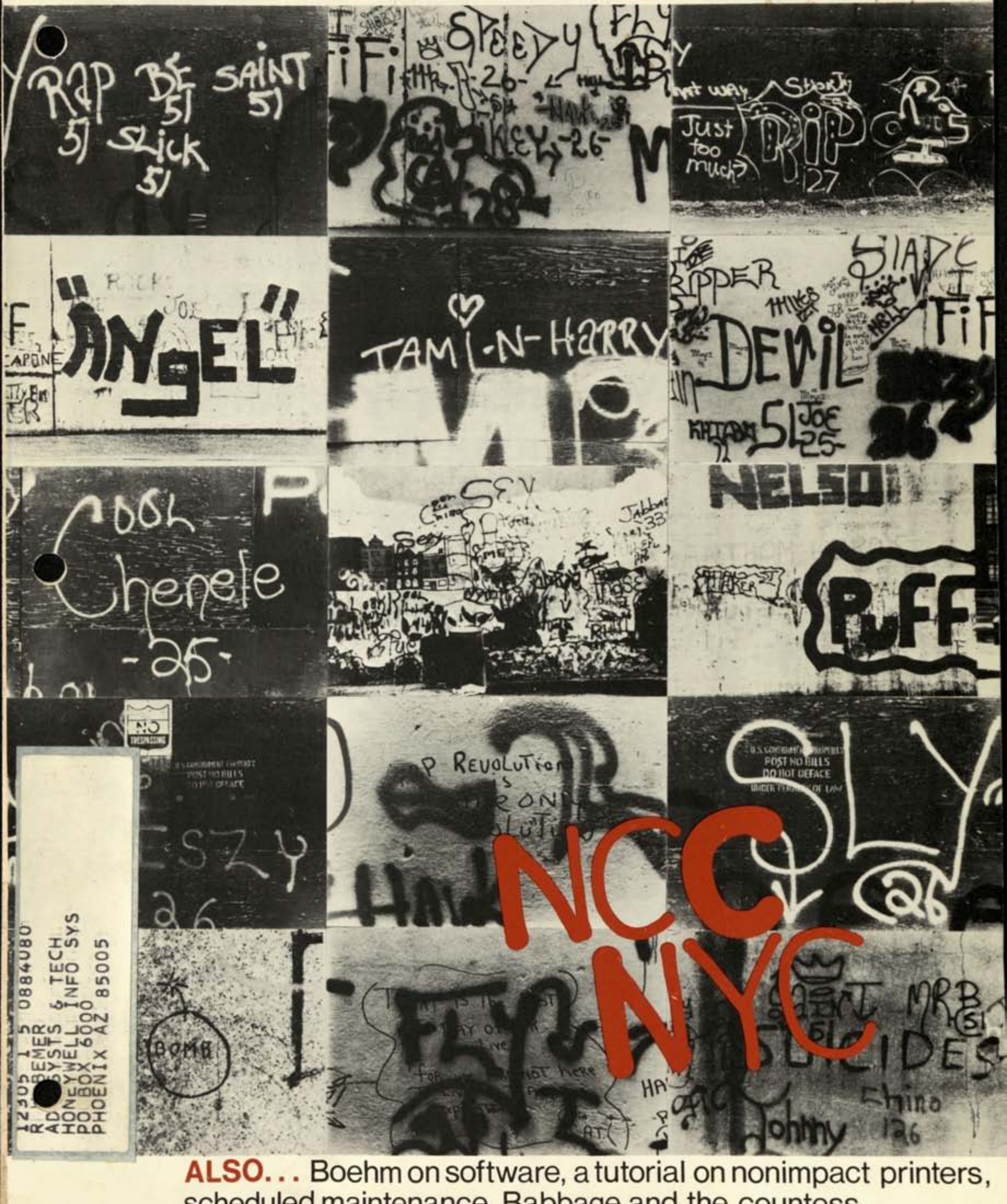
Note: All badges, Program Booklets and other registration materials will be *mailed* to you provided applications are received prior to May 15, 1973.

Applications received after May 15, 1973 will be processed for pickup at the Registration Desk at the N.Y. Hilton Hotel.

American
Federation of
Information
Processing
Societies, Inc.

210 Summit Aven
Montvale,
New Jersey
07645

DATAMATION '73 ®
May



ALSO... Boehm on software, a tutorial on nonimpact printers, scheduled maintenance, Babbage and the countess...

VTAM, the VORTEX Telecommunications Access Method. Hook up with your big computers and multiple terminal networks. Fully integrated in Varian's own V73 with VORTEX (our multi-task real time operating system), it's an off-the-shelf communications software capability and it's second to none.

VTAM is the only telecommunications system which includes file management systems, simultaneous foreground/background processing, and multi-threading as integral parts of the package.

Our VTAM is an articulate, price/performance conscious executive with an open ended system structure. It provides teleprocessing controls for our communication controllers, modems, terminals, communications networks, and network operator controls.

Terminal and teleprocessing I/O are handled as logical units. VTAM is extraordinarily easy to use; application-level programming is all that's required.

Perhaps the most important feature of VTAM is its flexibility. It functions equally well as a base in a broad range of communications applications—from systems dedicated to functions such as store and forward message switching or front end processor. Or, the communications may be a supplemental function to other processing tasks. Like remote inquiry into an instrumentation data base. Or satellite processor connection with a distributed processor network. Even data exchange with a remote host computer after local processing.

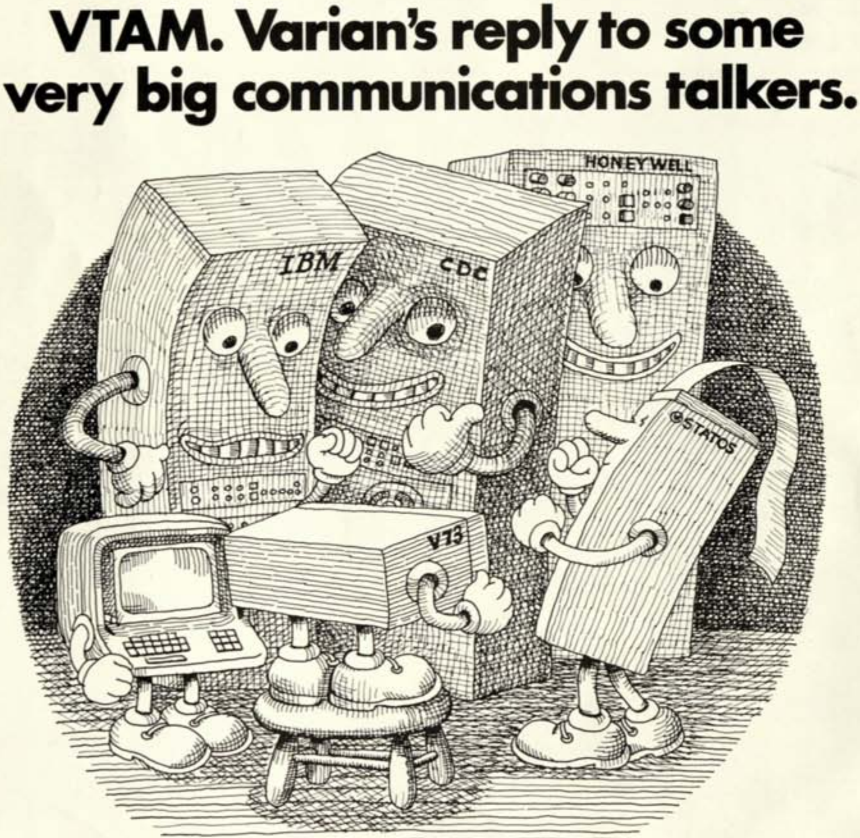
And modularity lets VTAM handle systems that range from one or two low speed lines to large multi-node networks. From simple teletypes to the most complex line disciplines.

Our microprogrammed, message mode Data Communications Multiplexer completes the hardware/software package and takes full advantage of our multi-bus, extendable architecture 330 nsec V73. With message mode communication, software overhead is minimal. VTAM and our other data network or stand-alone packages are available now. At far less cost than you would have thought possible in a system this size.

For the full story write Varian Data Machines, 2722 Michelson Drive, Irvine, California 92664 or call (714) 833-2400.

varian data machines

VTAM. Varian's reply to some very big communications talkers.



CIRCLE 1 ON READER CARD

POSSIBLE - MON NOON - HART/LINDSAY
~40 PEOPLE??

RWB PARTICIPATION - TUE 9-12 PUBLISHING
WED 9-12 S/WE HISTORY

NCC NYC

Conference Particulars

by Janet Eyler
Assistant Editor

It's all-eggs-in-one-basket time as the American Federation of Information Processing Societies, making a "total commitment . . . to create a major forum for the entire data processing community," presents the first annual National Computer Conference & Exposition the week of June 4 in New York City. The NCC supersedes the AFIPS-sponsored Spring and Fall Joint Computer Conferences that have been with us for more than 20 years.

The 1973 NCC&E features over 90 technical sessions, more than 200 vendors exhibiting in some 700 booths, three special addresses, two receptions, a science film theater, a computer art exhibit, and a high school computer science fair. Really big.

Technical program

The program is divided into three parts, one of which is labeled Methods & Applications; the other, Science & Technology; and the third, Special Program. Overall, this looks like the best organized and highest quality technical program we've ever seen at an AFIPS bash.

Methods & Applications includes approximately 35 sessions covering installation management, government, industry, merchandising, and general topics. Most of these sessions are in panel format and will not be reported in the *Proceedings*.

Science & Technology features approximately 50 sessions on communications, networking, and terminals; computer architecture and hardware; information processing and pattern recognition; management topics; education; simulation and process control; software; and the computing community. Included in the Science & Technology program are sessions sponsored by each of the 13 AFIPS constituent societies and a "Day of Graphics," reporting on significant achievements in the important man-machine interface of computer graphics. Two-thirds of these sessions are panel or paper/panel discussions receiving limited coverage in the *Proceedings*.

Sessions in the Special Program include a full day of "The Computer Arts" and a day-and-a-half special registration (read $40) seminar Thursday and Friday on "Managing the Impact of Generalized Data Bases." Other special sessions are the "Economic Future of the Data Processing Industry," "Computer Technology as a Public Resource," "Venture Capital for the Computer Industry," "Outlook and Prospects for Marketing Abroad," and "Career Development for Computer Professionals."

See the "Session Summaries" segment of this section for invited essays contributed by the Methods & Applications and Science & Technology session chairmen, and check the "Conference at a Glance" chart for an overview of the entire technical program.

Vendor exhibits

Exhibits at the New York Coliseum by more than 200 hardware, software, and services vendors will be open all five days of the conference: Monday, noon to 8 p.m.; Tuesday through Thursday from 10 a.m. to 6 p.m.; and Friday, 9 a.m. to noon.

Looks as if the hardware exhibits will be pretty evenly split between oem and end-user products, with the emphasis on computer systems (we hear most of the mainframers will be back after a couple of years' absence from the JCC's, including IBM), peripherals, terminals, and communications products ranging from modems to large-scale line concentrators. The "Product Preview" segment of this section describes approximately 40 products being introduced to the public for the first time at 73 NCC.

Special events

In addition to the Monday morning keynote session, whose speaker was not yet announced at press time, there will be two special luncheon addresses. On Wednesday at the Americana, Dr. Lewis M. Branscomb, vice president

Dr. HARVEY L. GARNER, Director and Professor of The Moore School of Electrical Engineering, Univ. of Pennsylvania, is serving as General Chairman of 73 NCC.

EDWARD N. COLE, President and Chief Operating Officer of General Motors, will connect the computer and automotive industries at the Industry Luncheon in a speech entitled "Common Language and Common Future."

Conference Luncheon speaker is Dr. LEWIS M. BRANSCOMB, Vice President and Chief Scientist, IBM Corp. His topic: "The Doomsayers and Human Destiny."

The Sessions

For Those Attending NCC

The day of each session is noted in parentheses at the end of each session summary. If a session interests you, check your program booklet for the list of participants and the exact time and location.

For Those Not Attending NCC

These short tutorials, written by the various session chairmen, cover a wide variety of computer applications and technology and have been edited as general-interest summaries.

Information Science and Technology From a Global Viewpoint

This panel session, sponsored by ASIS, will provide the audience an insight into the areas of activities of concern to members of ASIS in information science and technology (IST). The panel members will consider the impact and implications of the following from the viewpoint of an operator of an information analysis center and other document processing activities, an industrial information scientist, a representative of the library community, and a representative of the government:

1. Most scientific and technical information systems are working at increasingly unacceptable levels of cost and performance.

2. Most decision makers are making decisions with a decreasing proportion of the information that exists but is not available at the time of decision making.

3. The United States is rapidly emerging from the existing industrial society organized primarily around technology and its use for the production of goods into a postindustrial society organized around information and its utilization.

4. Computing power capacity is going up 25% per year while the costs are going down 25% per year.

5. A sharper delineation is developing between the methodology and equipment required by acquisition, reduction to storage media (print, microform, or machine-readable), and retrieval of information.

6. Effective and economical direct control, access, and utilization of large information banks are rapidly becoming feasible through the use of microfiche, computer terminals, and networks.

7. In terms of information transfer, there is a dramatic increase of the quantity of information being transferred and a collapse of time and distance through technology advancement.

8. The human brain can only absorb information at a finite rate. The information production, transfer, storage, and re-

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Particulars

and chief scientist of IBM, will address the Conference Luncheon on "The Doomsayers and Human Destiny." A special Industry Luncheon on Thursday at the Hilton features Edward N. Cole, president of General Motors, who will connect the computer and automotive industries in a talk entitled "Common Language and Common Future."

Outside the center ring, conferees can attend three other events of the Special Program. One is the Science Film Theater, a regular feature of past JCC's, which will run continuously during the conference, from 2-5 p.m. on Monday; 11 a.m. through 5 p.m. on Tuesday, Wednesday, and Thursday; and from 10 a.m. till noon on Friday. A new feature of NCC is a High School Computer Science Fair where both hardware and software projects will be displayed on Monday from noon to 6 p.m. and on Tuesday from 8:30 a.m. to 6 p.m. A third special event is the computer art exhibition of the U.S. branch of the Computer Arts Society. This display will be open during the same hours as the vendor exhibits.

The two no-host conference receptions will be held—Tuesday evening at the Americana and Thursday evening at the Hilton at 6 p.m.

NCC PROGRAM CHAIRMEN: The Special Program is directed by Dr. CHARLES V. FREIMAN (left), Manager, Systems Development, IBM Research Center, Yorktown Heights, N.Y. ROBERT W. BEMER (center), Staff Consultant to the Vice President of Advanced Systems and Technology, Honeywell Information Systems Inc., Phoenix, heads the Methods & Applications Program. Chairman of the Science & Technology Program is Dr. CARL HAMMER (right), Director of Computer Sciences for Univac.

Registration

Now that you realize you dare not miss this Great Event, here are a few words on registration fees. (Advance registration, which is $10 less for AFIPS constituent society members, closes May 15; the fee schedule given here is for registration at NCC.) Full five-day registration for the technical program and the exhibits is $60, including the 1,000-page *Proceedings*. Single-day registration is $20. Student registration is $5. Exhibits-only registration fees are $15 for five days and $5 for one day.

For further program, registration, or housing information, write AFIPS, 210 Summit Ave., Montvale, NJ 07645. If you're in a rush, call (toll-free) 800/631-7070 (in New Jersey, 201/391-9810). ☐

trieval must be dramatically improved in view of this human limitation.

9. The relative costs of the new on-line information retrieval systems ($10-40 per query) is significantly lower than the traditional manual or computer batch processing systems ($40-100 per query). In addition, the quality of the answer and speed of response are dramatically improved. You get more of what you want and less of what you don't want immediately and at lower cost. (Mon. p.m.)

—**Robert M. Landau**
Science Information Assn.
Washington, D.C.

Legal Protection for Software

Software: Do you patent it? Copyright it? Protect it by trade secrets? Or what? Last November, the Supreme Court decided that a specific program was not patentable. Two patent lawyers who were intimately involved with this case will be on the platform. Elmer W. Galbi, patent counsel for IBM's Systems Development Div. has been very active in opposing software patents and is the author of the IBM Registration proposal filed with the Patent Office some years ago. William L. Keefauver runs the Patent Dept. of Bell Telephone Laboratories, assignee of Benson and Tabbott's patent application.

Morton David Goldberg, a New York attorney who has frequently written on copyright protection for software will talk about this aspect; Mr. Galbi will probably discuss why IBM has opted for this form of software protection.

Roger Milgrim, the author of a leading treatise on trade secrets and General Counsel of SHARE, will round out the panel, while the moderator will talk about some of the contractual problems involved in giving software developers legal protection for their product. (Mon. p.m.)

—**Robert P. Bigelow**
Attorney at Law
Boston, Mass.

Voice Answerback Comes of Age

Voice answerback has been a reality since 1960. Over the years it has grown to well over 200 systems installed in the United States. The tool is probably the least understood of all computer applications.

It is a system that is made up of three parts; a terminal, a computer, and a voice-answerback unit. The system is at its best when it functions in the role of (1) prompting the user, (2) auditing and editing the user's input, or (3) in confidence, calling the user's attention to error and guiding the user to a correct entry.

The first component of the system, the terminal (touch-tone telephone), is probably the most tested. It resulted from the greatest totally human factors-oriented effort yet to be applied to the development of a terminal. So extensive was this that it would more than total the research effort of all other terminals put together. The terminal is used by more people everyday from all walks of life than all other terminals combined.

It is the intent of this session to develop a background to verify the fact that this concept, above all others, is the prime example of "Ordinary Mortals Using Computers Without Pain."

This session will permit the audience to hear the developers' descriptions of applications ranging from kindergarten children using the system in conversational mode to skilled users in the complex application of production control and operation of a stacker crane automated warehouse. The presentation will cover a range from stand-alone to subsystem and as data entry to information and control.

The applications selected and demonstrated cover a broad spectrum and show the capability for user satisfaction with little or no training.

Voice answerback units from Cognitronics, IBM, Periphonics, and Wavetek will be presented live from the speaker's data processing installation.

A lively question-and-answer period is expected. Look for participation by Bell System Laboratory, City National Bank of Bridgeport Conn., Emery Air Freight, Honda of America, Rohr Industries, South Western Bell Telephone, and Western Electric. (Mon. p.m.)

—**T. C. Fisher**
IBM Corp.
Los Angeles, Calif.

Intelligent Terminals

Intelligent terminals are those which, by means of stored logic, are able to perform some processing on data which passes through them to or from the computer systems to which they are connected. Such terminals may vary widely in the complexity of the processing which they are capable of performing. The spectrum ranges from limited-capability point-of-sale terminals through moderately intelligent text-oriented terminals up to powerful interactive graphics terminals. The common thread that ties all these types of terminals together is their processing power—and the questions relating to it.

What, for example, is the proper or most efficient division of labor between the terminals and the central computer? What are the limits, if any, to the power which can be provided in such terminals? Need we worry about the "wheel of reincarnation" syndrome in which additional processing power is continually added to a terminal until it becomes free-standing . . . and then terminals are connected to it?

This session was planned to at least expose to critical discussion some of these questions, if not answer them. Three papers will be given covering three regions of the spectrum identified above. The session is billed as a panel session, and three panelists have been invited to represent roughly the same regions on the intelligent terminal spectrum as the three authors.

It is, of course, impossible to report in advance on the panel discussion, of which audience participation will be a large part. The position papers raise many of the issues that I expect will be discussed. Perhaps some means can be found to report on any new points or insights gleaned from the discussion. In addition, all of the work is ongoing, and all of the authors (and the chairman) welcome further discussion beyond the confines of the conference. For further readings, see the Chairman's Introduction (in the *Proceedings*) which will include a bibliography of articles dealing with intelligent terminals. (Mon. p.m.)

—**Ira W. Cotton**
National Bureau of Standards
Washington, D.C.

Regulation of the Computer/ Communications Industry

This session will consider the final results of the FCC's computer inquiry which started in November 1966 and ended with a court decision on February 1 of this year, generally affirming the commission's position. The scope of regulation of data processing, communications, and hybrid services in between will undoubtedly be discussed by the panel, which includes Bernard Strassburg, Chief of the Common Carrier Bureau of the commission.

Interconnection of customer-owned equipment with the telephone system will probably also be discussed by Mr. Strassburg, who will be joined on the platform by George Ashley, an attorney concerned with regulatory matters for the Bell System for many years and on June 1 becomes the General Counsel for the New York Telephone Co. The economic aspects of communications—integration, interrelationship, and monopoly—will be considered by William Melody, a well-known economist in the communications field and associate professor at the Annenburg School of Communications at the Univ. of Pennsylvania.

Dan L. McGurk, president of the Computer Industry Assn. and formerly president of Xerox Data Systems, will probably discuss the activities of his organization and the antitrust suits won, lost, settled, and pending. Mr. McGurk may also cover the problems of peripheral manufacturers.

Commentary on the panelists' positions will be given by Lee Loevinger, currently a practicing lawyer in Washington, formerly a member of the Federal Communications Commission and before that the Assistant United States Attorney General in charge of the Antitrust Div. (Mon. p.m.)

—**Robert P. Bigelow**
Attorney at Law
Boston, Mass.

Computer Use Around the World

This panel is aimed at giving the attendee a quantitative view of the degree of computer usage in key areas of the world.

Speaking about the European scene will be Hans Gassmann of the Organization for International Co-Operation and Development in Paris, who, for the last several years, has been involved in studies of the use of computers in OECD member countries. Japan will be represented by Shohei Kurita of the Research Department of the Japan Electronic Computer Company (JECC). In addition to handling the leasing of most computers built and sold in Japan, JECC has for the past several years conducted detailed studies of where and how computers are being used in Japan. The Soviet computer scene will be discussed by Barry Boehm of The Rand Corp., who will draw upon the continuing studies of Rand on Soviet cybernetics. The chairman, Bruce Gilchrist of AFIPS, will contribute data on the United States position. It is expected that attendees from various parts of the world will also contribute facts and figures on computers in their countries.

By the end of the session it is hoped that the attendees will have gained a broad constructive overview of computer use around the world. Although facts and figures will be emphasized, this will be done only to the extent necessary to provide a broad perspective. It is hoped that the attendee who wishes to subsequently find out more information about a particular country will have been given sufficient background and information about where appropriate data is available that he will be pointed in the right direction.

There are well over 100 countries in the world, and almost every one of them uses computers. The panel aims to "tell you all it can about computers in the world" in two hours. (Mon. p.m.)

—**Bruce Gilchrist**
AFIPS
Montvale, N.J.

Conversion Problems

The majority of DATAMATION readers have or are acquainted with someone who has experienced conversion problems. The range of the problems covers the spectrum from frustrating through amusing to sad.

The theme of the conversion panel is not only to look at software and hardware as intregal members of the conversion package, but to add man into the system. Training, attitudes, and approaches of managers, programmers, operators, and users must be considered and included in the conversion systems' design.

The panel members each have had experience with problems generated by conversion of one system to another and hopefully will include possible remedies based on their experiences. It is hoped that the attendees will participate in the forum discussion in order to highlight the need for standardization, the pitfalls generated by conversion, and alternative solutions to conversion problems. If the discussions are fruitful, they can serve as a basis for follow-on sessions along the areas deemed most promising.

This session was engendered by the belief that support can now be generated to effect solutions to the problems we have dealt with or are experiencing due to lack of commonality. Let us hope that a better understanding of the methodology needed to solve conversion problems will result.

Specific topics to be discussed by the participants range from a case study of a government procurement of an unspecified system to Southern Railway's successful conversion using parallel operation. Other topics include use of multisystems and problems stemming from system changes to take advantage of technological advancements or more complex utilization and application requirements. (Mon. p.m.)

—**Bonnie W. Dunning**
U.S. Army Military
Personnel Center
Alexandria, Va.

Retail Industry

The railroad was not the first effective use of the steam engine, but steam railroading did have a most profound effect on our country. Likewise, the retail industry was not the first sophisticated computer user, but may well profoundly direct the course of computer utilization. Effective solutions to the problems facing the information systems segment of the retail industry will help guide the course of the data processing industry. The effects of these systems will be felt by us all in two ways: (1) as computer professionals, and (2) as consumers.

As computer professionals, each of us can utilize the implementation principle, design principles, and equipment which can produce effective systems where constraints are severe. For example, in the retail industry, where the profit on an item such as a can of beans might be ½¢, the cost for recording a transaction must be minuscule. Likewise, the transaction volumes are high. Nearly 30 billion packages of cigarettes alone were sold in 1972. In addition, the information collection and distribution points are often small and scattered geographically.

As consumers, we are in direct contact with successful, and faulty, retail systems. This is one industry where the data processing department has as much visibility to the customer as the sales department.

The retail industry sessions—"Point of Sale Systems" and "Data Processing Directions in the Retail Industry"—will be presented by some of the most knowledgeable people in the industry on retail systems and equipment and will provide some insight into what is happening and what can happen in data processing in the retail industry. (Mon. p.m.)

—**Richard K. Hampson**
Data Technology Industries
Riverdale, Md.

Tuesday

Performance Evaluation and Measurement

Computer System measurement and performance evaluation is currently one of the hot topics in the computer field. As in most such cases, there is a great deal of benefit to be gained, a great deal of overselling and wasted effort, and a great deal of confusion about what leads to which. This session will attempt to reduce this confusion by providing a forum for discussing the technical results of the recent ACM/NBS Workshop on Computer System Performance Evaluation. In this workshop, about 25 outstanding representatives of industry, business, government, and universities met for three days of structured discussion on topics such as:

Objectives and criteria for performance evaluation and their variation with respect to end-use area and level of management concern;

Capabilities and limitations of hardware, software, observational and statistical techniques in providing and analyzing data relevant to the objectives and criteria above;

Interactions between the objectives and techniques of performance evaluation with those of complementary pursuits such as system design, validation, reliability, and data security and privacy assurance;

Appropriate activities for improving performance evaluation capabilities and procedures by means of standards, research and development, education and training, and professional society activities.

Panelists will summarize the points of substantial agreement and disagreement reached during the workshop and provide an opportunity for members of the audience to discuss the results. (Tues. a.m.)

—**Barry W. Boehm**
The Rand Corp.
Santa Monica, Calif.

Information Science—Promises, Realities, and Futures

To what degree is information and its technology contributing to the learning process? How accurately can information be provided to research personnel and how quickly? Is available information being used to enhance the quality of life?

Information retrieval systems developed so far have not been very innovative. During the automation phase, all of the shortcomings of the manual systems were carried over. In response to users' queries, the systems provide them with surrogates like citations or abstracts. Based on the surrogates the scientists predicts which documents from that set are relevant to him, and he proceeds to acquire them. Even the full documents are no more than surrogates. The user wants information, and we give him documents which hopefully contain this information. He must read the document to ascertain whether indeed it does, or does not contain the information he wants.

Were the system able to supply him with the information he wants, it would not be necessary for him to read the entire document, or possibly several documents. This is so because our so-called information retrieval systems are in fact bibliography-producing systems, and what we store is not meaningful information, but documents. Instead of storing results of an experiment, we should be storing the method of experiment with the range and frequency of variation of each parameter. The system should be able to regenerate the results of the experiment on demand. Present-day information retrieval systems are addressing themselves to the wrong problem. People want information; we give them documents. Information systems should regenerate information instead of retrieving it.

The panel is concerned with what is being done today and what we should be doing during the next 5-10 years. It must specify why we are not doing it today and perhaps identify or isolate the research and/or development needed to get there. For example, one of the major problems in our society is education. A large percentage of our GNP goes into education. Can we enhance the learning process using information technology? Will information technologies help learning? These and related questions will be explored by the panelists. (Tues. a.m.)

—Jack Belzer
University of Pittsburgh
Pittsburgh, Pa.

Environmental Quality and the Computer

The environment is a large and broad-based system of cause-and-effect relationships. A seemingly minor action at one point in the system might very well precipitate destructive consequences; yet, at the same time, simple actions can spark vast improvements. It is only when those trends, processes, activities, and policies which may have either a deleterious or more beneficial future effect on the environment are well understood that proper actions may be taken to achieve meaningful improvements in environmental quality. The complexities and interactions involved in environmental quality are of such magnitude and scope that effective use of the computer provides a significant opportunity to enhance our comprehension and management of the environment.

This opportunity takes many varied forms, and it encompasses all the conceivable applications of the computer. At one end of the spectrum are applications of models and complex simulations of the total environment, useful to planners and policy makers at the highest level. The only theoretical limitation to this type of application appears to be the human ability (or inability) to replicate the real world and thus project or forecast the future.

At the middle point of the spectrum are applications of the computer concerned with modeling specific functions of environmental quality, such as measuring air pollution or river basins, or simulating noise, etc. Automated systems continue to be developed to aid engineers and others attempting to set standards and monitor progress.

Perhaps the largest area of application involves the collection, storage, manipulation, and retrieval of environmental data. Virtually all actions under consideration for improving the environment require substantial data for evaluation. And monitoring of the environment has become a necessity for quality. Environmental information systems are relatively new applications, but the needs for "good" data continue to expand.

These types of applications will be explored by this panel. Papers will be discussed on models and information systems, and the panelists will project the future needs and opportunities at all levels for new systems and applications in the area of environmental quality.

The environment belongs to all of us. As computer professionals, we should focus our talents and abilities wherever possible toward enhancing the quality of our environment. Technology has a role—it is up to us to identify, promote, and help solve the important problems of society. (Tues. a.m.)

—Peter W. House
U.S. Environmental Protection Agency
Washington, D.C.

Graphics Applications for the Garment Industry

About 50% of the cost of a garment is in the cloth or piece goods. With this high percentage in mind, it appears curious that so little attention has been devoted to the pattern marking and cutting areas of the garment industry over the years.

However, this attitude appears to be changing, and a revolution in these areas is occurring.

This revolution really started about 10 years ago when IBM first announced a computerized pattern grading software package. However, it was not until 1967 that the momentum picked up with the availability of a drafting system which could actually cut graded patterns for the industry. In 1970 several firms announced automatic systems for the automatic cutting of cloth. And finally, within the past year, electronic marker making through the utilization of a crt on-line with edp equipment became a reality and closed the technological gap in this segment of the garment industry.

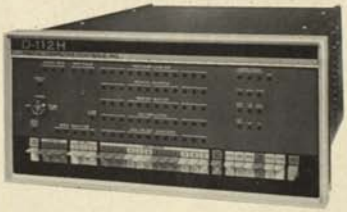
So what does the industry have available today with respect to tools which can be used to increase productivity in the pattern, marking, and cutting rooms? Today systems are available which integrate computerized pattern grading, electronic marker making, and automated cloth cutting for most segments of the industry. It is these three prime areas with which the NCC program will be concerned. It is believed that greater attention should be given to these important areas by the garment manufacturers in order to be able to compete effectively with the worldwide markets.

Through the utilization of these new techniques there are a number of advantages inherent for the garment manufacturer. First and foremost is the possible savings of piece goods by constructing markers which will yield greater cloth utilization. Also important is the reduction of the manufacturing cycle from the design of the garment through the cutting of the cloth which will permit the manufacturer to remain current with the style

Which company da

Digital Equipment Corp.
Model: PDP-8E
Price with 4K memory (list): $4,490
Speed (Cycle Time): 1200ns
Storage Capacity: 32K words
Word Size: 12 bits
DMA (Standard): yes
Input/Output slots: 3

CIRCLE 159 ON READER CARD



Digital Computer Controls Inc.
Model: D-112H
Price with 4K memory (list): $4,095
Speed (Cycle Time): 900ns
Storage Capacity: 32K
Word Size: 12 bits
DMA (Standard): yes
Input/Output slots: 7

CIRCLE 160 ON READER CARD

Digital Equipment Corp.
Model: PDP-11/15
Price with 4K memory (list): $6,000
Speed (Cycle Time): 900ns
Storage Capacity: 32K words
Word Size: 16 bits
DMA (Standard): yes
Input/Output slots: 3

CIRCLE 161 ON READER CARD

We are not signing this ad, because we want you to be the judge.

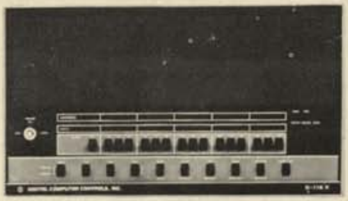
We ask you to apply your computer expertise. Read the above specs. And tell us which of the six minicomputers offers the best combination of capabilities and advantages, including price.

Let's face it. These are all good minicomputers made by reliable companies. But we are confident enough in our prod and your discernment to ask you to make the evaluation.

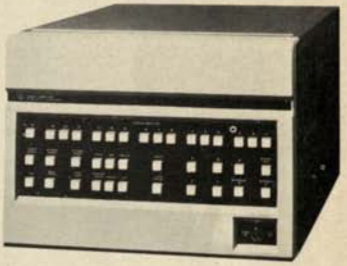
To participate in the voting, circle the one

res run this ad?

Data General
Model: Nova 1210
Price with 4K memory (list): $4,000
Sp[illegible] (Cycle Time): 1200ns
St[illegible] Capacity: 32K
Wor[illegible]Size: 16 bits
DMA (Standard): yes
Input/Output slots: 4
CIRCLE 162 ON READER CARD



Digital Computer Controls Inc.
Model: D-116H
Price with 4K memory (list): $4,000
Speed (Cycle Time): 960ns
Storage Capacity: 32K
Word Size: 16 bits
DMA (Standard): yes
Input/Output slots: 7
CIRCLE 163 ON READER CARD



Hewlett-Packard
Model: HP-2100A
Price with 4K memory (list): $7,200
Speed (Cycle Time): 960ns
Storage Capacity: 32K
Word Size: 16 bits
DMA (Standard): yes
Input/Output slots: 14
CIRCLE 164 ON READER CARD

number on the reader service card which indicates your choice. If you pick our computer, we will send you a small gift attesting to your expertise, plus a comparative spec sheet. If you don't pick us, we'll tell you who we are and send you the spec sheet with our compliments.

The name of our computer company will also be published in a later issue.

R[illegible]ember, to cast your vote, circle only one [illegible] six numbers on the reader service card. The publisher will process and validate the returns. Good luck! The Unlisted Computer Company.

or fashion aspect of the business. Thirdly is the reduction in the number of operating personnel required for these operations. (Tues. p.m.)

—**Fenton L. Gilbert**
Graphical Technology Corp.
Long Island City, N.Y.

Information Networks —International Communications Systems

International communications are being enhanced by information networks which are broader in scope and service, more viable and efficient. The value of national networks is already known, but the full impact of international networks has not yet been realized. The Special Libraries Assn. will present a forum for the discussion of national and international information networks operating in several countries and demonstrating the utilization and transfer of information within national borders and across international boundaries.

Dr. Jack E. Brown of the National Science Library, National Research Council of Canada will conduct the forum and present a paper entitled "A National Scientific and Technical Information System in Canada." Dr. Kjell Samuelson of the Royal Institute of Technology, Stockholm, Sweden, will talk about "Global Networks for Information, Commerce and Computers." Dr. G. S. Martini of the Dag Hammerskjold Library, United Nations, will discuss the "Computer-Assisted Indexing Programme of the United Nations." Miss Natalya Tyulina, Director of the United Nations Library, will present a paper for Dr. Oggan Chubarian, Deputy Director of the Lenin Library in Moscow in which he will discuss network systems in the USSR. (Tues. p.m.)

—**Betty Boyd Brociner**
MIT Lincoln Laboratory
Lexington, Mass.

Manufacturing Automation ✓

There now exist significant manufacturing facilities in which essentially all operations are directly tied to a real-time information and control system. These facilities are not "totally automated," nor should they be. But operations as complex as the manufacture of disc brake assemblies are current examples of such systems. On the other hand, managers of complex job-shop operations often have only batch-printed listings to aid them in the dynamic control of their resources, due primarily to a lack of flexibility in present software systems; those systems are unable to cope adequately with the dynamic job-shop environment.

The presentations and panel discussion in this session are meant to get answers to some important questions: What hardware and software is available today for computer control of manufacturing operations? What are the shortcomings of existing systems, and what needs are not currently being met? What important developments can be expected?

The panel assembled for this session contains key representatives of three important groups: managers with line responsibility for manufacturing operations —the users of automation technology— who must assess the expected return on investment for new technological applications; suppliers of components of state-of-the-art computer-based manufacturing systems; researchers in computer-based manufacturing technologies that are expected to have a major impact in the future.

The session will consist of four invited presentations, followed by a panel discussion with audience participation. (Tues. p.m.)

—**Robert H. Anderson**
USC Information
Sciences Institute
Marina del Rey, Calif.

Computers in Congress ✓

The Congress of the United States—the source of national policy touching the lives of more than 200 million Americans, as well as countless others abroad—the dispenser of more than $250 billion annually—and yet, almost untouched by the vast increase in data processing potential that has become an everyday reality in business, industry, and even the Executive Branch of the federal government during the past quarter century. Congress has appropriated billions for space and defense research that has wound up pushing computer development. In more direct terms, Congress has provided the Executive Branch of the federal government with more than 5,000 computers, many of which handle problems far more complex and closer to the cutting edge of the computer art than systems that could be of immeasurable assistance to the Congress in the assessment of data flowing through the substantive legislative process. Ultimately, Congress will fully exploit computers, or inevitably lose its effectiveness as the key element of democracy in the structure of our federal government. The question today is when and how we can bring computers to the Congress.

This two-hour session will outline plans and programs now under way to use computers in the Congress. The effort will be to reveal some of the difficult policy and management problems, as well as those of a technical nature, that confront the Congress in the modernization of legislative informational systems. Those attending the session will learn, firsthand, what is being done, as well as what is *not* being done, and ask questions of those directly responsible for systems implementation.

The budget and appropriations process, the reference output of the Congressional Research Service, a bill status system (in other words, a legislative management information system, although there is no single management structure in the Congress), the use of computers in the offices of individual Congressmen and Senators: these are the most obvious computer applications at some stage in planning or implementation.

The cluster of congressional systems covering these and other applications must be developed on a modular basis, but will undoubtedly merge into one system—the most important in the free world. "Computer System Number One of the Western World" is of obvious importance to everyone; but, the success of the implementation of this system is the responsibility of the computer community of the nation as a whole—not simply the congressional officials and staff members charged directly with this responsibility.

At a time of fiscal crisis, even a modest improvement in the budget and appropriations system could save billions. One per cent of $250 billion is $2.5 billion—and it is reasonable to expect computers to do much better than that, not to mention the benefits of better and more timely information to all aspects of the legislative process, in the establishment and extension of federal programs, the assessment of our tax laws, and in auditing the economy and efficiency of government operations.

Every facet of business and industry in America will be affected by the application of computers to the Congress—reason enough for anyone attending the conference to attend this session. And, of course, Congress will spend countless millions to maintain and constantly improve its computer capacity during the years to come. To those attending the conference that are in the computer business, there is also the opportunity to directly participate—there is money to be made. (Tues. p.m.)

—**Ernest C. Baynard**
Alexandria, Va.

Automated Project Management Systems

Project management systems, organized means of planning and controlling major efforts in corporate and governmental fields of endeavor, were introduced many years ago. The project was treated as a special function within the organization– an unusual effort, large in scope, and requiring something more than traditional management in order to succeed. Early, manual project management systems were difficult to administer and cumbersome because of the manpower requirements they generated. This difficulty led to the abandonment of many of these systems completely, or, more dangerously, to the utilization of the systems solely for the purposes of the planning function without subsequent managerial control emanating from the plan and progress monitoring data.

Abandonment of systems for project management and disillusion with the results of their use because of improper management and control in the post planning phase left a temporary void in the arsenal of management tools. However, with the application of computer technology to project management systems, the manpower requirements have diminished and the responsiveness of the systems to the information requirements of management has increased dramatically. A new era of automated project management systems has begun.

This session explores the automated project management system field as it changes today to react positively to the requirements of management. The use of graphics generated by the computer is one aspect featured in the session. The development of techniques for resource allocation and utilization monitoring is also to be discussed in some detail. Finally, one or more of the most advanced of these systems will be presented and discussed in depth. The session is not devoted to PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method) as they were developed in the 1950s. Rather, it goes far beyond these first automated systems in considering the state of the art some 17-20 years after their creation. (Tues. p.m.)

—**Ira Bitz**
Consultant
Chevy Chase, Md.

Technical Information Dissemination Networks

The science information community for a number of years has been concerned with the problem of the transfer of knowledge and information. Many recent developments both in terms of computer hardware, software, and communications, and information science, much of which has been supported by federal agencies such as the National Science Foundation, make the development of a national science information network both feasible and practical. The panel discussion will address the topic of networking from three directions. First, the notion of a national science information network will be discussed in relation to existing information processing centers established throughout the U.S. with NSF support. Secondly, the problems of interfacing such information systems will be addressed from a software perspective. And finally, a description of some new communications developments which could contribute to the effectiveness of such a network will be presented. Audience participation in the form of questions to the panel will be encouraged. (Tues. p.m.)

—**Andrew J. Kasarda**
Lehigh University
Bethlehem, Pa.

Academic Computing at the Junior/Community College

This is a topic that has been long neglected, swept under the rug, so to speak, in computing circles. The diversity of computer education programs at the two-year level has been a two-fold opportunity. It has meant freedom to experiment in some cases, and has resulted in chaos in others.

The program will start with a brief presentation by several of the speakers

(Continued on page 159)

(Conference at a Glance next page)

we don't have to tell you
what a
data tablet is...
when you read **our** specs
you'll see that, at last, there's one
that meets **your** specs!

THE CONFERENCE

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<tr><td colspan="2">Graphics</td></tr>
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<tr><td colspan="2">Medicine</td></tr>
<tr><td rowspan="9">THURSDAY</td><td colspan="2">In-House Training</td><td rowspan="7">Data Base Management</td></tr>
<tr><td></td><td>Communications</td></tr>
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<tr><td colspan="2">Automotive Industry</td></tr>
<tr><td colspan="2">Storage Systems</td></tr>
<tr><td colspan="2">Reliability and Social Implications</td></tr>
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<tr><td>Data Integrity</td><td>Privacy</td><td rowspan="2">Luncheon Address</td></tr>
<tr><td colspan="2">Resource Utilization</td></tr>
<tr><td rowspan="8">FRIDAY</td><td colspan="2">Terminals</td><td rowspan="8"></td></tr>
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<tr><td colspan="2">Military Systems</td></tr>
<tr><td colspan="2">Associative Processors</td></tr>
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AT A GLANCE

1:30-3:30 p.m.	3:45-5:45 p.m.	Evening
Communications	Software	
Linguistics	Linguistics	
Voice Answerback		
Conversion	Terminals	
Point-of-Sale	Retail	
Software	Statistics	
1980's	Simulation	
Global Use	Global Technology	
Data Base Management		
Government	Garment Industry	
Performance Measurement		
Manufacturing	Accounting	
College Training	College Training	
Information Dissemination	Data Banks	
Information Dissemination	Small Systems	
Information Dissemination	Project Management	
The Arts		The Arts
Economic Future	Social Implications	Reception
Urban Services		
The Future		
Software	Software	
Graphics		Graphics
Automotive Industry	Advertising	
Security	Communications	
Mathematics	Venture Capital	
The Law	International Relations	
In-House Training		
Networks		
Social Implications		
Automotive Industry	Cryptology	
	Metrication	
	DP Management	
Data Base Management		Data Base Management
Privacy/Security		Reception
Pattern Recognition	Pattern Recognition	

■ Methods & Applications Program

■ Science & Technology Program

■ Third Program

——— Exhibits Open

•••••••••• Circuit Art Exhibit Open

------- Science Film Theater

••••••••••• High School Computer Science Fair

who will explain the structure of data processing at their college. A fairly wide diversity of programs will be presented both as to academic content and to geographical location.

Following the brief explanation of several of the key programs, there will be a discussion among the panelists about several central topics concerning curriculum structure, course content, the problems of training for immediate job entry, training for transfer, and interrelationship with four-year colleges. Participants at this session will be invited not only to ask questions of the panelists, but also to take part in the discussion. (Tues. p.m.)

—Harold Joseph Highland
State Technical College
Farmingdale, N.Y.

The Growing Impact of the Mini/System

As technology decreases the size and cost of circuits, smaller systems are becoming more attractive because of their growing functional capability and decreasing costs. As more people begin to use the mini, they are learning new techniques that will help exploit its advantages. This session is designed to help us better understand the minicomputer potential by looking at various facets of the work that is taking place in industry and at universities.

Five papers will be presented at this session:

"Data Integrity and Small Real-Time Computer Systems" discusses system integrity and its importance in real-time systems. Examples used to explain the main points of the paper are based on IBM's System/7 work.

"Operating System Design Considerations for Microprogrammed Mini Computer Satellite Systems" discusses the investigations Brown Univ. undertook to arrive at the best architecture for small systems in a satellite environment.

"Computer Architecture and Instruction Set Design" discusses the design and implementation of a machine architecture from two viewpoints: first is the design of an optimal architecture for the application; second are the design considerations necessary because of hardware constraints.

"A New Minicomputer Multiprocessor for the ARPA Network" by authors from Bolt Beranek and Newman, Inc., relates their design based on a communication application that is very well defined. The knowledge of their applications allows them to define very specific tasks within the process and utilizes tasking in their design. Finally, "The Design and Implementation of a Small Scale Stack Processor System" discusses the rationale for using a stack processor, and the architectural considerations necessary for a small system to support higher level languages. (Tues. p.m.)

—Douglas B. McKay
IBM Corp.
Atlanta, Ga.

Wednesday

Computing and the Law: Interactions

Unlike a number of other sessions at the NCC, this session will not be devoted to presentations of legal theories regarding matters of interest to students of jurisprudence. This is a session for computer people, not lawyers, although of course, the legal eagles are welcome to attend.

The problems that will be covered are those of the technology of data processing, and how it has been used (or abused) in support of legal principles. We are not concerned with arguing that the law is wrong; we are concerned with indicating the measures within the technology that may be applied to uphold the legal principles involved.

Of course, to arrive at this position it is necessary to look at the law in a historical context recognizing that the law has traditionally lagged far behind social progress in the United States. Some have said that the law has not yet caught up with the industrial revolution of the last century and therefore will not catch up with the computer revolution in our lifetime. This may well be true, but we as computer professionals have to live with things as they are today; we cannot afford the luxury of waiting for the evolution of appropriate legal theories.

The plan for this session calls for the presentation of the current legal thinking on a number of selected topics. If the lawyers can clearly state what has to be done in a legal sense, then the computer people can at least suggest what is available (and what ought to be available) within the technology to uphold the principle involved. We are concerned with applying those technological features which would be employed by an "average edp professional" behaving "in a prudent manner"; let us exercise "reasonable caution" rather than military-style security and see where that takes us.

For those interested in this problem, a key paper has been written by Mr. L. Stich and Ms. Jean Sammet (IBM Corp.) entitled "Legal Issues Affecting Software Technology." A careful reading of this paper is recommended. It is hoped that the start made by Stich and Sammet can be extended in several directions by this session. (Wed. p.m.).

—P. H. Dorn
The Equitable Life Assurance
Society of the U.S.
New York, N.Y.

A Day With Graphics

"A Day With Graphics" will feature invited and contributed papers on current applications of computer graphics, the graphics film festival, and a special evening session on three-dimensional drawings with Dr. Ivan Sutherland. These sessions will report on a few of the recent achievements and use of computer graphics in such fields as art, engineering, medicine, aerospace, education, architecture, television, and movies.

NCC
The Sessions

Computer graphics, through plotters, digitizers, and crt's, is a natural medium for providing input to and displaying output from computing. Most scientific and many business computer applications input, compute, and output pictorial information. Lists of data will continue to be used for accuracy and storage, but graphic representation is the growing medium for visualization and human interaction.

The cost of graphics has limited the use of graphics. Extensive hardware product development, more efficient software and system support, and appropriate applications have caused the current growth of the use of graphics. An impressive display of graphics products will be exhibited by vendors at the NCC exposition.

The technical sessions begin with a panel discussion titled "Interactive Computing—A Mind Expander," sponsored by the Society for Information Display and chaired by Carl Machover, Information Displays, Inc.

The second morning session, chaired by Jackie Potts, will include papers on graphics applications. Papers cover computer-generated color-sound movies, graphics computer-aided design in aerospace, automatic transduction of drawings into data bases, and graphics in medicine and biology.

The first afternoon session considers graphics in art, education, architecture, and electronics. In his paper "Graphics and Art," Prof. Ron Resch, Univ. of Utah, describes amazing results using graphics for the topological design of sculptural and architectural systems. An example of Resch's work is shown in the following picture.

The other papers cover an educational system based on the LOGO language, software design considerations in interactive graphics systems, recent developments in sketch recognition, and graphics in electronic circuit analysis.

The second afternoon session will be a modern "Graphics Film Festival," chaired by Jackie Potts. Animated and real-time movies from graphics are artistic, entertaining, informative, and educational. Movies are being used to simulate systems, show the results of dynamic analysis, teach, and create tv cartoons and commercials.

The evening session considers "Graphics in 3D: Sorting and the Hidden Surface Problem," chaired by Rod Allen. Dr. Ivan Sutherland of Evans and Sutherland Computer Corp. in Salt Lake City will present his new paper surveying the hidden surface algorithms. A panel tutorial on 3D graphics led by Dr. Sutherland will include Robert Sproull of Stanford Univ., Robert Schumacker of Evans and Sutherland, and others. (Wed. all day.)

—Rodney H. Allen
Flow Research, Inc.
Kent, Wash.

—Jackie Potts
Naval Ship Research
& Development Center
Bethesda, Md.

Simulation of International Relations

Simulations of international relations have taken various forms in their evolution. Some designers have favored all-machine simulations, while others lean toward varying degrees of man-machine interactions. Still others have emphasized data analysis and manipulation. Some simulations have been used for theoretical purposes, while others were designed for operational use only. This session will try to identify successes and the lack of success of past attempts to simulate various social science problems and relate these factors to international relations.

Are there unsolvable problems? Have our approaches been wrong, or is it possible that the problems are solvable, but we lack sufficient data for analysis? Perhaps the international relations discipline lacks a Guru, that other sciences appear to have, to direct the total effort. In any

event, an attempt will be made to identify various obstacles to progress and ways to solve them.

Additionally, consideration will be given to the idea of forming a confab of doers who are interested in the development of IR simulations and who could develop a plan for an approach to future efforts taking advantage of lessons learned in the past.

The organizer of the session, George L. Draper of the JCS Studies, Analysis, and Gaming Agency, with panelists Dr. Jeffrey Milstein of Yale presently on a fellowship to Dept. of State, Prof. Richard Van Atta, American Univ., and LTC William O'Leksy, an Industrial College of the Armed Forces Research Fellow, plan a probing discussion of this very important subject. This session could well lead to a methodology for a concentration of effort and the identification and definition of a network of on-going research and application. The panelists have significant experience to probe and attempt to identify solutions to this problem. (Wed. p.m.)

—George L. Draper
The Joint Chiefs of Staff
Washington, D.C.

Views of the Future

This session represents a "first of a kind" for a major computer conference. It is devoted entirely to formal technological forecasting and assessment efforts dealing with the computer industry. Technological forecasting as an autonomous discipline, with its own set of methodologies and techniques, is only about five years old. Of course, similar efforts have taken place over the years within the long-range planning staffs of most technology-oriented companies and organizations. Furthermore, the intuitive judgment of recognized experts is a technological forecasting technique that has always been with us and has been well represented at these meetings by various panel presentations.

What appears to be really new is a growing recognition of the need to examine potential futures systematically in order to assess a wide variety of concerns and potential consequences of technological development. The days of looking only for profit-related effects seem to be passing into history. Because the scope of concern has significantly widened, with an accompanying increase in the complexity of the required analyses, new approaches to forecasting have been sought.

Several of these techniques are represented in the papers of this session—Delphi, scenario construction, model building, correlation analyses, and trend extrapolation. To a large extent the contributions are of interest not only for what they have to say on the future of computers and associated technology, but also for the manner in which they arrive at their observations.

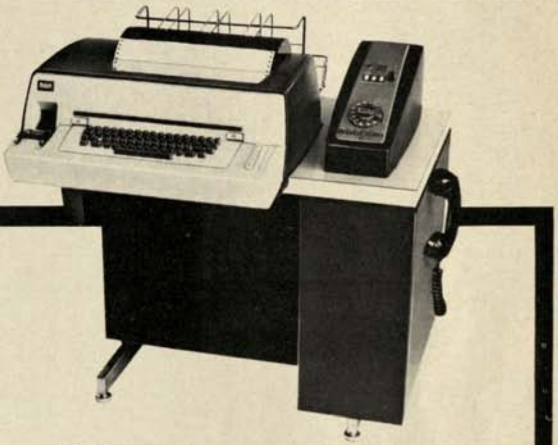
The number of technological forecasting studies dealing with computers has increased considerably in recent years. Some of these are informative primarily in telling us how not to do forecasting. We have, in fact, reached the point where some of these are old enough so that a portion of their forecasts can be evaluated for their accuracy of prediction. It appears from observing these efforts that the considerations which give the forecaster the most difficulty are not the projections of the technology itself, but rather its potential applications and interactions with the rest of society. There is a primary flaw underlying much of this earlier work; namely, an implicit tendency to view the computer field primarily as a driving force in society, while ignoring the impact of social, political, and economic forces on the computer field itself. (Wed. p.m.)

—Murray Turoff
Office of Emergency Preparedness
Washington, D.C.

Current Status and Future of Computer Software Products

Software products today are a worldwide business which is growing rapidly. By 1976, it is estimated that annual gross revenues in the U.S. alone will be well over $1 billion. This panel session will examine computer software products from both a business and marketing viewpoint.

Effectively marketing software products requires many major commitments on the part of the seller. Depending on the particular type of product, complete development could take up to 18 months or more, with profitability achieved after



three or four years on the market. Increased competition and fluctuating user requirements require that software products be continuously modified and enhanced. Changing hardware environments may obsolete a particular software product at any given time. The total investment required, therefore, is substantial, rising as high as $1 million or more in many cases. The risks involved are also significant, but so is the market potential. For example, several products to date have individually grossed well over $10 million and more than 50 products have exceeded the $1 million mark.

The number and size of software markets are rapidly expanding both domestically and internationally. These markets can easily be divided into 30-50 major submarkets and perhaps as many as 100-150 minor submarkets. Examples of such industry, or cross-industry product submarkets, include: accounting, medical, banking, insurance, brokerage, financial planning, compiler development, data management, programming aids, sorting, simulators, measurement monitors, linear programming, scheduling, information retrieval, communication monitoring, operating systems, and so on. Each of these submarkets can offer potential revenues in the millions of dollars, thereby encouraging many new firms to form over the coming years. Perhaps the evolving software products industry will eventually be likened to the appliance industry, which also has major and minor submarkets (e.g., refrigerators, stoves, radios, stereos, etc.) and which no one company dominates.

The participating panelists include representatives from a software company, a hardware company, a multinational user, and a software products marketing firm. They will review the current status of the software products industry from their individual perspectives and experiences and will present their personal forecasts of major industry trends. In addition, some of the problems facing both the buyer and seller of software products will be discussed, with audience participation encouraged. (Wed. p.m.)

—**Martin A. Goetz**
Applied Data Research
Princeton, N.J.

Satellite Packet Communications

The new method of using a single satellite circuit to interconnect multiple ground stations is likely to provide significant cost savings over any other method of long-haul data communications. Since their inception, satellite circuits have always been designed on a dedicated point-to-point basis, even though the capability for broadcast mode is naturally present. This procedure usually results in lower than necessary utilization of each satellite circuit and the corresponding need for many circuits, each with low utilization in order to handle many users.

However, with a single satellite channel operated in a broadcast mode, several ground stations can dynamically share a single satellite channel by transmitting at different times but on the same frequency, and by receiving on the same frequency. The transmitted information is specifically addressed to one or more of the ground stations using packet switching.

The three papers in this session will address theoretical and practical treatment of broadcast satellite communications. One paper by Dr. Roberts of ARPA discusses a specific interleaved satellite reservation system; the other papers by Prof. Leonard Kleinrock of UCLA and Prof. Norman Abramson of the Univ. of Hawaii discuss theoretically the subjects of throughput, delay, and excess capacity. There will be a brief panel discussion involving Dr. Eugene R. Cacciamani, Jr., COMSAT Labs, and Dave Walden of Bolt Beranek & Newman. (Wed. p.m.)

—**Lawrence G. Roberts**
ARPA
Arlington, Va.

Urban Services

This session will present advanced and exciting applications of computers to real urban problems—applications with a track record of accomplishment and impact. A city mayor and five professsionals most closely involved all describe systems now engaged in saving big-city housing, managing, understanding and personalizing welfare services, deploying firemen and police, and controlling traffic.

As is traditional, the speakers will describe some of the analyses and computer techniques that make the systems work. Perhaps more important, they will emphasize the human and organizational side: what it takes to make a system function in an urban political and social environment; what impact analysis and computers have had (and will have) on city government; what it all means for the citizens; and where we go from here. These details and insights are transferable to other cities; indeed some of the software is now or will soon be available at no or nominal cost.

In municipal government, many computer systems—including many MIS—are designed mainly to unburden, to relieve paperwork and heavy demands for routine processing. In contrast, the applications this session presents are designed for policy mediation, to influence directly the ways governments prescribe and deliver their services. (Wed. p.m.)

—**Edward H. Blum**
The New York City
Rand Institute
New York, N.Y.

Thursday

In-house Training–Its Management and Development

All project managers and/or systems analysts who design, develop, and implement systems which require new procedures create a "training problem." These people either work with or are accountable themselves for designing, developing, and/or implementing the training around the new procedures.

Examples:

1. A new Demand/Deposit Accounting system may require teller training around both manual and, in the case of terminals, machine procedures. User documentation (manuals) only may not be the most efficient and effective means of information dissemination.

2. Release by a vendor of a new/revised operating system or language, etc., creates a training problem. Again, manuals may need supplementary programs to efficiently and effectively train the user of these products.

In either case, the edp function usually has some responsibility to see that this training occurs and that it is cost effective. The number and sophistication of edp in-house training units is growing and is projected to continue this growth in the '70s. These units are now faced with more than entry-level programmer, systems training—such things as: career paths, job rotation, management development, performance standards. Personnel in these units need at least three areas of expertise: data processing, training and manpower development, and the business of the company—banking, retailing, manufacturing, etc.

To date no professional organization offers a platform where problems related to all three can be dealt with. It seems timely and appropriate NCC can be a leader in meeting the need of an ever-growing fringe of the edp world.

This session will identify and discuss solutions and techniques of implementing them which address the current and future problems around developing edp personnel in both technical and managerial concerns within a data processing user organization. That is: What is the scope and function of the in-house edp education unit? What are some of their current concerns and how might these concerns be dealt with? What are the advantages and disadvantages of various presentation techniques?

The session will be composed of three panels and a workshop; it should be of specific interest to: management of training directors; edp training directors; designers, developers and implementors of edp training programs (e.g. vendors selling these programs for in-house use, project people responsible for application systems user training, and in in-house training staff). (Thurs. all day.)

—**Dorothy Tucker**
Bankers Trust Co.
New York, N.Y.

Storage Systems

Memory technology has made great progress in recent years. Its cost is reduced, performance is increased, and applications widened. One excellent example is the virtual memory aspects to be discussed in this session. Four papers are on virtual storage.

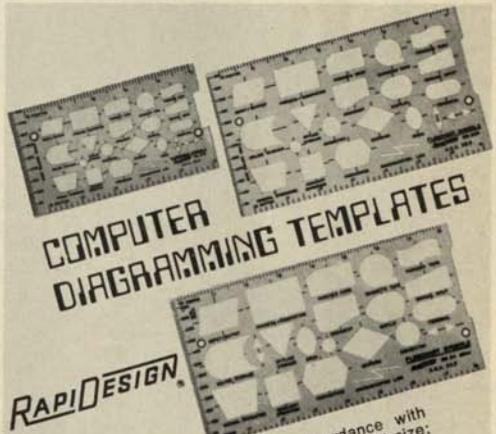
T. F. Wheeler discusses an evolutional growth system—IBM OS/VS1. It addresses the new design aspects of the virtual system and their relevance to the further enhancement of new application design. Dr. Alan Scherr describes the design of IBM OS/VS2 release 2. This paper is to give some insight into the design, rather than cover individual features of the release. W. A. Schwomeyer's paper deals with the problem of verification of a virtual storage architecture on a microprogrammed computer. The fourth paper, by W. C. Hohn and P. D. Jones, discusses the Control Data STAR-100 paging station. They show how the problem in the virtual memory computer, requiring the central processor time to manage page transfers between central memory and paging devices, is solved in the CDC STAR-100 computer.

The last two papers are related to the logic function of magnetic bubble memory. Drs. Chang, Chen, and Tung talk about the realization of symmetric switching functions using magnetic bubble technology, while Eiji Yodakawa of Japan describes a mathematical model of magnetic bubble logic. (Thurs. a.m.)

—**Ben M. Y. Hsiao**
IBM Corp.
Poughkeepsie, N.Y.

Computers Are for People

Computers are supposed to be for people, but it is often hard to tell that they are. The computer state of the art has now reached a point where it is both feasible and mandatory that computers become



subservient and palatable to human users. But real people are still scared away by the psychological and physical barriers we build. We must learn more about our successes and failures in helping ordinary mortals use computers and we must design better hardware/software interfaces.

The session brings together computer scientists and other people to discuss these issues. H. Sackman will review several documented experiences where executives, scientists, students, and ghetto dwellers have attempted to use allegedly easy computer systems. A. M. Bork will describe his experience in using computers in undergraduate physics curricula. B. D. Waxman will discuss computer-based and other technological developments aimed at reducing the cost of health care, improving its quality, and increasing its accessibility. L. I. Press cautions that it is too early to build a prototype community information utility; Sackman, a proponent of building such a prototype utility, will respond.

G. F. Groner will outline user requirements for display terminals and will describe current capabilities. A. I. Wasserman will describe techniques for designing programs that anticipate any possible user actions and that minimize the changes of program and system failure. F. B. Thompson will review how specialized systems can facilitate work in particular areas. T. H. Nelson will propose a conceptual framework for man-machine everything; his multimedia presentation will be one of the highlights of the conference. The session will conclude with a panel discussion among the speakers. (Thurs. p.m.)

—G. F. Groner
The Rand Corp.
Santa Monica, Calif.

Cryptology in the Age of Automation

IBM, uif dpnqvufs jo Bsuivs D. Dmbslf't "3112: B Tqbdf Pezttfz," jt bo fybnqmf pg b Dbftbs diqifs.

Those having troubled to solve the cryptic opening may well be interested in this session. Non-solvers might benefit by reexamining their judgment of what they may regard, perhaps, as an art useless or irrelevant to their professional activities.

The current increase both in the size and the scope of computerized data banks is apparent to all in the computer field. Equally evident is the sensitivity of much of the stored data: medical histories, criminal records, credit ratings, bank balances, and so on.

Inescapably, the "dark art" of cryptography will move from the "black chambers" of government into the commercial computer-center environment. Sponsored by the American Cryptogram Assn., this session will probe, to the extent security premits, the automation of cryptotechnology.

Aspects to be discussed include the historical background; mathematical crypto-algorithms; programming techniques; and hardware design—sort of a smorgasbord for the *aficionado* with, hopefully, at least one entrée of appeal to the specialist.

The cryptology session will feature two unusual events (one, in fact, a "non-event"). The first is a demonstration by the chairman, Henry D. Ephron, the Mycenaean scholar, of the *constructive* uses of cryptanalysis. Using methods not in the "tool kit" of the average classical scholar, Ephron deciphered two ancient inscriptions known as the disk of Phaistos and the tablets of Enkomi.

The "non-event" is the absence of the usual procedure of accepting questions from the audience. The dark art has not fully emerged from the black chamber, and while the speakers have mutual trust in one another, they have a few reservations about some in the audience . . . (Thurs. p.m.)

—G. E. Mellen
Univac
St. Paul, Minn.

Data Integrity

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As we enter the era of vast data bases and massive storage problems, we are becoming more concerned with the integrity of our data. The "garbage in, garbage out" truism is more true today than ever before. However, the problem of maintaining data integrity is a multidimensional problem. We are not only concerned with having the correct data in terms of content, but we should be concerned with our ability to enter, process, and maintain this integrity over time. The purpose and intent of this session will be to provide the attendees with an overview of this multidimensional problem and, at the same time, offer suggestions and possible solutions.

Four papers, each presenting a different point of view, will be presented. At the end of the session, time will be made available for audience participation and the speakers will serve as a panel for answering questions from the floor. (Thurs. p.m.)

—Milt Bryce
M. Bryce & Associates
Cincinnati, Ohio

Network Computers: Economic Considerations

Until recently little justification was needed for the construction and maintenance of network computers. Each project was viewed as a novel and noble investigation into the unknown. During such investigations, inefficiencies could be tolerated and practicality certainly was not an immediate goal. These experiments have succeeded in advacing technology, but they have also succeeded in opening a veritable Pandora's box of problems, both economic and political in nature, which appear to be much more difficult to solve than the remaining technological problems.

We propose to concern ourselves with some of the myriad of problems which are economic in nature. Our primary motivation for this choice is that computers tend to be very expensive guinea pigs and unless techniques can be found to solve these problems, the political problems may become irrelevant. The continued existence of network computers is predicated upon the ability of designers and managers to demonstrate their economic viability.

In this session, we will concern ourselves with defining considerations which must be taken into account in order for network computers to become viable commodities in the computer market place. Several software systems designed to aid resource sharing or study operating efficiency will be discussed. The use of simulation as a tool for the evaluation of network efficiency will be analyzed and a proposal for a corporate computer network will be presented. (Thurs. p.m.)

—William J. Barr
Bell Laboratories
Piscataway, N.J.

Nontechnical Causes of Failure of EDP/MIS Groups

In the last several years there has been a gradual, and then, more recently, a rapidly accelerating change in the nature of the backgrounds sought by major corporations for their heads of data processing and information services functions.

Where previously substantial emphasis had been placed on technical capabilities, these have become a decidedly secondary consideration. Major corporations today —that is, major users of data processing —are primarily concerned with the managerial, rather than the technical skills, although, obviously, some technical capability is always involved.

This has come about because, in evaluating the reasons for failures of edp/MIS groups, it has been consistently found that failures of edp groups to produce that which is expected of them are related to managerial, rather than technical, incompetencies.

This subject will be explored further by several of the outstanding and successful data processing executives in the country. (Thurs. p.m.)

—Herbert Halbrecht
Halbrecht Associates Inc.
Greenwich, Conn.

Automotive Industry

It is axiomatic that the importance of computers in and to the automotive industry is growing rapidly. Both large and minicomputers have been used for some time in automotive manufacturing, automotive design, the distribution of parts, keeping of customer records, etc. These established applications continue to be innovative and rapid growth areas, and will be discussed in a series of invited papers from selected automotive industry representatives. This year two areas which have the potential for explosive growth will be discussed, each in their own session: off-vehicle vehicular diagnostics, and on-board vehicular minis and cpu's. The conference will feature in-depth looks at both problems.

There are to be four automotive sessions. Organized by Prof. D. M. Grimes, Univ. of Michigan, they will feature as luncheon speaker Thursday, June 7, Mr. E. N. Cole, president of General Motors Corp., who will connect the computer and automotive industries in a talk entitled "Common Language and Common Future."

The first session, "Computers in Automotive Design and Manufacturing," will be chaired by H. J. Kuschnerus, Ford Motor Co. The session will give an overview of the spectrum of computer usage in the design and manufacturing processes. Things have really changed in the last two years: the minicomputers have moved into the auto plants en masse and have made possible an entirely new technology. (Wed. a.m.)

The session on "Off-Vehicle Diagnostics" will give insight into the use of computers to diagnose malfunction, tune-up, etc. An attempt will be made to point out any new and related work announced up to conference time. A panel will then discuss what value off-vehicle diagnostics have for the consumer. (Wed. p.m.)

This looks like the year that computers commit bigamy by getting married to automobiles, inasmuch as they wed communications a few years ago. In "On-Board Computers for Automobiles," each participant will discuss a portion of the spectrum of computer usage that exists or is forecast for integrated applications. Control applications will be highlighted. (Thurs. a.m.)

The fourth session—"Automobiles, Computers, and the Consumer"—covers communication networks vital to the timely distribution of service parts and to the rapid retrieval of stolen vehicles. (Thurs. p.m.)

—Dale M. Grimes
Univ. of Michigan
Ann Arbor, Mich.

Friday

What is Different About Tactical Military Systems

Tactical military computers are general-purpose programmable digital computers that range in size from the small minicomputer up to that of very large commercial equivalents. They can operate all the standard computer peripherals and are just as capable of computing a payroll, maintaining a large inventory, or solving complex differential equations as are their commercial or scientific equivalents.

In fact, the tactical military computer industry is a large proportion of the total national computer industry with several dozen manufacturers and thousands and thousands of programmers and analysts.

Strange to relate, this large part of the computer world has been almost completely overlooked by most people in the commercial and scientific world. Departments of computer science in our universities do not give courses for designers or users of tactical military computers. Manufacturers do not display their hardware at this or other computer conferences. Few programmers and analysts give papers on tactical computer software.

This is unfortunate, for the commercial man and the tactical computer man can learn much from each other. The purpose of this program session is to bridge this gap by presenting somewhat of a tutorial on the basic differences and similarities between state-of-the-art tactical systems and the classical commercial or scientific systems.

The opening paper will highlight some of the representative mission requirements of today's large-scale tactical command-and-control systems. It will also discuss the scheduling and functional properties of the computer programs which support the mission. The second paper will take up the hardware requirements for a tactical system computer especially in the areas of availability and reliability. The functional characteristics of the computer and its interfaces with various peripheral equipments is also presented. The third paper will present a historical overview of tactical compiler systems and the logical differences in their functions. It describes the language requirements of a tactical system specifically in the areas of data base design, bit manipulation, and mathematical operations. The final paper describes the detailed scheduling and critical timing requirements of tactical computer program tasks. It also presents the design of a typical tactical executive program's logic, which monitors and controls a dynamic environment sensitive scheduling queue.

These four papers show what is different about tactical computer systems and why these differences are necessary. (Fri. a.m.)

—James A. Ward
Naval Ordnance Systems Command
Washington, D.C.

Associative Processors

The power of the associative memory lies in the highly parallel manner in which it operates. Data is stored in fixed-length words as in conventional sequential processors, but is retrieved by content rather than by hardware storage address. Content addressing can take place by field within the storage word, so, in effect, each word represents an n-tuple or cluster of data and the fields within each word are the elements.

One of the ways in which accessing can take place is in a word-parallel, bit-serial manner in which all words in memory are read and simultaneously compared to the search criteria. This allows the possibility of retrieving all words in which a specified field satisfies a specified search criterion. These search criteria include equality, inequality, maximum, minimum, greater than, greater than or equal to, less than, less than or equal to, between limits, next higher, and next lower. Further, complex queries can be formed by logically combining the above criteria. Boolean connectives include AND, inclusive OR, exclusive OR, and complement.

In addition to the capabilities already mentioned, associative memories can be constructed to have the ability of performing arithmetic operations such as add, subtract, multiply, and divide simultaneously on a multiplicity of stored data words. Devices of this type are generally called associative processors.

These devices have been discussed in the literature for the past 15 years and have been receiving increased attention in the past two or three years. However, most of the literature is devoted to the architectural aspects of the devices with little emphasis on areas of application. In this session the emphasis will be on applications. (Fri. a.m.)

—P. Bruce Berra
Syracuse University
Syracuse, N.Y.

Economics and Remote Terminals

The speakers will approach the subject from the viewpoint of the consultant, manufacturer, and end user. Market study results, as well as actual examples, will be used to emphasize cost-effectiveness in remote terminal systems.

Data communication systems planners are faced with new technological advances every day. In fact, it is almost impossible to keep up with just the language ("bits, bauds, buffers, Bisync, etc.") due to the rapid advancements in this field. Before looking at the terminal details, system planners would be wise to first consider the range of management considerations and their analysis. Gilbert Hoxie of Booz, Allen and Hamilton will recommend a planning cycle answering nine key questions which can be followed for implementing a cost-effective communications system.

Cliff Levethal of ITT Data Equipment Services Div. will speak about the market research and planning that was used in planning and developing their new series of low-cost display terminals. The market studies and product planning that went into preparation of specifications for these new terminal devices should be interesting topics for systems people considering implementation of display systems.

NCC NYC

Many companies want to export the data entry function from the computer center to their remote office locations to reduce the delivery time, eliminate duplicate conversion of data at the center, and reduce the possibility of error rates. Interactive terminal systems are the expensive solution. Low-cost terminals with high-speed buffering capability could be an economic alternate solution. Today many users are employing small batch systems, and advances in terminal buffering will increase their number. Bard O'Brien from Western Union Data Services will speak about the trends toward centralization of computer power using remote batch terminals.

Robert Hulse, a user from Hewlett Packard Corp., claims that the punched card is not dead. His paper describes a method for economically combining the data processing requirements of many decentralized "remote" company operations with the capabilities of the central computer facilities. The paper shows the use of an economical remote mark/punch buffered card reader as a data collection device capable of transmitting data at various speeds and communicating via ordinary telephone lines with a distant central data processing facility. Modes of usage are described showing economical data transmitting, data storage, and data processing costs and other attendant benefits such as improved central operations scheduling. (Fri. a.m.)

—**Dan Printz**
Teletype Corp.
Skokie, Ill.

Computer-based Integrated Design Systems

The design of complex systems such as ships or aircraft traditionally involves a large number of engineers from several different disciplines working on different parts of the design, both simultaneously and sequentially. To achieve proper coordination and cooperation among all of the individual efforts, covering thousands of technical and managerial details, is an almost impossible task. Central to this task is the communication and modification of the data that constitute the description of the object being designed at many levels of detail and from many points of view. The computer and associated software appears as a possible means to bring under control these difficult problems.

The U.S. Navy spends on the order of $2 billion annually for ship acquisition. Modernizing ship design and construction has been a primary and continuing interest of the Navy, who recognized very early the potential of computers for both engineering and data processing applications.

In the mid-1960s naval architects, engineers, mathematicians, computer scientists, and administrators at the Naval Ship Research and Development Center and the Naval Ship Engineering Center, conceived the idea of creating an integrated system for computer-aided ship design and construction. For about a decade, ship design engineers, naval architects, and other subject matter specialists had designed and implemented computer programs for various levels of complexity to be used to perform specific tasks; i.e., engineering computations. The benefits of these computer applications to Navy projects were impressive, but the labor involved for anyone but the originator to use the programs, or to use output from one routine as input for another, sharing information among related tasks was usually considerable. Why couldn't the same computer that was proving so useful in specific engineering computations also serve as a basis for integrating the separate tasks into one information-sharing cooperative, integrated system? This would reduce the vast army of designers, documenters and coordinators to the minimum number needed to carry out the specific tasks in each discipline.

There had been other attempts of this kind, and the Navy's managers felt that the potential payoff in the ship-production business could be large enough to warrant a comparable effort. They believed that if a "digital model" of an entire ship were created, step-by-step, by many designers working cooperatively, sharing data files and having their interface problems handled automatically—the time, manpower, and material saved would eventually amount to 7½% or more of the shipbuilding dollar—as much as $150 million annually.

Today in 1973, we are nearing the end of the first major phase of this program (the whole was originally planned to be completed in 20 years, but it now appears feasible in 12), the production of an initial experimental Integrated Ship Design System (ISDS). ISDS is eventually expected to permit performing preliminary design of conventional ships in a time of several weeks rather than the normal six months. The session at the NCC will present descriptions, applications, and discussions of the underlying system structure and support software that makes integrated design systems possible and makes knowledge of computer programming or data management techniques unnecessary for the ultimate users—the ship designers. The software that is described has the acronym COMRADE, for COMputeR-Aided Design Environment.

COMRADE concepts and techniques are applicable to other complex engineering design tasks or, for that matter, to any complex task involving the cooperative effort of large numbers of creative people, operating on a large shared data base.

The integrated design and construction approach impacts on economical use of tax dollars, on reduction of manpower requirements for design and construction, and on the competitive status of shipbuilding and other U.S. industries in the world market. This session should therefore be of interest to a broad spectrum of NCC attendees. (Fri. a.m.)

—Herbert M. Ernst
Naval Ship Research
and Development Center
Bethesda, Md.

Virtual Machines

This session will explore the principles, practice, and performance of virtual machines in both existing and proposed systems. While the emphasis in the formal papers will be on virtual machine architectural principles and the evolution of *virtualizable architectures*, the panelists will discuss some of the unique application and performance aspects of virtual machines. The participants will also review the material that was presented at an ACM-sponsored, limited-attendance workshop on virtual computer systems held at Harvard Univ. in March.

The development of interest in virtual computer systems can be traced to a number of causes. First, there has been a gradual understanding by the technical community of certain limitations inherent in conventional time-shared multiprogramming operating systems. While these systems have proved valuable and quite flexible for most ordinary programming activities, they have been totally inadequate for systems programming tasks. As a result, virtual machine systems, most notably IBM's CP-67, have been developed to extend the benefits of modern operating environments to system programmers. This has greatly expedited operating system debugging and development and has also improved the portability of system software. Because of the complexity of evolving systems, this is destined to be an even more significant benefit in the future.

Second, a number of independent researchers have begun to propose architectures that are designed to directly support virtual machines, i.e.; *virtualizable architectures*. These architectures trace their origins to an accumulated body of experience with earlier virtual machines, plus a set of principles taken from other areas of operating systems analysis. These architectures also depend upon a number of technical developments, such as the availability of low-cost associative memories and very large control stores, which now make such innovative proposals feasible.

A third reason for the widespread current interest in virtual machines stems from its proposed use in attacking some important new problems and applications such as improved software reliability and system privacy/security. Finally, IBM has recently announced VM/370 as a fully supported software product on System/370. With this action, IBM has officially endorsed the virtual machine concept and transformed what had been regarded as an academic curiosity into a major commercial product.

It is hoped that this session, organized in response to the growing awareness of the importance of virtual machines, will provide a deeper understanding of the key issues and stimulate further theoretical and practical efforts with virtual machines. (Fri. a.m.)

—Robert P. Goldberg
Harvard Univ.
Cambridge, Mass.

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News in Perspective

Meet George Glaser and Robert W. Rector, the new top men at AFIPS, page 87. They take over the supersociety's affairs this summer with a mandate to make it a strong voice for the computer community. But with considerable wrangling over the way money from shows goes out to societies, some say they're walking into a rattlesnake pit...

Computers may have played a minimum role in the Equity Funding Scandal, but EDP auditors are being told to "jam it down your management's throats," anyway, page 92. How they need clout with their management and how they can get it was the theme of a national conference of auditors last month...

Minutes of IBM's top management committee meetings tell how the powers in Armonk viewed competitors, standards, liquor and transfers in the late '60s and early '70s. Here's a look at some of the documents introduced in the IBM-Telex case in Tulsa, page 93...

Memorex has installed some 280 computer systems. Although customers are happy with the product and the support, they worry whether the cash-hungry company will stay with the product, page 96...

NCR continues to reassure customers it's in the computer business to stay. "We have become a computer systems company," said the NCR president at a users meeting in San Diego ... and the 400 users bought what he said with a standing ovation, page 96.

Conferences

The National Computer Conference in NYC: Security, Terminals and Turnaway Crowds

"We can't say if we have a successful conference until we read what the trade press has to say about it," said Harvey L. Garner, general chairman of the first National Computer Conference held June 4-8 in hot and humid New York City. At a press briefing midway during the conference, he added: "We've added many user interest sessions and in so doing have run the risk of not interesting the traditional Joint Computer Conference attendees. We'll have to wait and see."

In sheer numbers, the conference was an advertising coup. The attendance of 32,643 was on target with what the sponsoring American Federation of Information Processing Societies (AFIPS) had predicted. The exposition was a roaring success. Before it had even ended, 52 exhibitors already had signed up for 55,000 sq. ft. of exhibit space in next year's conference in Chicago, May 6-10. That was only 10,000 feet less than all 220 exhibitors had purchased for the New York affair.

In contrast with the total attendance, the conference, with a turnout of 4,836 at the New York Hilton, appeared as mere window dressing for the commercial exhibit at New York's Coliseum eight city blocks away. Preliminary figures showed the conference drew only 400 more persons than the turnout at the final semi-annual event last fall in Anaheim, Calif.

It was a massive program—the first to be evenly split into topics for the technologist (Science and Technology) and for the user (Methods and Applications). At times as many as nine formal sessions ran at the same time. There were near-empty rooms and there were turnaway crowds. More than 300 showed up for a session on Point of Sale Systems in a room for 128. "It was the first time I can remember that people asked for refunds because they couldn't get in," said Dr. Bruce Gilchrist, the AFIPS executive director.

Those who took head counts noted that the technical sessions had the largest audiences. A program on Intelligent Terminals on the opening day drew more than 300 persons. The 50 or 60 who turned up on the very last day for a session on Associative Processors were delighted with the pertinent questions the presentation drew from hard-core technologists who had somehow held on despite five full days of mental pounding, high humidity and inadequate air conditioning.

The Bell debate

Although they generally played to smaller crowds, the applications sessions were well received. Sessions on broader topics met with mixed interest. As expected, those dealing with security were winners; but an opening session, "Regulation of the Computer Communications Industry," attracted only 70 to a room for 400, yet that session produced one of the more lively debates of the conference between George Ashley, general counsel of the New York Telephone Company and Bill Melody, formerly an economist with the Federal Communications Commission and now a private consultant.

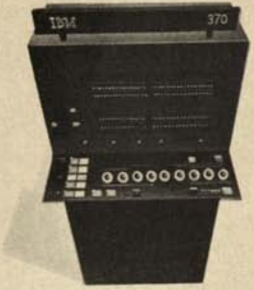
Said Ashley, referring to the FCC's specialized carrier decision and subsequent developments:

"What was intended to be an opening of a regulated industry . . . to the free play of supply and demand, with decisions made by market forces, has instead become a procedural morass of incredible complexity. The public in general and the dp industry in particular will be the losers if, in order to protect 'infant industries' and to enforce an artificial division of the market, the Bell companies are hobbled."

In reply, Melody said Bell's attitude reminded him of "an elephant walking among a bunch of chickens and saying 'let's all compete with each other'." The fact that the industry is a monopoly, he explained, makes true competition impossible unless special measures are adopted by the FCC to prevent AT&T from exploiting its dominant position.

This action will require some rather basic changes in regulatory philosophy, Melody argued. For example, "regulation has historically focused on Bell's overall rate of return," a practice that enables the phone company to play the cross-subsidy game—i.e., increase its rates for monopoly services, while reducing those for competitive services. Melody didn't appear to be optimistic regarding FCC's willingness to make competition between the elephant and the chickens more equal.

The keynote speech was delivered by


IBM
370

IBM
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Sen. Philip H. Hart (D.-Mich.) who referred to his proposed industrial reorganization act as a "reasonable little bill"—a description the Chamber of Commerce and other businessmen don't exactly share. Hart's point was that if his bill, or something similar, isn't adopted, the result will be much less "reasonable"—e.g., government regulation; elimination of what remains of free enterprise in the U.S.; and/or loss of our technological leadership, particularly to Japan and the Common Market. In both of these latter areas, Hart pointed out, steps had to be taken to deconcentrate domestic industries.

Attacking a key argument made by businessmen againt his bill, Hart said, "ten years of chairing [Senate] antitrust and monopoly hearings have convinced me that technical efficiency, inventiveness and innovativeness are not monopolies of giant corporations . . . certainly the edp industry is illustrative of this point. Significant innovations have been produced by small- and medium-sized firms, as well as large companies."

Afterward at a press conference, Howard O'Leary, an aide to Hart, said the subcommittee is looking into tax incentives as a way of encouraging large corporations to break themselves up voluntarily.

The security market

In contrast with the apparent minor concern of attendees with the issue of regulation, was the widespread interest in computer security brought into the limelight this spring by the involvement of computers in the celebrated Equity Funding insurance scandal (June, p. 88). "Suddenly," said a person attending one of eight sessions related to the subject, "a vast new market has been created in less than three months."

At a session on Secure Data Systems, some users criticized the vendors for failing to provide security systems, to which John W. Weil, of Honeywell, replied, "We've been developing shiny new products (for security), taking them up to our management, and being told the marketing department says nobody wants them. Users aren't going to get secure systems if they don't ask for them. Write them into the specs and tell the salesman what you want."

Earlier, Charles L. Foster, reporting on IBM's $40 million data security project, announced a year ago, suggested it would be a long time before the results of the study can be transferred into a product. He said the study will not end until next spring, the end of the second year of a five-year project.

Some security sessions proved amusing, particularly one on Security and Privacy in Disaster, in which a speaker related the theft three years ago of a computer program through a timesharing network in Palo Alto, Calif. Although the programmer accused of the theft has been convicted, the courts still are studying if a program is a trade secret. Meanwhile computer people in the San Francisco area jokingly have established the "Peninsula Ethic," wherein a shared program is automatically in the public domain unless particular steps are taken to protect it.

Another well-attended session, The Auditor's Interface with EDP Systems, brought forth the suspicion from a panelist that many compromises are being made in the audit of dp functions. Some installations allow the dp staff to select their own "random" records for an audit. Some programs to audit dp departments are produced by the same staff that is being audited.

Very few topics were left untouched in the conference program:

Automobiles: Speakers in a session, Onboard Computers for Automobiles, began with glowing predictions for computers in this massive market, but ended with gloomy warnings of reliability problems under the hot hood of a car. A 14-year-old youngster attending the session asked, "When will the computer in my car take me from New York to Boston?" He was told this might come about in time for him to enjoy it and for the panelists to experience it in "our dotage."

Data Bases: A day-long conference was devoted to the topic of data base management and the issue popped up in many other sessions. It was surprising to observers that many times it was suggested that hardware would provide the solution for data base management instead of software.

Performance Measurement: Speakers began talking about things that *could* be done, contrasting with many

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☐ Selling price from cost and gross profit margin.
☐ Compound interest with automatic scheduling.
☐ Forecasting with % increase/decrease.
☐ Depreciation.
☐ Commission.
☐ Proration.
☐ Distribution.
☐ % Analysis.
☐ Invoice extension with accumulation.
☐ Job estimating.
☐ Inventory extensions, count and average.
☐ Costing (jobs or process).
☐ Area/volume.
☐ Mark-up.
☐ Sales analysis.
☐ Price comparisons.
☐ Gross Profit Margin.
☐ % Increase/decrease.
☐ Sequential comparison
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sessions at last fall's FJCC where their counterparts were largely saying, "We don't know what to measure yet or how to measure it." Dr. Barry Boehm, of Rand Corp., told of progress by the National Bureau of Standards and the Association for Computing Machinery in defining the vocabulary of the measurement business.

Networks: Retrieving information on a network is difficult, speakers said, because nobody has come up with an "English-like, or pure English" language. Donald J. Hillman, Lehigh Univ., said designers find it difficult to index a data base because of great difficulties in deciphering the meaning of the input request, even in English.

Teletype's terminals

At the exposition, AT&T and one of its manufacturing subsidiaries, Teletype Corp., displayed their new model 40 data terminals. Both AT&T's booth and Teletype's attracted crowds of visitors. Among the curious was IBM's chairman, Frank Cary, who toured the show.

The curious also included other manufacturers of terminals—printers and crt's—and they weren't so pleased about it. One company executive, Ryal Poppa, president of Pertec, said his firm may abandon plans to manufacture a low-cost printer it has on its drawing boards because of the low price of the Teletype machine. The most intriguing aspect of the new products was the low cost—$1165 in oem quantities—for a stripped-down printer. That should be appealing to minicomputer manufacturers, who have been having trouble getting low-cost printers in sufficient quantities.

One exhibit that drew a great deal of attention was the Avis car rental booth, which was the only user exhibit at the show. Avis is proud of its "Wizard of Avis" computerized reservations system and wanted to show it off to other users, a company spokesman said. The company wasn't saying so publically, but it is not adverse to selling time on the system to other users. The system has excess capacity.

Greyhound Computer Corp. displayed its new "Phoenix" system—an expanded 360/30—and not only claimed it could outrun a 370/145, but offered visitors the opportunity to benchmark it at the show.

Booths were taller and larger than in recent years, a flashback to the golden era of pre-recession computer shows when the competition sought to outdo the massive displays of IBM, which was back at the show for the first time since 1970. Minicomputer maker Interdata built a booth to look like a giant minicomputer shell complete with a plug. But, chiefly, it was a business-like show.

Said AFIPS' Gilchrist, "Visitors looked seriously for equipment and information. On Tuesday, some people viewed a demonstration on how to clean discs. The next day they were back at the show with their discs to see if it worked."

The brand new, once-a-year conference—conceived and executed in less than a year—had its shortcomings, as expected. Many felt 100 technical sessions with four or five times that many papers was simply too much. But it was designed to serve the great users industries, and from preliminary attendance figures it succeeded. There were horrible instances of lack of preparation by speakers and lack of screening by the organizers, to the point that in one session that dwindled in attendance from 250 at the start to 20 at the end, the chairman told those remaining at the end, "Frankly, I don't know why you stayed."

But as Harvey Garner admitted, the organizers were experimenting in New York. The final judgment on the success of the first national conference won't be in until the doors open at Chicago's McCormick Place next spring for the second time around. And AFIPS is betting on an even larger turnout.

Societies

AFIPS' New Officers: "A Thorough Review"

In a revolt of the "little guys," the "official" officers' slate for the American Federation of Information Processing Societies was revised last month. Instead of electing Bernie Galler (See May, p. 18), the AFIPS Board chose George Glaser as president of the superorganization of 13 computer-related professional societies. The nomination from the floor was made by the representative of SIAM (Society for Industrial and Applied Mathematics).

SIAM, only recently admitted to full membership in AFIPS after an earlier rejection, is an "outsider" member of AFIPS, which heretofore has been dominated by the three societies that formed it: the Association for Computing Machinery, The IEEE Computer Society, and the Society for Computer Simulation (formerly Simulation Council).

So the successful challenge of the insiders' nomination may signal a new balance of power within AFIPS, which is still struggling with the sticky question of how to divvy up amongst its members the proceeds of the National Computer Conference.

One of the problems is that AFIPS' show income is controlled *not* by that metasociety, but by the partners to "The JCC Agreement," an official Appendix to the AFIPS constitution and by-laws that was signed by the three founding societies and AFIPS. In other words, there is now no mechanism by which the "profits" from the NCC can be shared by the new, outside member societies, or by any new members . . . such as the Data Processing Management Association, for instance.

Open arms

The possibility of such an expansion was slightly enhanced at the June board meeting when the Federation unanimously passed a resolution to invite the 25,000-member DPMA to join AFIPS. The wheels and cogs within

DPMA have been oiled for such a move, but there is still some opposition. At any rate, DPMA will undoubtedly want to know specifically how it will fit . . . in terms of voting rights as well as in terms of sharing NCC surpluses before it jumps aboard the clumsy clipper known as AFIPS.

At a special two-day AFIPS soul-searching workshop held in Atlanta in March, society biggies began to wrestle with this problem. But the ACM, DATAMATION learned, made it clear that it considers the NCC as a product stemming from their R&D work. And the ACM wants a return on what it considers this "investment." The Computer Society agrees with ACM on this point.

The DPMA has made it clear that it is willing to buy its way into the club. But they may not even get to bid: it's not clear that ACM and Computer Society are interested in broadening AFIPS at all, let alone sharing NCC revenues with upstart newcomers who, some of them undoubtedly feel, aren't even professionals at all.

Needed: snakebite kits

So new president Glaser, 41-year-old San Francisco management consultant (see profile, May, p. 208), has some problems on his hands. He and the new executive director, Bob Rector, are walking into what one viewer calls a nest of rattlesnakes.

The question of broader membership is only one of the vipers, but it's a leading candidate for wrestling with because it gets at the heart of the financial and political problems that plague AFIPS and its strongest, most vocal internal foe: big, badly-run and financially desperate ACM.

DPMA affiliation would strengthen AFIPS' position as a spokesman for the computer industry, which it now inadequately represents. Glaser says that DPMA's absence has weakened AFIPS' credentials and Rector calls DPMA the "reason-for" society: the reason AFIPS abandoned or didn't start many projects . . . because the findings or positions would not represent a true industry consensus.

Another rather important implication of DPMA membership would be its eventual participation in the NCC. DPMA show revenues are on the decline (June, p. 122), and that illness can only be accelerated by the fact that for the next two years, DPMA and AFIPS will be competing for exhibitors and attendees

Robert W. Rector: "Ask Me a Year from Now"

A former business associate describes him as "well-organized, on top of the job, three weeks ahead of everybody else" in planning. "It was a pleasure to see him in action."

Another former associate said of Dr. Robert W. Rector, who left UCLA this month to become executive director of the American Federation of Information Processing Societies (AFIPS), "He's a lovable guy, a fine man who is also a diplomat." He sticks up for what he believes, but "he won't go out of his way to pick a fight."

These, plus extensive experience in computer society affairs, are the credentials the 57-year-old Californian brings to his new job in Montvale, N.J., as head of a staff of 17 who manage the affairs of the 13-society federation, troubled in recent years by declining conference revenues, its search for a role in non-conference projects, and a wrangle over the disbursement of conference proceeds. Rector said in an interview recently his first priority at AFIPS is "to insure a viable one-conference-per-year operation."

He's aware of other challenges to the supersociety, primarily its role in educating the public on the position of computing in society. He thinks AFIPS could probe topical issues through "seed conferences," noting that the federation has budgeted $2,000 for a committee that will plan such conferences this year.

Born in San Jose, Calif., Jan. 28, 1916, Rector received his Ph.D. degree in mathematics from the Univ. of Maryland and his M.A. and B.A. degrees, also in mathematics, from Stanford Univ. and San Jose State. He was associate director of continuing education in engineering and science at UCLA when he took the AFIPS post. Previously he held executive positions with Cognitive Systems, Inc., and Informatics, Inc., of Los Angeles, and managed some data processing activities at Aerospace Corp. and Space Technology Laboratories. He's a Captain in the U.S. Naval Reserve and a former associate professor in the department of mathematics at the U.S. Naval Academy.

ROBERT W. RECTOR
He'll listen and mix

The quality of people

Rector admits he took the AFIPS post reluctantly, since it meant giving up his Los Angeles home and the university environment he's always longed for. What made him take the job? "The quality of people I've been associated with in AFIPS projects over the years."

A long-time member of the Association for Computing Machinery, Rector is a former treasurer and director of the federation. At the time of his appointment, he was chairman of its finance committee. He was chairman of the USA-Japan Computer Conference last year and general chairman of the 1965 Fall Joint Computer Conference in Los Angeles.

Said by friends to be a good mixer and a good listener, Rector, during his first months with the federation plans to do just that, "work for the executive committee and the board of directors, probe the AFIPS' staff members for ideas, and mix with the member societies." His talents are not as much those of an innovator or a visionary, as in his ability "to recognize it in others," says a friend who adds, "Maybe that's a more important trait. His job calls for being in the middle."

Rector's initial plans seem to agree with that assessment. When pressed in an interview to be more specific on what he felt of AFIPS' role, he answered: "Ask me a year from now." ☐

In this way the big conference of of AFIPS is announced. »data« has asked Philip Dorn, our regular New York correspondent, to report on the Conference and Exposition.

The National Computer Conference, first of its kind, drew 32.643 registrants into hot, steamy New York during the first week in June. Despite the requirement to hike repeatedly from hotel to the Coliseum, a convention hall which has absolutely no place to sit and rest tired feet and hotels that mysteriously misplace confirmed room reservations, the NCC was a surprising success. Approximately 100 technical sessions attracted 3.926 participants, the difference between the total head count and those who actually go to sessions is astonishing.

AFIPS officialdom, nervous over the hastiness with which the NCC was assembled, breathed a deep sigh of relief at week's end. Next year's Chicago site offers better facilities and longer lead time for newly-appointed AFIPS Executive Director, Dr. Robert Rector, and incoming AFIPS President, George Glaser, to get things organized.

Displays ranged from the handmade signs of tiny software houses to elaborate constructions with banners, pretty girls and all the now-traditional show-business props. Ampex's puppet, complete data entry systems, IBM's traditional blue boxes; none could compete with everyone's longtime favorite demonstrator, the modem girl from Milgo. A total of 217 companies used 620 booth slots to display their wares.

Keynoter, Democratic Senator from Michigan Philip A. Hart, calmly discussed his Industrial Reorganization Bill. The proposed legislation creates a fact-finding commission in an attempt to detect monopoly or near monopoly conditions in key industries. Hart alleges that free enterprise is dead or dying and that the only possible cure is a healthy dose om anti-trust. He warns quietly that if an industrial segment is dominated by one or two companies, the situation is ripe for direct government intervention in management affairs and suggests that it is better to reorganize first and perserve the competitive struggles which force companies to create new and better products. Estimates of the chances for Hart's bill to become law range from poor to none at all but public exposure of monopoly conditions is sufficiently important to justify the time and effort to hold hearings. Both the general public and the Congress do not seem to be aware of the growing aggregation of power. Although EDP and Communications are on the Senator's list of seven industries where concentrations exist, he has not yet decided which industries will be examined in detail. Needless to say, IBM management had no comment but frowns and scowls were noticable on executive faces.

Technical sessions

As always, preprinted papers were avaible as Proceedings, the only change from previous years is that AFIPS now charges a registrant for mailing the bulky volume. The happy trend toward fewer and fewer speakers reading their papers seems to be continuing. Unfortunately, no method has ever been found for prerecording free-wheeling panel discussions or for distributing the many interesting movies shown at the Graphics Film Festival. Although Graphics does not seem to be of great industrial importance, the work done continues to be extremely interesting and the potential pay-off still dangles just out of reach.

Legal sessions, there were three in all, seemed to break apart on the software patent question. Most concede a need for some form of protection for the developer of a program, however there seem to be as many potential protection schemes as there are programs

focus på...

– »Utan teori ingen god praktik, utan praktik är grunden vag, dokumentation m. m. fordrar att insikt finns, rutinen kan ibland ersätta någonting som fattas«. (GN)

– »Det tenkes på en omskolering/etterutdannelse av økonomer/siv.ing./cand. real/cand. mag.-kandidater til læreryrket«. (PS)

– »Goda pedagogiska egenskaper är ofta viktigare än högt teoretiskt vetande med svag utgivningsförmåga«. (VV)

Fri eller begrænset adgang?

At alle på nær én kræver god adgang til datamat kan næppe undre – det skulle da lige være den ene, der svarer:

– »Ingen, men det beror alltid på situationen«. (TL)

Derimod er der stærk uenighed om omfanget af adgangen. 6–7 kræver begrænset adgang, mens 4–6 kræver fri adgang. Usikkerheden skyldes ordvalget i svarene, så lad hellere panelet selv udtrykke sig:

– »I samband med specialistutbildning som till stora delar är teknikorienterad ser jag datamaten som mycket viktig. Även i efterutb. kan case-orienterade kurser ha god nytta av datamat. Sätt den dock inte i centrum!!« (LA)

– »Fri adgang til maskine og miljø under specialistuddannelsen, da dette må betragtes som afgørende for at give eleverne en holdning til edb«. (MB)

– »De fleste uddannelser kræver nem adgang til datamat. Materiellets art er underordnet, da uddannelsen kan indrettes efter det forhåndenværende. Tilgængelighed: Daglig, men GERNE begrænset og mod betaling (SUNDT!). Omfang: Umuligt at generalisere: Haves 10 sek./dag, klarer man sig med det. Haves en hel 370/195, bruges den!« (CG)

– »Daglig, helst också terminal, begränsad tidsförbrukning per elev«. (MR)

– »Fri tillgång, åtminstone tillräckligt med tid för alla övningsuppgifter«. (VV)

Uddannelsesplaner og eksamenskrav

Der er et stort behov for igangsætning af uddannelsesrelevante udviklingsprojekter – og der er masser af gode ideer at hente hos panelet:

– »Diskussion/samarbete om utformning av »goda« kurs-*planer*. EDB är för stort ämne för att undervisas som ETT ämne. Specialisering bör göras – efter viss gemensam grundutdannelse. Intressant »projektfråga« = vilka specialiteter? Vilka kurser?« (JB)

– »Der er allerede taget initiativer på så mange områder, at det nuværende behov stort set kan dækkes. En analyse af udviklingen på området vil nok give større basis for nye indsatser«. (MB)

– »Hvad skal edb i folkeskolen være? Hvordan undgår vi at alle skoleelever bliver Basic-automater? Opfind det rigtige materiel + programmel + indhold til folkeskolens »datalære!« – Hvor og hvordan dette projekt: Ved ikke! Vil gerne være med«. (CG)

– »Fremstilling af undervsinings- og casemateriale til uddannelse af systemører som projektledere. Ditto til uddannelse af andre fagligt uddannede som projektledere. Det er sandsynligvis i disse områder, der i øjeblikket er størst behov«. (HK)

– »Forskningsprojekter af mange slags, bl. a. vedr. udformningen af kriterier og metoder for systemevaluering, så vi mindsker muligheden for, at brugeren kan jamre over, at netop hans system er det værste af alle, samtidig med at specialisten kan juble over, at netop dette system er det bedste af alle!« (AAM)

– »Standardiserade fordringar för programmerare, planerare och operatörer, dvs. examina. – Begrundelse för svaret: lönepolitik, kvalitetsfrågor«. (GN)

– »Teoretisk grunnlag for systemkonstruksjon. Metoder for systemvurdering, både totalsystem, maskinvarer og programvarer. Prinsipper og teknikker for utprøving av programvarer. – Mangel på systemteoretisk fundament er bransjens svakeste punkt«. (AS)

– »Etter en entydig stillings- og funksjonsbeskrivelse kan en inndele faget i kursblokker med strukturert innhold. Ved at det offentlige nedsetter utvalg med bred sammensetning og klart mandat og med pålegg om nordisk samordning«. (PS)

Samarbejde er ressourcekrævende

Også på spørgsmålet om udvidet nordisk samarbejde er der inspiration at hente – for rette vedkommende:

– »Standardisering af kvalifikationer og eksamenskrav samt undervisningsmaterialer, når det gælder grunduddannelse af specialister og lærere. – For meget overlappende arbejde, når det gælder undervisningsmaterialer«. (HA)

– »Tror ej på »nordisk standardisering« generellt. Komplexiteten samt olika »kulturer« omöjliggör alltför ambitiösa strävanden i sådan riktning. Utvecklingen bör primärt ske på nationell bas. Nordiskt samarbete bör gå ut på att fånga upp denna utveckling och på olika sätt möjliggöra erfarenhetsutbyte«. (LA)

– »Erfarenhetsutbyte betr. basutbildning. Utbyte av föreläsare i samband med konferenser och övrig fortbildning. Bör organiseras till att börja med genom informationsutbyte inom NDU och sedan t. ex. genom någon gemensam instans där man registrerar rapporter från utredningar, konferenser och seminarier inom Norden«. (SH)

– »Ensretning af uddannelsernes indhold og mål. Udarbejdelse af fælles AV materiale. Nogen må tage et initiativ og f. eks. for undervisningsministeriets regning samle den nødvendige nordiske viden med det formål at fastlægge hovedtræk og derefter udarbejde arbejdsmål for projektgrupper med en fælles overordnet styring«. (HK)

– »Meningsfylt samarbeid organiseres kun ved personlig kontakt. Derfor må der organiseres en målrettet utveksling av undervisningspersonell, konferenser, etc. – Å investere i samarbeid er kostbart. Ekstra ressurser må stilles til rådighet for dette«. (AS)

Standardmoduler?

Også på det sidste spørgsmål er panelet splittet. 7 ønsker standardisering. 3 ønsker individualisering. 5 vil standardisere grunduddannelsen og individualisere videreuddannelsen. 2 vil tilgodese alle hensyn ved at individualisere på basis af standardiserede moduler.

Således udtrykkes de forskellige holdninger i typiske argumenter for:

a. standardisering

– »Bedre bedømme ansøkers EDB-kompetanse/nivå. Lettere kontrollere/bidra til å høyne kravet til faget/lærerne«. (PF)

– »Sikrer bedst de svagere, dvs. dem uden forbindelser + penge, samt dem der ikke har overskud + initiativ til selv at sammensætte super-uddannelse«. (CG)

– »Varje individs konstnärlige drag växer upp under tidens lopp av sig själv«. (TL)

– »Läraren må ta hänsyn till individualismen«. (MR)

– »Gemensamt intresse före den enskilda individens personlighetsutvecklingskrav«. (VV)

b. individualisme

– »Ämnet är ej tillräckligt teoretiskt/praktiskt konsoliderat för att standardisera. Individualiserad utdannelse *stimulerar* ett ämnes utveckling (förhoppningsvis till »det bedre«)«. (JB)

c. standardisering og individualisme

– »Basutbildningen bör vara standardiserad. Kompletterad med individuell fortbildning«. (SH)

– »Det afhænger af niveau og udviklingstendenser«. (MB)

d. modularisering

– »Standardmoduler, som sammensættes individuelt inden for ret vide rammer pr. uddannelse«. (HK)

Når der kan udtrykkes så forskellige holdninger, som disse eksempler viser, er ideen om standardmoduler da et Columbus-æg? – Eller blot et vind-æg? ■

computer show on earth!

new Federal Court decision holding that if a process is patentable and such action is not taken, the inventor has lost his rights in the matter and even iron-clad employment agreements will not provide protection. What next?

Data base sessions, divided as usual between the academic theoreticiand and the industrial practioners, nevertheless were popular, well-attended and revealing as more and more users begin to report on the work that has been done rather than just future plans. The intense fight between CODASYL and the SHARE/GUIDE forces still continues but it has become a private battle rather than a contest in the public media.

Other major discussion areas included security and privacy, training and performance measurement. Bob Bemer's sessions devoted to particular industries received their share of attention, regretably most of the sessions were attended solely by people in the industry being discussed and the hoped-for cross-fertilization took place only in the halls and lobbies. Dr. H. R. J. Grosch, enjoying his last few weeks at the National Bureau of Standards before becoming a journalist, was seemingly everywhere and bending a lot of ears about user power, Bob Bemer relived the early ALGOL days and Commander Grace Hopper made her (now traditional) strong appeal for standards.

Exhibits

Disc files, tape drives, mini-computers, terminals in all sizes and shapes, memories, source data entry devices, some displayed beautifully and some on a worth protecting. The trade secret approach has been snagged on a strange take it or leave it basis, hundreds of print-outs at 30 cps of Snoopy on his doghouse, super-bright high school students (the RESISTORS have outgrown their barn and tube machines and now are using Princeton University's 360/91), press conferences from 0800 to 2400 and every hour inbetween, the bright red paint on the Wizard of Avis, the bold orange of the extended, accelerated, almost unrecognizable 360/40 belonging to Greyhound; all checkpoints in the overwhelming carnival that is a computer exposition. The EDP community hates to label anything »old and reliable«, every box seems to be marked »new and improved«. The high spots were indeed high, the low points easy to ignore.

Control Data Corporation did not have a main frame but all the peripherals were present, tape drives, disc drives and printers. The newly announced CDC versions of the IBM 1403 printer and 3420 tape drives plus the new 200-million byte disc (not IBM-compatible but the data transfer rate, 806KB, is the same as the 3330) makes one wonder if CDC isn't getting into the 360/370 marketing world. All that is missing is a main frame and Amdahl could probably provide that next year.

Four-Phase Systems, a success with its System IV/70, now shows the smaller IV/40, a system designed for RJE as well as shared processor data entry at low cost for those sites that only need a few stations. With three terminals, a disc and communications as well as the simulators for the IBM 2260/3270 terminals, the IV/40 leases for as little as $573 a month. Four-Phase has come a long way in a few years.

Not to be caught short, Inforex displayed its new Keyscan TM system, a combination of optical character recognition, automatic document processing and operator keyboard intervention married to shared processor technology. Batching of cheques and turnaround documents and immediate error detection and correction should be a major step forward for users with such applications as subscription fulfillment, credit card and utility billing.

If small OCR systems are showing signs of life, larger sized page readers are rapidly falling in price. Decision Inc. has announced the 7600 system, half the price of IBM's 3886 scanner. The key to the 7600's performance appears to be in the use of a floppy disc for font, a read-before-move philosophy and apparently new scanning technology developed by a handful of bearded physicists for the tiny California company.

The terminal world, innovative, violently competitive and financially erratic, was shaken by the long awaited display of the new Model 40 Teletype display. A slick looking job complete with printers, keyboards, mag tape cartridges and all the bells and whistles, the only problem facing Teletype is the political question of their status within and without the AT&T world. At the moment the Model 40 is OEM buy-only, but this could change in a hurry.

Sycor Inc., first user of mag tape casettes, has broadened its product line with the introduction of Model 250 series terminals, a new group of intelligent terminals aimed directly at the IBM 3270. Plugcompatible, built around an 8K read-only memory and with capability for printing on two continuous forms separately, Sycor expects this new series to enable them to maintain their position as one of the most innovative of the independents.

Back in a quiet corner, Nixdorf, now fully in charge of the Victor Computer operation, showed only its series 800 accounting system with magnetic ledger cards. It isn't so much what they showed, it is that Nixdorf elected to stay with the NCC and take a peek at the market that interested strollers. Questions regarding Nixdorf's future were politely evaded by the all-American sales team present.

Modular Computer Systems Inc., earlier successful with MODCOMP I, II and III, introduced the MODCOMP IV/10 and /25, two new 32-bit computers. The Florida-based mini- manufacturer has grown up, 32-bit word size is taking dead aim on small 360/370s particularly if such features as 512K maximum memory, 16 sets of general registers, 64 bit floating point arithmetic, hardware memory mapping, 256 word memory protect blocks, pushdown stacks, etc. are examined. The software includes a real-time operating system, FORTRAN IV, BASIC, RPG II, SORT/MERGE, an assembler and a file management system. It is hard to believe that the CPU costs under $ 25.000 (purchase). Initial installation will be in traffic control and power generation and distribution, long an XDS Sigma-line territory.

It may not be a mini but IBM's System 3 is a very successful computer, over 40.000 have been sold. For the first time, non-IBM memory is available for System 3/10 with the release of the Fabri-Tek MOD 10+, a fully compatible main memory with expansions up to 56K. The first box off the line went to Group 3, the Los Angeles based System 3 user's group which makes recommendations to their world-wide membership. Most System 3 users were unaware of the availability of non-IBM memory, if succesful with Group 3 a large market should open up rapidly.

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The Methods and Applications portion of this volume was produced entirely by use of computerized text processing and photocomposition.

COMPUTER DESIGN

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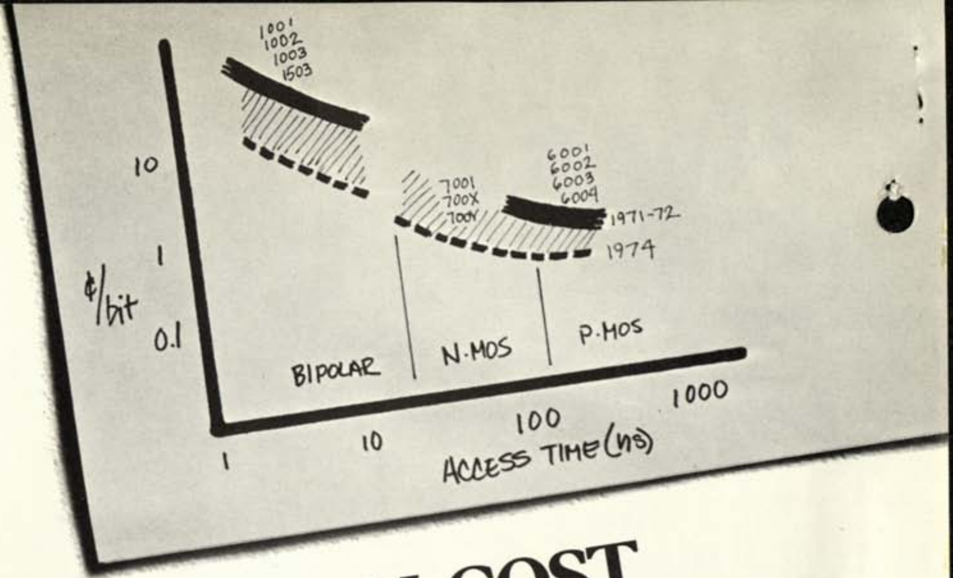

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CIRCLE 33 ON INQUIRY CARD

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Program

Centered upon "The Computer and Its World," 73 NCC will feature the most extensive program on computer technology, data processing applications, and management issues ever assembled. Under the general chairmanship of Dr Harvey L. Garner, professor and director of the University of Pennsylvania's Moore School of Engineering, the Conference will comprise ***five*** days of over 100 sessions, seminars, addresses, and presentations. More than 90 sessions and panels will be divided into two basic areas—Science & Technology, and Methods & Applications—each forming a "conference within a conference." The program excerpts which follow these paragraphs list only those sessions of particular interest to *Computer Design* readers. Only information available at press time has been included.

The Science & Technology program, headed by Dr Carl Hammer, director of computer sciences for Univac, will offer 56 sessions with over 100 papers and nearly 400 participants. Areas to be dealt with include communications, networking, and terminals; computer architecture and hardware; information processing and pattern recognition; management interests in conversion, data bases and data security, forecasting, and performance evaluation; displays and graphics (featuring "A Day with Graphics" on Wednesday); EDP education; simulation and process control; software; and areas of concern to the computing community. As a special feature, each of AFIPS' 13 constituent societies will present a session covering topics of prime interest to its membership.

Chaired by Robert W. Bemer, staff consultant to the vice president of Advanced Systems and Technology, Honeywell Information Systems Inc, the Methods & Ap-

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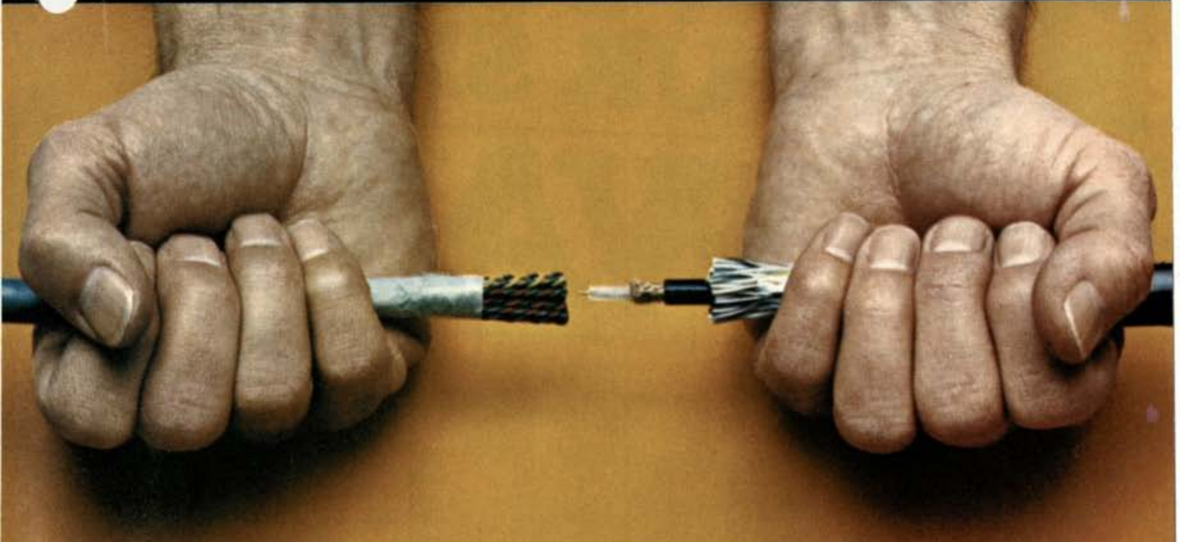
establishing plug-to-plug compatibility within a multi-company Information Display System.



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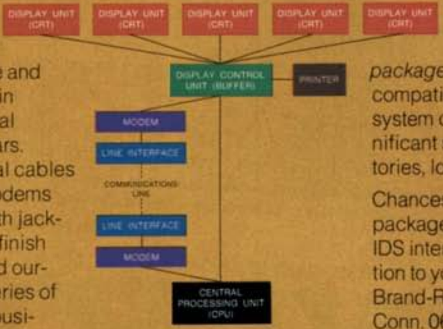

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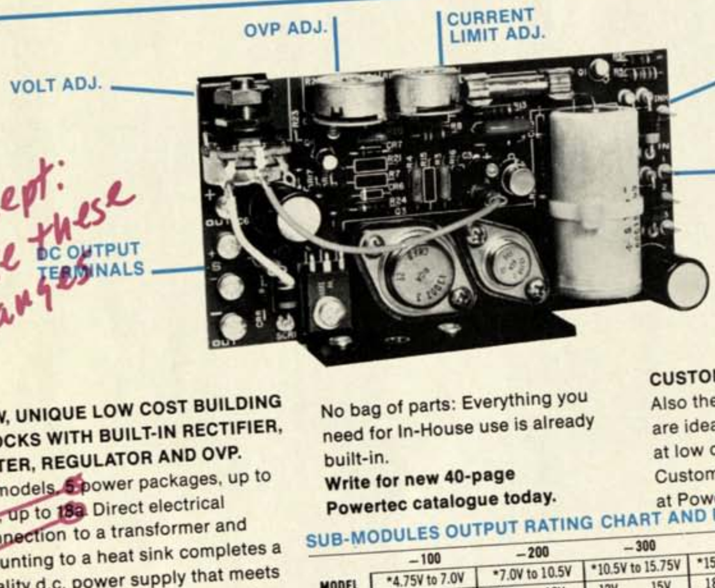

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22D	12.0A	10.4A	8.8A	7.6A	6.8A	6.0A	5.6A	5.2A	5.0A	4.7A	40.00
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22J	75.0A	65.6A	53.9A	46.9A	42.8A	38.0A	35.0A	33.4A	31.3A	29.5A	$175.00

plications section will focus on resource utilization as it relates to installation management, government, industry, and merchandising, as well as the general areas of publishing, knowledge dissemination, reliability, hand-held calculators, voice answerback, computer use around the world, securities, and "Computers Are for People."

The Conference Luncheon, scheduled for noon Wednesday at the Americana, will feature an address by Dr Lewis M. Branscomb, vice president/chief scientist, IBM Corp. Edward N. Cole, president, General Motors Corp will speak at a special Industry Luncheon on Thursday at noon, also at the Americana. Conference receptions will take place Tuesday and Thursday evenings.

Special Activities

A Special Program has been arranged by Conference vice chairman Dr Charles F. Freiman, manager of Systems Development, IBM Research. Key sessions will include Computer Technology as a Public Resource, Venture Capital for the Computer Industry, Outlook and Prospects for Marketing Abroad (organized by the Dept of Commerce), Career Development for Computer Professionals, and Economic Future of the Data Processing Industry (organized by *Business Week*).

The Association for Computing Machinery has prepared a 1½-day special seminar (Thursday and Friday) on "Managing the Impact of Generalized Data Bases" (Session 79), to be held in the New York Hilton's Regent Room. Registration, which includes a copy of Seminar Proceedings and a separate Thursday luncheon, is $40 and is open to all 73 NCC full-Conference attendees.

A Science Film Theater and a Computer Art and Music Exhibit will be offered during all five days of the Conference. A High School Computer Science Fair will be held Monday and Tuesday and will be open to the public.

Exhibits

More than 200 organizations will participate in the world's largest exhibit of computer hardware, software, systems, and services. Geared to meet the needs of data processing technology and installation management, the displays will occupy almost 70,000 sq ft on the first and second floors of the Coliseum. Exhibits may be viewed from noon to 8 pm, Monday; 10 am to 6 pm, Tuesday, Wednesday, and Thursday; and 9 am to noon, Friday. The product information on the pages following the program excerpts includes items on which data were available at press time. Emphasis has been placed on products being exhibited to a general audience for the first time; however, a review of other products is also included for our readers' interest.

Registration, Proceedings

For the entire five days including exhibits, registration is $50 for members of AFIPS constituent societies, $60 for nonmembers. Other fees include $20 for 1-day program/exhibits, $15 for 5-day exhibits only, $5 for 1-day exhibits only, and $5 complete for full-time students. Registration will take place all day Sunday (June 3) at the New York Hilton, and during exhibit hours of all five days of the Conference, at both the Hilton and the Coliseum.

Full-Conference registration will include a copy of the 1000-page Proceedings; post-Conference price of the Proceedings is $40.

Registration and housing forms, as well as any other 73 NCC information, may be obtained by writing AFIPS, 210 Summit Ave, Montvale, NJ 07645, or via a toll-free hot line: (800) 631-7070.

TECHNICAL PROGRAM EXCERPTS OF INTEREST TO *COMPUTER DESIGN* READERS

Science & Technology Program

Monday Afternoon

Session 5 1:30-3:30 Americana/Georgian A

What's the Computation in Computational Linguistics?

Chairman: R. F. Barnes, Lehigh University

To suggest some present and future directions in theory and applications, members of the Association for Computational Linguistics report and speculate on natural language processing.

"Linguistics and the Future of Computation," D. G. Hays, State University of New York, Buffalo

"Speech Understanding," D. E. Walker, Stanford Research Institute

"Semantic Processing and Systems Applications," W. A. Woods, Bolt, Beranek and Newman, Inc

"Syntax and Computation," J. J. Robinson, IBM Corp

"Literary Text Processing," S. Y. Sedelow, University of Kansas, Lawrence

Session 6 1:30-3:30 Hilton/Murray Hill B

Conversion Problems

Chairman: B. Dunning, Army Military Personnel Center

Panel addresses itself specifically to needs for standardization as well as problems and pitfalls of conversion and ways to avoid them.

"Conversion of Software," S. Ruth, US Navy, FMSO

"Overall Systems Conversion," J. F. Cunningham, World Bank

"Case Study on Conversion to Unspecified Systems," P. Hoyt, US Army

"Utilization of Large-Scale Systems," W. E. Hanna, Jr, Social Security Administration

"Cost-Effectiveness of Parallel Conversion Efforts," G. C. Durand, Southern Railways Inc

"Need for Standardization and Where We Go from Here," G. M. Hopper, USN, OPNAV

Session 8 1:30-3:30 Hilton/Sutton South

Computer Evolution and the Next Decade

Chairman: N. R. Kornfield, Widener College

The IEEE Computer Society assesses features, trends, and requirements of hardware, software, applications, and other technical factors which impact commercial and military computers.

"In the Beginning," H. Campaigne, Slippery Rock State Teachers College

"Factors Affecting Commercial Computer System Design in the Seventies," W. F. Simon, Sperry Univac

"Factors Impacting on the Evolution of Military Computers," G. M. Sokol, Army Computer Systems Command

"Future Direction—A Technical Assessment," H. Freitag, IBM Corp

Session 9 1:30-5:45 Americana/Regency

Trends in Data Base Management

Chairman: G. Dodd, General Motors Research Laboratories

Session deals with developments demonstrating evolutionary trends in data base technology, including specialized processors, relational data bases, data base sharing, and optimal data distribution within a computer network.

"Fourth Generation Data Management Systems," V. K. M. Whitney, General Motors Research Laboratories

"Representation of Sets on Mass Storage Devices for Information Retrieval Systems," S. T. Byrom, University of Tennessee; and W. T. Hardgrave, CERN European Organization for Nuclear Research

"Design of Tree Networks for Distributed Data," R. G. Casey, IBM Research Laboratory

"Specifications for the Development of a Generalized Data Base Planning System," J. F. Nunamaker, Jr, D. E. Swenson, and A. B. Whinston, Purdue University

"Database Sharing: An Efficient Mechanism for Supporting Concurrent Processes," P. F. King and A. J. Collmeyer, Xerox Corp

"Optimal File Allocation in Multi-Level Storage Systems," P. P. S. Chen, Harvard University

"Interaction Statistics from a Database Management System," J. D. Krinos, United Aircraft Research Laboratories

"A Back-End Computer for Data Base Management," E. L. Ivie, Bell Telephone Laboratories

Session 13 3:45-5:45 Hilton/Murray Hill B

Intelligent Terminals

Chairman: I. Cotton, National Bureau of Standards

Among subjects examined are the most efficient division of labor between terminals and central computer, limits to power provided in such terminals, and the "wheel of reincarnation" syndrome.

"Electronic Point-of-Sale Terminals," Z. Thornton, National Bureau of Standards

"Design Considerations for Knowledge Workshop Terminals," Stanford Research Institute

"Microprogrammed Intelligent Satellites for Interactive Graphics," A. Van Dam and G. M. Stabler, Brown University

Panelists: D. A. Curtis, Touche Ross and Co; H. French, IMLAC Corp; and L. C. Hobbs, Hobbs Associates

Session 14 3:45-5:45 Americana/Georgian B

Computing for Statistical Purposes: Expectations Amid Accomplishments and Gaps

Chairman: M. E. Muller, World Bank

Americal Statistical Association members address themselves to data exploration, large volume data analysis, algorithms for statistical purposes, interactive computing, graphics, and systems performance.

Panelists: A. Beaton and J. Tukey, Princeton University; J. M. Chambers, Bell Telephone Laboratories; and R. M. Elashoff, University of California, San Francisco

Tuesday Morning

Session 20 8:45-12 Hilton/Grammercy

Instrumentation, Computers and Process Control

Chairman: A. C. Lumb, The Procter & Gamble Co

Session highlights several areas in which the Instrument Society of America is using computer technology to solve industrial instrumentation and control problems.

"Modeling and Simulation in the Process Industries," C. L. Smith, Louisiana State University

"Needs for Industrial Computer Standards—As Satisfied by ISA's Programs in This Area," T. J. Williams, Purdue University; and K. A. Whitman, Allied Chemical Corp

Session 21 8:45-12 Hilton/Murray Hill

Advanced Hardware

Chairman: J. T. Lynch, Burroughs Corp

Discussions are based on various hardware developments which reflect on the computer architect.

"Tuning the Hardware via a High Level Language (ALGOL)," R. Brody, Burroughs Corp

"High Speed Techniques, Optical Data Links, Etc," R. Clapper, IBM Corp

"10^{-5} to 10^{-7} Cent/Bit Storage Media: What Does It Mean?" J. Davis, Dept of Defense

"Computer On a Chip and a Network of Chips," G. Huckell, Naval Electronics Laboratory Center

Discussant: R. A. Stokes, Burroughs Corp

Session 22 8:45-10:15 Hilton/Gibson

Information Sciences: Promises, Realities, and Futures

Chairman: J. Belzer, University of Pittsburgh

Panel examines state-of-the-art and 5 to 10 years hence, in terms of new tools, methodologies, and the environment necessary for isolating pertinent information.

Panelists: J. C. R. Licklider, Massachusetts Institute of Technology; A. Oettinger, Harvard University; and M. Turoff, Office of Emergency Preparedness

Tuesday Afternoon

Session 32 1:30-5:45 Hilton/Gibson

Performance Evaluation

Chairman: M. D. Abrams, National Bureau of Standards

Session focuses on internal and external measures and measurement techniques for evaluating the performance of computer and teleprocessing systems according to fiscal and human criteria.

"Quantitative Evaluation of File Management Performance Improvements," T. F. McFadden, McDonnell Douglas Automation Co; and J. C. Strauss, Washington University

"A Method of Evaluating Mass Storage Effects on System Performance," M. A. Diethelm, Honeywell Information Systems Inc

"The Memory Bus Monitor—A New Device for Developing Real-Time Systems," R. E. Fryer, Naval Weapons Center

"Design and Evaluation System for Computer Architecture," K. Hakozaki, M. Yamamoto, T. Ono, N. Ohno, and M. Umemura, Nippon Electric Co, Ltd

"An Analysis of Multiprogrammed Time-Sharing Computer Systems," M. A. Sencer and C. L. Sheng, The University of Ottawa

"Use of the Spasm Software Monitor To Evaluate the Performance of the Burroughs B6700," J. M. Schwartz and D. S. Wyner, Federal Reserve Bank of New York

"Evaluation of Performance of Parallel Processors in a Real-Time

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CIRCLE 36 ON INQUIRY CARD

Environment," G. R. Lloyd and R. E. Merwin, Safeguard System Office

"A Structural Approach to Computer Performance Analysis," P. H. Hughes and G. Moe, University of Trondheim, Norway

Discussants: T. Bell, Rand Corp; and W. Suhler, IBM Corp

Session 35 1:30-3:30 Hilton/Beekman

The Impact of Networking on Storage, Retrieval and Transfer of Technical Information

Chairman: A. J. Kasarda, Lehigh University

Under the auspices of ACM/SIGIR/SIGLASH, this informal discussion probes state-of-affairs of the present and future.

"The National Viewpoint," E. C. Weiss, OSIS

"Interactive Retrieval Developments, D. J. Hillman, Lehigh University

"Telecommunications Developments," MCI-Data Transmission Engineering

Session 40 3:45-5:45 Hilton/Murray Hill

Automated Project Management Systems

Chairman: I. Bitz, Consultant

Advances in automated systems in terms of management and control capabilities as well as cost and resource aspects are explored.

"The MARK III Project Management System, J. R. Cumberpatch, Program Control Corp

"Resource Allocation in Automated Project Management Systems," I. Bitz, Consultant

"A Computer Graphics Assisted System for Management," R. Chauhan, Tektronix, Inc

Session 42 3:45-6:15 Hilton/Beekman

The Growing Potential of Mini/Small Systems

Session reviews new techniques and applications which exemplify the growing potential of small systems.

"Computer Architecture and Instruction Set Design," P. Anagnostopoulos, M. J. Michel, G. H. Sockut, G. M. Stabler, and A. Van Dam, Brown University

"A New Minicomputer/Multiprocessor for the ARPA Network," F. E. Heart, S. M. Ornstein, W. R. Crowther, and W. B. Barker, Bolt Beranek and Newman, Inc

"Data Integrity in Small Real-Time Computer Systems," T. Harrison and T. J. Pierce, IBM Corp

"The Design and Implementation of a Small Scale Stack Processor System," M. J. Lutz, State University of New York, Buffalo

"Operating System Design Considerations for Microprogrammed Mini-Computer Satellite Systems," J. E. Stockenberg, P. C. Anagnostopoulos, R. E. Johnson, R. G. Munck, G. M. Stabler, and A. Van Dam, Brown University

Wednesday Morning

Session 49 8:45-12 Hilton/Grammercy

Computer History: Critical Turning Points in Software Developments

Chairman: W. F. Luebbert, US Military Academy

Invited panelists whose ideas have been significant in the evolution of modern software or who have written on the evolution/history of software discuss key turning points in that evolution.

Panelists: S. Gorn, University of Pennsylvania; G. M. Hopper, US Navy, OPNAV; D. E. Knuth, Stanford University; A. Perlis, Carnegie-Mellon University; and J. E. Sammet, IBM Corp

Session 50 8:45-10:15 Hilton/Murray Hill

Interactive Computing: A Mind Expander

Chairman: C. Machover, Information Displays, Inc

Members of the Society for Information Display explore methods of forcing a machine to understand man's natural language—in essence, extending and expanding man's unique capability for creative thinking.

"The Use of Interactive Graphics Systems for Educational Research Purposes—Involving Free Standing Computer Systems," W. Giloi, University of Minnesota

"The Augmented Knowledge Workshop" D. C. Engelbart, R. W. Watson, and J. C. Norton, Stanford Research Institute

"Graphics, Problem-Solving and Virtual Systems," R. Dunn, Army Electronics Command

Discussants: B. Hertzog, University of Michigan; C. Rosenthal, Bell Telephone Laboratories; and A. Van Dam, Brown University

Session 56 10:45-12:45 Hilton/West

Graphic Applications I

Chairman: J. Potts, Naval Ship Research & Development Center

First session of "A Day with Graphics" deals with the applications of computer graphics in engineering, aerospace, medicine, and digitizing.

"Graphics & Engineering: Computer Generated Color-Sound Movies," L. Baker, Los Alamos Scientific Laboratories

"Graphics Computer-Aided Design in Aerospace," R. Notestine, Lockheed California Co

"Graphics & Digitizing: Automatic Transduction of Drawings into Data Bases," C. M. Williams, Virginia Polytechnic Institute & State University

"Graphics in Medicine and Biology," C. Newton, School of Medicine, University of California, Los Angeles

Session 57 10:30-12 Hilton/Murray Hill

Information Science and Technology Through the Eyes of ASIS

Chairman: R. M. Landau, International Development Center

Session provides a general acquaintance with the activities and goals of the American Society for Information Sciences.

"Keynote Address," J. Sherrod, National Library of Agriculture

"Society Activities," H. Koller, American Society for Information Sciences

"ERIC/CLIS Program," J. I. Smith, ERIC/CLIS

"ASIS Publication Program," A. Elias, American Society for Information Sciences

Wednesday Afternoon

Session 62 2:30-5 Hilton/West

Graphic Applications II

Chairman: R. Allen, Flow Research, Inc

Discussions in second session of "A Day with Graphics" cover graphics in art, education, engineering, architecture, and in a software system.

"Graphics and Art: The Topological Design of Sculptural and Architectural Systems," R. Resch, University of Utah

"Graphics and Education—An Informal Graphics System Based on the LOGO Language," W. W. Newman, Queen Mary College, London

"Graphics and Interactive Systems: Design Considerations of a Software System," R. C. Gammill, University of Colorado

"Graphics & Architecture: Recent Developments in Sketch Recognition," N. Negroponte, Massachusetts Institute of Technology

"Graphics and Electronic Circuit Analysis," J. Franklin, Naval Ordnance Laboratory

Session 63 1:30-5:45 Hilton/Grammercy

Views of the Future I, II

Chairman: M. Turoff, Office of Emergency Preparedness

Formal technological forecasting and assessment studies together with efforts dealing with the impact of computer and related technology on various segments of society are presented.

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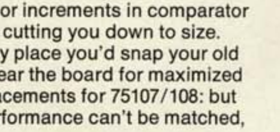

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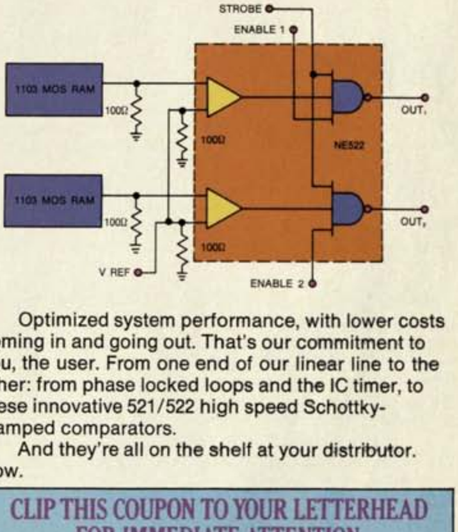

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CIRCLE 37 ON INQUIRY CARD

"Chairman's Introduction: Opposing Views," M. Turoff, Office of Emergency Preparedness

"The Future of Computer and Communications Services," L. H. Day, Bell Canada

"Social Impacts of the Multinational Computer," B. Nanus, University of Southern California; L. M. Wooten, Southern Methodist University; and H. Borko, University of California, Los Angeles

"A New NSF Thrust: Computer Impact on Society," P. G. Lykos, National Science Foundation

"The Impact of Technology on the Future State of Information Technology Enterprise," L. A. Friedman, Planning Research Corp

"What's in the Cards for Data Entry?" G. Bernstein, Naval Supply Systems Command

Discussants: N. Macon, The American University; and J. Martino, US Air Force

Session 64 1:30-3:30 Americana/Regency

Mathematical Software: State-of-the-Art

Chairman: W. J. Jameson, Jr, Spectra Associates

Invited papers from the Society for Industrial and Applied Mathematics consider various aspects of mathematical software, including current research in software and software systems, and the accuracy of algorithms.

"NAPSS Like Systems: Problems and Prospects," J. R. Rice, Purdue University

"Developing Software for Matrix Computation," C. B. Moler, University of New Mexico

"The Correctness of Programs for Numerical Computation," T. E. Hull, University of Toronto

Session 65 1:30-3:30 Hilton/Regent

Computing and the Law: Interactions

Chairman: P. H. Dorn, Equitable Life Assurance Society

Panel members attempt to show ways in which technology might be applied to lessen the impact of future problems in the law as it relates to EDP.

Panelists: M. A. Duggan, University of Texas, Austin; R. A. Jacobs, Milgrim Thomajan & Jacobs; H. R. Mayers, St. Onge Mayers & Cahill; J. E. Sammet, IBM Corp; C. C. Jackson, Union Carbide Corp; and M. I. Bernstein, System Development Corp

Session 67 1:30-3:30 Hilton/Murray Hill

Secure Data Systems

Chairman: C. L. Foster, IBM Corp

Panel discussion, with questioning from the audience, is intended to enhance both recognition and understanding of the important problems within the context of data security.

Panelists: P. S. Browne, State Farm Mutual Automobile Insurance Co; J. Clayton, Dept of Defense; C. L. Foster, IBM Corp; R. G. Mills, First National City Bank; C. J. Purcell, Control Data Corp; F. J. Quirk, Univac; and J. W. Weil, Honeywell Inc

Session 70 5:15-6:45 Hilton/West

Graphic Film Festival

Chairmen: J. Potts, Naval Ship Research & Development Center; and R. Allen, Flow Research, Inc

Films show several important scientific examples of research combining computer graphics and the use of movies; each covers a different application of the use of computer graphics to solve research and habitat problems.

Session 71 3:45-5:45 Hilton/Beekman

Satellite Packet Communications

Chairman: L. G. Roberts, Advanced Research Projects Agency

Papers examine techniques for using a satellite in a multiaccess broadcast mode by transmitting addressed data packets from many ground stations, dynamically sharing the capacity of a single, wideband satellite channel.

"Packet Switching with Satellites," N. Abramson, University of Hawaii

"Packet Switching in a Slotted Satellite Channel," L. Kleinrock and S. S. Lam, University of California, Los Angeles

"Dynamic Allocation of Satellite Capacity Through Packet Reservation," L. G. Roberts, Advanced Research Projects Agency

Panelists: D. C. Walden, Bolt, Beranek and Newman, Inc; and E. R. Cacciamani, COMSAT Laboratories

Wednesday Evening

Session 73 8-10 Hilton/West

Graphics in 3D: Sorting and the Hidden Surface Problem

Chairmen: R. Allen, Flow Research, Inc; and J. Potts, Naval Ship Research & Development Center

The final session of "A Day with Graphics," this tutorial will be based on the paper (session title) by I. Sutherland and R. A. Schumacker, Evans and Sutherland Computer Corp; and R. F. Sproull, Stanford University

Thursday Morning

Session 77 8:45-12 Hilton/Grammercy

Storage Systems

Chairman: B. M. Y. Hsiao, IBM Corp

Various aspects of storage systems, including hierarchy and virtual, as well as technology and reliability techniques are dealt with.

"The Design of IBM OS/VS2 Release 2," A. L. Scherr, IBM Corp

"IBM OS/VS1: An Evolutionary System," T. F. Wheeler, Jr, IBM Corp

"Verification of a Virtual Storage Architecture on a Microprogrammed Computer," W. A. Schwomeyer, IBM Corp

"On a Mathematical Model of Magnetic Bubble Logic," E. Yodokawa, Musashino Electrical Communication Laboratory

"The Realization of Symmetric Switching Functions Using Magnetic Bubble Technology," H. Chang, T. C. Chen, and C. Tung, IBM Corp

"The Control Data STAR-100 Paging Station," W. C. Hohn and P. D. Jones, Control Data Corp

Session 84 10:30-12 Americana/Regency

Data Communications via Satellite

Chairman: W. G. Schmidt, COMSAT Laboratories

Under the auspices of the American Institute of Aeronautics and Astronautics, session concentrates on examining the burgeoning area of commercial data commuications by means of satellite-established connections.

"A Survey of Error-Control Techniques Applicable to Satellite Data Transmission," A. Gatfield, COMSAT Laboratories

"International Data Transmission Requirements," M. Fruchter, RCA Global Communications

"Results of a Recent Test of Satellite-Oriented Error Control Systems," D. Matejka, AEG Telefunken

"Fifty KB/S at a Voiceband Tariff," E. Cacciamani, COMSAT Laboratories

Thursday Afternoon

Session 89 1:30-5:45 Hilton/Grammercy

Network Computers: Economic Considerations—Problems and Solution

Chairman: W. J. Barr, Bell Telephone Laboratories

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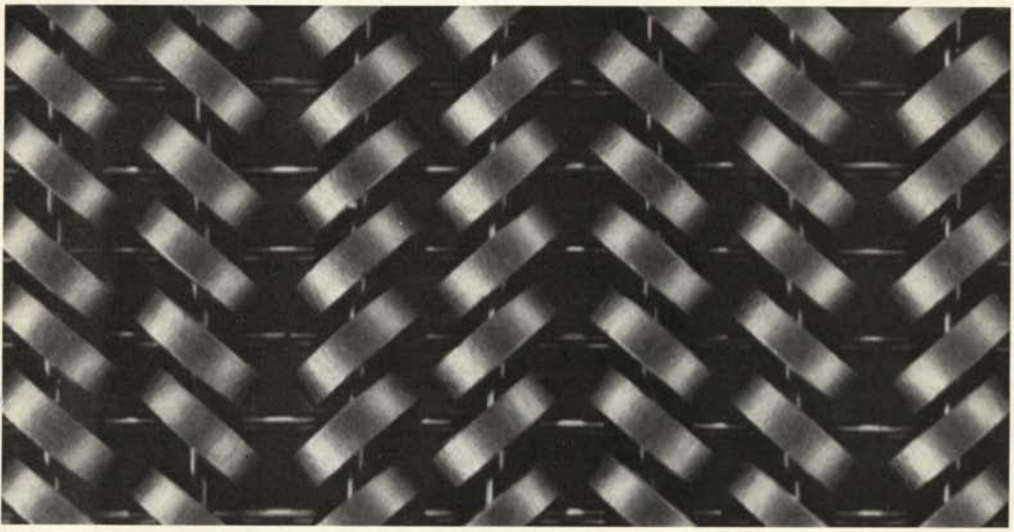

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CIRCLE 39 ON INQUIRY CARD

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Session focuses on the identification and solution of problems which exist in achieving economic viability for network computers.

"SIMULATION: A Tool for Performance Evaluation in Network Computers," E. K. Bowdon, Sr, S. A. Mamrak, and F. R. Salz, University of Illinois, Urbana

"ACCNET—A Corporate Computer Network," M. L. Coleman, ALCOA

"A System of APL Functions to Study Computer Networks," T. D. Friedman, IBM Research

"A High Level Language for Use with Computer Networks," H. Z. Krilloff, University of Illinois at Chicago Circle

"On the Design of a Resource Sharing Executive for the ARPANET," R. H. Thomas, Bolt Beranek and Newman, Inc

"Avoiding Simulation in Simulating Computer Communications Networks," R. M. Van Slyke, W. Chow, and H. Frank, Network Analysis Corp

Panelists: D. Farber, University of California; E. Stefferud, Einer Stefferud and Associates; and G. Sadowski, Urban Institute

Session 96 3:45-5:45 Americana/Regency B

Ingredients of Pattern Recognition

Chairman: R. S. Ledley, Georgetown University Medical Center

Discussions center on a very sophisticated device for input of pictorial data into a digital computer, and on advanced techniques in pattern recognition.

"SPIDAC—Specimen Input to Digital Automatic Computer," R. S. Ledley, H. K. Huang, T. J. Golab, Y. Kulkarni, G. Pence, and L. S. Rotolo, National Biomedical Research Foundation

"A Method for the Easy Storage of Discriminant Polynomials," R. B. Banerji, Case Western Reserve University

"A Non-Associative Arithmetic for Shapes of Channel Networks," M. F. Dacey, Northwestern University

"The Description of Scenes over Time and Space," L. Uhr, University of Wisconsin

Friday Morning

Session 98 8:45-12 Hilton/Sutton North

Virtual Machines

Chairman: U. O. Gagliardi, Harvard University

Session explores architectural implications of past, present, and future virtual machine systems, and reports on a Workshop on Virtual Computer Systems recently held at Harvard University.

"The Evolution of Virtual Machine Architecture," J. P. Buzen and U. O. Gagliardi, Harvard University and Honeywell Information Systems Inc

"An Efficient Virtual Machine Implementation," R. J. Srodawa and L. A. Bates, Wayne State University

"Architecture of Virtual Machines," R. P. Goldberg, Harvard University and Honeywell Information Systems Inc

Panelists: S. E. Madnick, Massachusetts Institute of Technology; and N. L. Rasmussen, IBM Corp

Session 99 8:45-12 Americana/Royal A

What's Different About Tactical Military Computer Systems?

Chairman: J. A. Ward, Naval Ordinance Systems Command

Differences between tactical military systems and commercial systems, in terms of hardware, executive systems, compilers, and operational programs, are pointed out.

"What Is Different About the Hardware in Tactical Military Systems?" E. C. Svendsen, USN (ret); and D. L. Ream, Tactical Data Systems Branch, Naval Ship Engineering Center

"What Is Different About Tactical Military Languages and Compilers?" R. J. Rubey, Logicon, Inc

"What Is Different About Tactical Executive Systems?" W. C. Phillips, RCA Corp

"What Is Different About Tactical Military Operational Programs?" G. G. Chapin, Litton Data Systems

Session 100 8:45-12 Hilton/Madison

Associative Processors

Chairman: P. B. Berra, Syracuse University

This session, which discusses the application of associative processors to such areas as data management systems, attempts to provide enough information on the potential of these devices so that some indication of their worth is obtained.

"An Implementation of a Data Base Management System on an Associative Processor," R. Moulder, Goodyear Aerospace Corp

"Aircraft Conflict Detection in an Associative Processor," H. R. Downs, Systems Control, Inc

"A Data Management System Utilizing an Associate Memory," C. R. DeFiore, Rome Air Development Center; and P. B. Berra, Syracuse University

"Associative Processing Applications to Real-Time Data Management," R. R. Line, L. O. Gates, and T. F. Peng, System Development Corp

Session 101 8:45-12 Americana/Princess

Computer-Based Integrated Design Systems

Chairman: H. M. Ernst, Naval Ship Research and Development Center

Papers demonstrate basic framework that has been produced upon which integrated design systems can be built and operated, and show the first example of such a system.

"The Computer Aided Design Environment Project COMRADE—An Overview," T. Rhodes, Naval Ship Research and Development Center

"Use of COMRADE in Engineering Design," J. Brainin, Naval Ship Research and Development Center

"The COMRADE Executive System," R. Tinker and L. Avrunin, Naval Ship Research and Development Center

"The COMRADE Data Management System," S. Willner, A. Bandurski, W. Gorham, and M. Wallace, Naval Ship Research and Development Center

"PLEX Data Structure for Integrated Ship Design," B. Thomson, Naval Ship Research and Development Center

"COMRADE Data Management System Storage and Retrieval Techniques," A. Bandurski and M. Wallace, Naval Ship Research and Development Center

"The COMRADE Design Administrative System," M. Chernick, Naval Ship Research and Development Center

Panelists: T. Corin and P. Bond, Naval Ship Research and Development Center

Session 102 8:45-12 Hilton/Sutton South

Discrete Algorithms: Applications and Measurement

Chairman: M. M. Krieger, University of California, Los Angeles

Session provides a tutorial sampling of recent advances in applications and analysis of algorithms.

"The File Transmission Problem," P. Weiner, Yale University

"Hypergeometric Group Testing Algorithms," S. Lin and F. K. Hwang, Bell Telephone Laboratories, Inc

"The Efficiency of Algorithms and Machines—A Survey of the Complexity Theoretic Approach," J. Savage, Brown University

"Analysis of Sorting Algorithms," C. L. Liu, University of Illinois, Urbana

"How To Publish Your Algorithm," D. J. Kleitman, Massachusetts Institute of Technology

"The Search for Fast Algorithms," I. Munro, University of Waterloo, Ontario

"Min-Max Relations and Combinatorial Algorithms," W. R. Pulleyblank, IBM Corp

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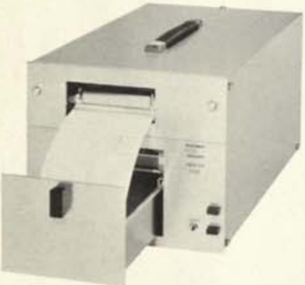
CIRCLE 41 ON INQUIRY CARD



Methods & Applications Program

Monday Afternoon

Session 2 1:30-5:45 Hilton/Grammercy
Voice Answerback Comes of Age

Session 4 1:30-3:30 Hilton/Nassau
Computer Use Around the World

Tuesday Morning

Session 26 10:30-12 Hilton/Morgan
The Impact of Hand-Held Calculators

Tuesday Afternoon

Session 30 1:30-3:30 Hilton/Nassau
Manufacturing Automation

Wednesday Morning

Session 48 8:45-12 Hilton/Sutton North
Computers in Automotive Design and Manufacturing (The Assembly Line Revisited)

Wednesday Afternoon

Session 60 1:30-3:30 Hilton/Sutton North
Off-Vehicle Diagnostics

Session 66 3:45-5:45 Hilton/Sutton South
Development of Generalized Software Products

Thursday Morning

Session 75 8:45-12 Hilton/Trianon
Onboard Computer for Automobiles

Session 76 8:45-10:15 Hilton/Gibson
Data Integrity

Session 83 10:30-12 Hilton/Sutton North
Reliability for Integration into Human Affairs

Thursday Afternoon

Session 88 1:30-5:45 Americana/Royal A
Computers Are for People

Friday Morning

Session 97 8:45-12 Americana/Royal B
Economics and Remote Terminals

Special Program

Tuesday Afternoon

Session 37 1:30-3:30 Hilton/Sutton North
Economic Future of the Data Processing Industry

Thursday Morning

Session 80 8:45-12 Hilton/Clinton
Outlook and Prospects for Marketing Abroad

MAY 1973

Data management for a penny a byte

The corporate datacenter: getting it all together

Making marks where they count with optical systems

Computer Decisions

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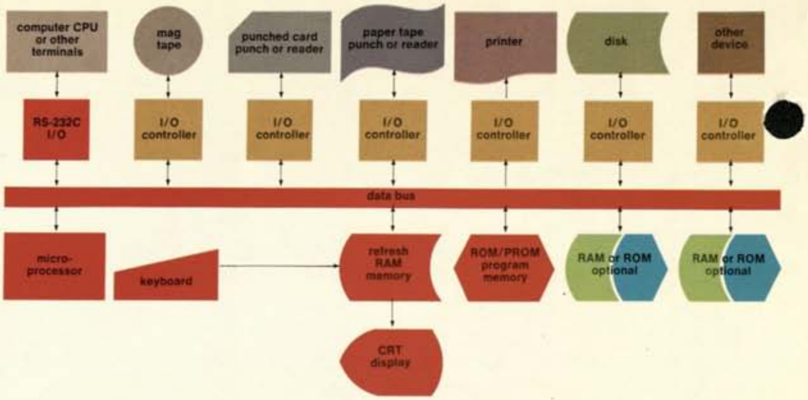
The OMRON 8025 programmable CRT is managed by an MOS micro-processor brain. You design the mix: RAM, PROM and/or ROM. All system activities are directed over an 8 bit data bus.

Totally solid state, the 8025 features: 80 characters per line, 24 lines on a 15″ diagonal display ☐ On line/off line operations ☐ Stand alone or cluster operation ☐ Systems Operations ☐ Programmed logic/editing/control ☐ Selective transmission rates ☐ Selective communications formats ☐ Terminal-buffered data storage ☐ and much, much more as shown in the tables at right.

The basic 8025 system is shown in red. It costs $2350. The rest is up to you.

Model 8025 CRT terminal block diagram



This just may be history's greatest inside job: OMRON SYSTEMS introduces a programmable CRT with variable I.Q.

A guide to the National Computer Conference

Contents

20 **Who'll be there:** the exhibitors
22 **What to hear:** the technical sessions
24 **After the show is over:** dining and wining
26 **What to see:** new developments at the show

Billed as "the biggest computer show on earth," the first National Computer Conference and Exposition (NCC) will be held in New York City, June 4-8. Over 200 exhibitors, including most of the industry's big names, will be filling two floors at the Coliseum in Columbus Circle (Eighth Avenue and 57th Street) and over 100 technical sessions will be held in the Hilton (53rd Street and Avenue of the Americas - better known as 6th Avenue to New Yorkers) and Americana (53rd Street and 7th Avenue) Hotels. Both hotels are within walking distance of the Coliseum, and all are accessible from the 6th Avenue subway (B or D trains). Parking is difficult and expensive around the hotels and the Coliseum, but try the Lincoln Center's underground park and lock garage (enter on 65th Street from Amsterdam Avenue - 10th Avenue - from the West-side Highway exit at 54th Street).

Details on the NCC can be obtained from the American Federation of Information Processing Societies (AFIPS), 210 Summit Avenue, Montvale, NJ 07645. The AFIPS Hot-line for information is 800/631-7070 for those outside New Jersey (in NJ, call 201/391-9810). Full advance registration will cost $60 for non-AFIPS members. Exhibits-only registration at the Coliseum will cost $5 for one day. ☐

NCC exhibitors (and how to find them)

Finding your way around the show should be easy. The exhibition area has been arranged to enable you to locate displays by their booth numbers. All booths numbered 1000-1999 are on the first floor of the Coliseum, those numbered 2000-2999 on the second. As you face the show from the entrance, the aisle on the far left is the "000" aisle, then the "100" and so on up to "800." Walking down each aisle, odd numbers will be on your right, and high numbers are toward the back of the hall. For example, booth number 2135 is on the second floor, second aisle from the left, right side and towards the back of the hall.

Trust-buster to keynote NCC

Senator Philip A. Hart (D., Mich.) will give the keynote address opening the National Computer Conference and Exposition on Monday, June 4, at 10:30 a.m. in the Grand Ballroom of the New York Hilton.

He has been active in developing anti-trust legislation, and is expected to air some of his views on large, dominant corporations such as IBM and ITT. One provision of legislation being studied is the breaking up of any corporation that gains over 15 percent of the market in any particular industry. Senator Hart is also noted for his proposal for an Industrial Reorganization Court.

Exhibitors	Booth No.
Addison-Wesley	1220
American Appraisal	1417
American Can	1725
American Elsevier	2122
Ampex Corporation	2417
The Ansul Company	1414*
Applied Digital Data Systems	2823*
A.T.&T. Company	2327
Auerbach Publishers	2017
Automatic Electronic Systems	2038*
Basic Timesharing, Inc.	2726*
Beehive Terminals	2727*
Benwill Publishing	2126*
The Berton Group, Inc.	1708
British Trade Development	1123*
Burroughs Corp. ECD	2218*
Calcomp	2301
Cambridge Memories	1303
Centronics Data Computer	1211
Codex Corporation	2339*
ComData Corporation	2016
Compu-Serv Network	2709*
COMPUTER DECISIONS	**1100**
Computer Design	2114*
Computer Devices	2724
Computer-Link Corp.	1716
Computer Machinery Corp.	2227
Computer Operations	2124
Computer Optics	1812
Computerworld	1611*
Control Data Corp.	1229
C.P. Clare & Co.	1000*
CPS, Inc.	2001
Cullinane Corp.	2917
Data 100 Corp.	2548*
Data Disc, Inc.	1629*
Data General Corp.	2225
Data Magnetics Corp.	2821
Datamation	2617*
Data Printer Corp.	1514
Data Products Corp.	2325
Datapro Research Corp.	2125*
Dataram Corp.	1418*
Data Test Corp.	2633*
Datum, Inc.	2742*
Decision Data Computer	2719*
Decision Inc.	2715
Diablo Systems, Inc.	2243
Di-An Controls, Inc.	1338
A.B. Dick Company	2136
Digi-Log Systems, Inc.	2813
Digital Computer Controls	2123*
Digital Development Corp.	1410
Digital Equipment Corp.	2501
Documation Inc.	2100*
E. I. du Pont	2110*
EDP News Service	1112
Edutronics Systems Int.	1238
Electronic Eng. Co. of Calif.	1723
Electronic Memories & Magnetics	2400*
Electronic News	2631*
Ex-cell-o Corp.	1501
Exide Power Systems	1423
Fabri-Tek Inc.	1427
Facit-Odhner, Inc.	1623*
Fenwal, Inc.	2007*
Floating Point Systems	1419
General Automation	2201
General DataComm Industries	2827*
Gerber Scientific	1102
Grumman Data Systems Corp.	2101
Hayden Publishing Co.	1001*
Hewlett Packard	2515*
Houston Instrument	2401*
Howard Industries	1727
IBM Corp.	2517*
ICC/Milgo	2115
Identimation Corp.	1412
Imlac Corp.	2822*
IMSL	1635
Inforex, Inc.	2537
Information Data Systems	1116
Information Displays	2812
Infosystems	2131*
Infoton, Inc.	2027*
Intel Corp.	2802*
Interdata, Inc.	2345
Interdyne Co.	2725
International Computer Prod.	1602*
International Data Corp.	2732*
ITT Data Systems	2546
Iomec, Inc.	1219
Kybe Corp.	2020*
Licon-Div. Illinois Tool Works	2106*
Lipps, Inc.	1111
Litton ABS OEM Products	1713*
Lockheed Electronics Co.	2831*
3M Company, Microfilm Div.	1701*
3M Company, Min-Com Div.	2741*
McGraw-Hill Book Co.	2730
Memory Technology	2118*
MFE Computer Access Systems	2819
Microswitch, Div. of Honeywell	1518*
Miratel Div. Ball Brothers	2003*
Modern Data Services, Inc.	1531
Nashua Corp.	1104*
Nixdorf Computer, Inc.	2450*
Northern Telecom, Inc.	1606*
Nortronics Company, Inc.	1311
Odec Computer Systems, Inc.	2867*
Official Directory of Data Proc.	2811
Omron Systems, Inc.	2135
Peripherals General, Inc.	2032*
Pioneer Magnetics, Inc.	2641
The Portland Co.	1524
Powertec, Inc.	2022*
Precision Instrument Co.	2443
Prentice Hall	1609
Prime Computer, Inc.	1113*
Princeton Electronic Products	2637*
Printer Technology, Inc.	1206*
Producers Service Corp.	2919
Quantum Science Corp.	1717*
Randomex, Inc.	2028
Raytheon Service Co.	2006*
RCA Corp.	1119
Recortec, Inc.	1601*
Redactron Corp.	1718*
Rixon, Inc.	1525
Sankyo Seiki (America) Inc.	2921
Scanbe Manufacturing Corp.	1107*
Science Accessories Corp.	1632*
Scientific Time Sharing	1715
Scriptographics Corp.	1120
I.P. Sharp Associates	2701*
Signal Galaxies, Inc.	2625
The Singer Co. Librascope Div.	1724*
Spacesaver Corp.	2627
Standard Logic, Inc.	2820
Standard Memories, Inc.	2407
Storage Technology Corp.	1537*
Sugarman Laboratories	1511
Sycor, Inc.	2601
The Systems Corp.	2735
Tab Products	2042
Tally Corp.	1203*
Tandbergs Radiofabrikk	1234*
Tec, Inc.	1700*
Tektronix, Inc.	2217
Tele-Dynamics, (Ambac)	2828*
Teleprocessing Industries	2117*
Teletype Corp.	2527
Tesdata Systems Corp.	2731
Texas Instruments	2215
Thomson-CSF Electron Tubes	2021*
Timeplex, Inc.	2817*
Topaz Electronics	1313*
Transcom, Inc.	1619
Vermont Research Corp.	1521
Versatec, Inc.	1815*
Vocal Interface Div.	2000*
Wangco, Ind.	2718*
Warren G-V Communications	2623
John Wiley	1212
Xciton	1031

*Company occupies multiple booths at this location.

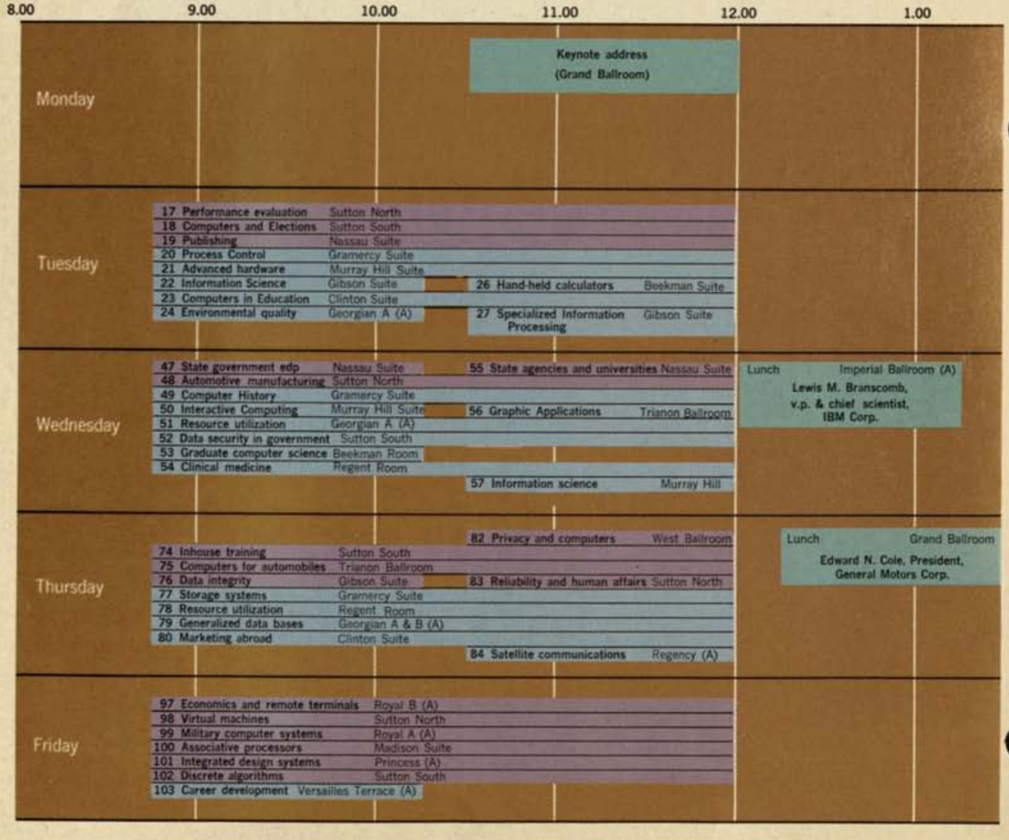
What to hear at the show

It's easy to forget that the National Computer Conference serves as a forum for ideas as well as a show of products and services. In the past, presentations at the conference accurately predicted the direction of the industry, and the astute professional will attend those discussions which may have an impact on his products or purchases. This year's conference presentations are divided into two categories. The Methods and Applications sessions are geared to the needs of the working professional. The content of the papers and panel discussions is generally based on practice in the business or service sectors of the industry. The Science and Technology series of meetings are focussed on developmental work, and reflect the efforts of top research scientists.

We suggest that you consult the complete schedule of speakers (below) and develop a time plan before you get to the show. The technical sessions will be held in the New York Hilton (Avenue of the Americas (6th Ave.) and 53rd Street) and the Americana (7th Avenue and 53rd Street) Hotels, a short six-block walk from the Coliseum. Whatever your special interests, you might want to take a break from examining the equipment of the models on the exhibition floor and catch the following from the Methods and Applications section:

- **Computers in the Congress (29):** If you can think of an organization more desperately in need of modern management techniques and equipment than the Congress, you will probably surprise the speakers at this session. Among the jobs that automation might simplify on Capitol Hill are budget examination, research, and bill status reporting. The chairman is Ernest C. Bayard, formerly Staff Director, US Government Activities Subcommittee. Tuesday, June 5, 1:30-3:30 pm (Hilton).
- **Urban Services (29):** Rand Corp., part of New York City's management brain-trust, has applied technology to several of the organizational and service aspects of city government. The discussion deals with real problems and real solutions, in and out of the Big Apple. Chairing the session is Dr. Edward Blum, Vice President of the NYC-Rand Institute. Wednesday, June 6, 1:30-3:30 and 3:45-5:45 pm (Hilton).
- **Simulation of International Relations (69):** The games played by the Pentagon and other agencies are deadly serious. Gaming with automated models is a growing aspect of peacekeeping and defense organizations. The panel is led by Lt. Col. George L. Draper, of the Joint Chiefs of Staff. Wednesday, June 6, 3:45-5:45 pm (Hilton).
- **Regulation of the Computer/Communication Industry (1):** This panel discussion promises to be lively.

The conference at a glance



Monday

Keynote address
(Grand Ballroom)

Tuesday

17 Performance evaluation Sutton North
18 Computers and Elections Sutton South
19 Publishing Nassau Suite
20 Process Control Gramercy Suite
21 Advanced hardware Murray Hill Suite
22 Information Science Gibson Suite
23 Computers in Education Clinton Suite
24 Environmental quality Georgian A (A)
26 Hand-held calculators Beekman Suite
27 Specialized Information Processing Gibson Suite

Wednesday

47 State government edp Nassau Suite
48 Automotive manufacturing Sutton North
49 Computer History Gramercy Suite
50 Interactive Computing Murray Hill Suite
51 Resource utilization Georgian A (A)
52 Data security in government Sutton South
53 Graduate computer science Beekman Room
54 Clinical medicine Regent Room
55 State agencies and universities Nassau Suite
56 Graphic Applications Trianon Ballroom
57 Information science Murray Hill

Lunch Imperial Ballroom (A)
Lewis M. Branscomb,
v.p. & chief scientist,
IBM Corp.

Thursday

82 Privacy and computers West Ballroom
74 Inhouse training Sutton South
75 Computers for automobiles Trianon Ballroom
76 Data integrity Gibson Suite
83 Reliability and human affairs Sutton North
77 Storage systems Gramercy Suite
78 Resource utilization Regent Room
79 Generalized data bases Georgian A & B (A)
80 Marketing abroad Clinton Suite
84 Satellite communications Regency (A)

Lunch Grand Ballroom
Edward N. Cole, President,
General Motors Corp.

Friday

97 Economics and remote terminals Royal B (A)
98 Virtual machines Sutton North
99 Military computer systems Royal A (A)
100 Associative processors Madison Suite
101 Integrated design systems Princess (A)
102 Discrete algorithms Sutton South
103 Career development Versailles Terrace (A)

The legal questions raised, and perhaps answered, are important to all users involved in tele-processing. Chairman is Robert P. Bigelow, Esq. Monday, June 4, 1:30-3:30 pm (Hilton).

• **Four Major Reports on Privacy and Computers (82):** Those of you concerned about privacy, and our computer knows who you are, might benefit from the assessments offered by The Younger Report (English), The Canadian Report, the National Academy of Sciences Report, and the HEW Report. The session was organized by and will be chaired by John Gosden, Vice President of Equitable Life. Wednesday, June 7, 10:00-12:00 noon, (Hilton).

On the more technological side, several of the presentations reflect markets opening up through reduced costs of components and increased development of computer applications techniques. Other presentations field concepts which may lead to better products. Here are some of the science and technology sessions that promise to be of outstanding interest or value:

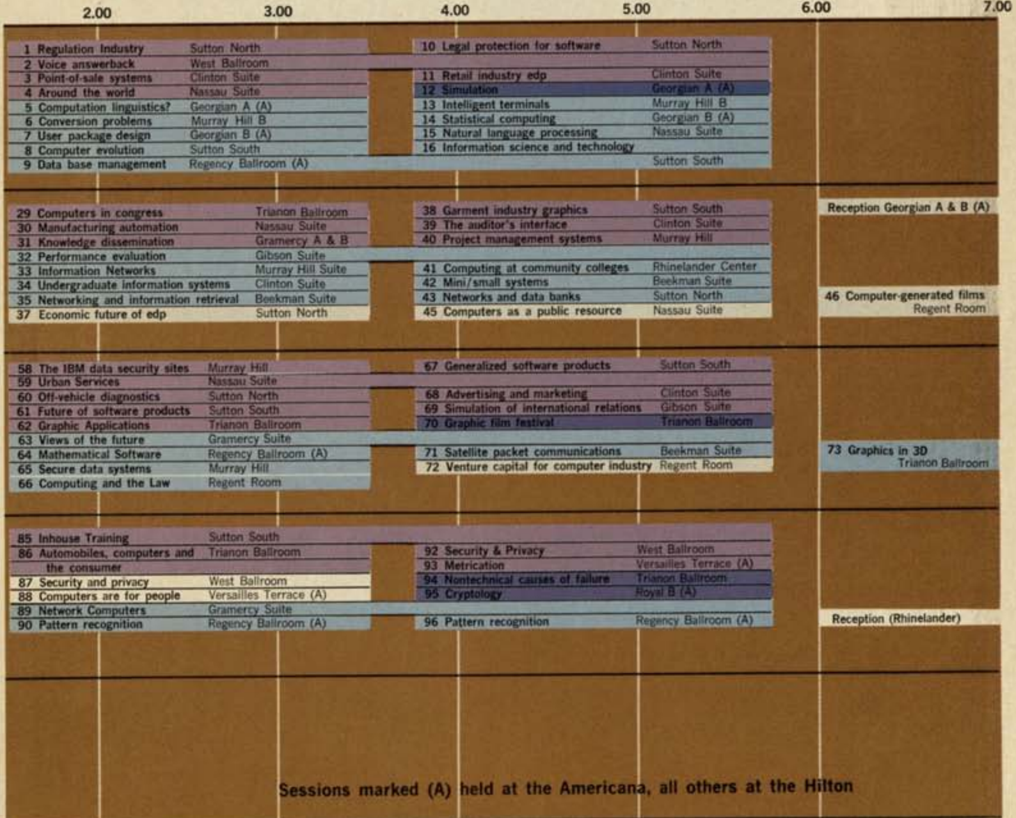
• **Intelligent terminals (13):** This presentation will focus on the variety of intelligent terminals, ranging in ability from the point-of-sale terminal at the low end, through text editing terminals up to interactive graphics terminals. One of the problems most difficult to solve in the assembly of a terminal oriented computing system is the amount of computation which should be factored out of the central computer to the terminal. At some level of computational power, the terminal may itself be able to control several keyboard-display systems. Ira Cotton, of the National Bureau of Standards, leads this session. The participants are all first-rate. Monday, June 4, 3:45-5:45 pm (Hilton).

• **Resource Utilization in the Computer Community (51):** The use of both human and systems resources in the trade is not nearly as efficient as it might be. The problems are interrelated, and the participants' suggestions have bearing on computer professionalism. Led by Herbert S. Bright, of Computation Planning, Inc. Scheduled for Wednesday, June 6, from 8:45-12:00 noon, (Americana).

• **The growing potential of mini/small systems (42):** New techniques and applications of small computers are the subject of this discussion. One focus of the participants will be the growing customization of small machines, particularly through microcoding. The organizer and chairman of the session is Douglas McKay of IBM Atlanta. Tuesday, June 5, from 3.45-6:15 pm (Hilton).

• **Virtual Machines (98):** Dr. Ugo Gagliardi of Harvard University examines the meaning and portent of virtual computing systems. With Gagliardi will be Stuart Madnick of MIT. Friday, June 8, from 8:45-12:00 noon, (Hilton).

• **Data Security in Government (52):** Problems of data and program protection will always be with us. In the future, some good solutions may accompany them. The panel will include persons from GAO, the Treasury, NSA, CIA, NBS, AEC, DOD, and IBM, etc. Wednesday, June 6, from 8:45-10:00 am (Hilton).



2.00 3.00 4.00 5.00 6.00 7.00

1 Regulation Industry	Sutton North	10 Legal protection for software	Sutton North		
2 Voice answerback	West Ballroom				
3 Point-of-sale systems	Clinton Suite	11 Retail industry edp	Clinton Suite		
4 Around the world	Nassau Suite	12 Simulation	Georgian A (A)		
5 Computation linguistics?	Georgian A (A)	13 Intelligent terminals	Murray Hill B		
6 Conversion problems	Murray Hill B	14 Statistical computing	Georgian B (A)		
7 User package design	Georgian B (A)	15 Natural language processing	Nassau Suite		
8 Computer evolution	Sutton South	16 Information science and technology			
9 Data base management	Regency Ballroom (A)		Sutton South		
29 Computers in congress	Trianon Ballroom	38 Garment industry graphics	Sutton South	Reception Georgian A & B (A)	
30 Manufacturing automation	Nassau Suite	39 The auditor's interface	Clinton Suite		
31 Knowledge dissemination	Gramercy A & B	40 Project management systems	Murray Hill		
32 Performance evaluation	Gibson Suite				
33 Information Networks	Murray Hill Suite	41 Computing at community colleges	Rhinelander Center		
34 Undergraduate information systems	Clinton Suite	42 Mini/small systems	Beekman Suite		
35 Networking and information retrieval	Beekman Suite	43 Networks and data banks	Sutton North	46 Computer-generated films	Regent Room
37 Economic future of edp	Sutton North	45 Computers as a public resource	Nassau Suite		
58 The IBM data security sites	Murray Hill	67 Generalized software products	Sutton South		
59 Urban Services	Nassau Suite				
60 Off-vehicle diagnostics	Sutton North	68 Advertising and marketing	Clinton Suite		
61 Future of software products	Sutton South	69 Simulation of international relations	Gibson Suite		
62 Graphic Applications	Trianon Ballroom	70 Graphic film festival	Trianon Ballroom		
63 Views of the future	Gramercy Suite				
64 Mathematical Software	Regency Ballroom (A)	71 Satellite packet communications	Beekman Suite	73 Graphics in 3D	Trianon Ballroom
65 Secure data systems	Murray Hill	72 Venture capital for computer industry	Regent Room		
66 Computing and the Law	Regent Room				
85 Inhouse Training	Sutton South				
86 Automobiles, computers and the consumer	Trianon Ballroom	92 Security & Privacy	West Ballroom		
		93 Metrication	Versailles Terrace (A)		
87 Security and privacy	West Ballroom	94 Nontechnical causes of failure	Trianon Ballroom		
88 Computers are for people	Versailles Terrace (A)	95 Cryptology	Royal B (A)		
89 Network Computers	Gramercy Suite				
90 Pattern recognition	Regency Ballroom (A)	96 Pattern recognition	Regency Ballroom (A)	Reception (Rhinelander)	

Sessions marked (A) held at the Americana, all others at the Hilton

Dining out, sitting in, getting around

New York offers many more restaurants, night spots, museums, theatres, and interesting sights than you will be able to take in during the convention. One of the remarkable things about the city is the presence of worthwhile attractions in nearly every neighborhood. You can plan your entertainment to advantage by orienting yourself toward the various neighborhoods in the city, and, in the process, exchange travel time for a more leisurely dinner or some cabaret relaxation.

New York will no doubt prove pleasant, but in the event you find yourself a stranger in the face of some mishap, assistance is available to you via telephone. Police and ambulance service my be gotten by dialing 911, a number which works without money at most telephone booths. Emergency medical service is TR9-1000, dental service is YU8-6110. Conditions around you may be monitored by dialing WE6-1212 for a weather report, ME7-1212 for time, 999-1234 for traffic conditions. In the event you need to leave children in your room, the Baby Sitter's Guild is MO1-2760. Other service numbers may be obtained through the hotel or motel where you are staying.

Tours of the city and its sights are available from the Statue of Liberty ferry at 269-5755, Time Square Tours at 246-5550, Manhattan Sightseeing at 245-6641, Harlem Tours at 247-2860, and the Gray Line at 765-1600. If you want to fly around, you should dial 695-0520 for helicopter tours. In addition, free events will be happening in parks, museums, and streets all the time. You may dial 472-1003 from ten until six for briefing on city-sponsored events.

Restaurants

New York can offer the best food at the lowest prices and the worst food at the highest prices of any city in the world. It's better to check with a friend or a competent guide before you take a chance on a dining spot. In New York, you should be able to get a memorable meal three times a day. Enjoy.

Benihana of Tokyo — Japanese steak house. 120 E. 56th St. LT 1-0930, 15 W 144th St. 682-7120, 61 W 56th St. LT 1-0931.

Brasserie — French, open late. 100 E. 53rd St. 751-4840.

The Brass Rail — Steaks 'n stuff. 49th St. & 7th Ave. PL 7-6070.

The Cattleman — Steak & lobster. 5 E. 45th St. 661-1200.

Charlie Brown's Ale & Chop House — English fare. Pan Am Bldg. 661-2520.

Chateau Richelieu — French cuisine, 48 E. 52nd St. 751-6565.

Chez Vito — Continental food and entertainment. 36 E. 60th St., 755-2025.

Colony — Posh posh dining. 30 East 61st St. TE8-6660.

Dallas Cowboy — Steaks, American style. 60 E. 49th St. 697-2500.

Dardenelles Armenian Restaurant — Lamb is featured. 86 Universtiy Pl. CH 2-8990.

Ferdi's — Italo-American. 765 United Nations Plaza. 532-4946.

Four Seasons — Well-known. 99 E. 52nd St. 751-4300.

The French Shack — Moderate prices, good lunch. 65 W. 55th St. CI 6-5126.

The Ginger Man — English pub style. 51 W. 64th St. SC 4-7272.

Hawaii-Kai Restaurant — Polynesian specialties. 1638 Bdway. PL 7-0900.

Inn of the Clock — Continental, Americanized. 866 United Nations Plaza (on 48th St.) 752-0424.

Jimmy Weston's — American food. 131 E. 54th St. 838-8384.

La Chansonnette — French, with entertainment. 890 Second Ave., 752-7320.

Le Pont Neuf — French specialties. 212 E. 53rd St. 751-0373.

Rincon DeEspana — Charming village spot. 266 Thompson St. 475-9891.

Sign of the Dove — Continental, Italian. 1110 3rd Ave., 861-8080.

Spanish Pavilion — Lunch & dinner. 475 Park Ave., 421-5690.

Swiss Center — Interesting menu. 4 W. 49th St.

Tanpopo — Japanese restaurant. 139 E. 52nd St. 935-9241.

Tavern-On-The-Green — American. W. 67th & Central Park. 837-3200.

Teheran — Persian menu. 45 W. 44th St. 682-6588.

Toledo — Spanish fare. 66 W. 55th St. 581-0464.

Top of the Six's — Good view, anyway. 666 5th Ave., 765-1666

Venus Continental Restaurant — Romantic. 117 W. 58th St. 765-1427.

Night clubs

The city has clubs in the better hotels as well as cabarets. Nearly all of the night clubs advertise, so most any good paper or city magazine can fill you in on the starring attractions.

Cabarets:

Chateau Madrid — Lexington at 48th. Sophisticated Latin spot. Two orchestras for dancing (PL 2-8080).

Chez Vito — 36 E 60th. Red-velvet candle-lit supper club. Continental cuisine. Closed Sun (PL 5-2025).

Copacabana — 10 E 60th. An institution. Closed Mondays (PL 8-1060).

Dangerfield's — 1st Ave at 61st. Intimate and irreverant. Closed Sundays (593-1650).

Downstairs at the Upstairs — 37 W 56th. Hip revue. (JU 2-1244).

Hawaii Kai — Bdway at 50th. Polynesian palace. (PL 7-0900).

Jimmy's — W 52nd, nr 6th. Press, political, theatrical crowd. (757-8484).

Pembles — 330 E 56th btw 1st & 2nd Aves. Dancing nightly. (688-6945).

Rainbow Grill — 30 Rockefeller Plaza. Great views, brews and blues. (PL 7-8970).

Reno Sweeney — 126 W 13th. Like a forties supper club. Closed Sun. (CH 2-1366).

Hotel night spots:

Carlyle, Madison Ave at 76th (RH 4-1600) has the **Cafe Carlyle.**

Drake, Park Ave at 56th (HA 1-0900) has **Shepheard's.**

Pierre, 61st St at 5th (838-8000) offers the **Cafe Pierre** and **La Foret.**

Plaza, 5th Ave & 59th (PL 9-3000) with the **Green Tulip,** and especially **The Persian Room.**

St. Regis-Sheraton, 5th Ave & 55th St (PL 3-4500) with the **St. Regis Room** and **Maisonette.**

Waldorf-Astoria, 301 Park Ave. nr 50th (355-3000) features the **Empire Room.**

Theatre

It's rather difficult to predict those plays which will definitely be running during the show, but those listed have been successful, and will probably continue to draw crowds. As with museums, please consult current periodicals (try *New York* magazine) for an up-to-the minute listing of showtimes and ticket information.

Little Night Music — Musical based on Bergman's film *Smiles of a Summer Night,* with Glynis Johns, Len Cariou, Hermione Gingold. Shubert, 225 W 44th (246-5990).

Don't Bother Me, I Can't Cope — Musical starring Alex Bradford, Hope Clarke, Bobby Hill, Arnold Wilkerson

call for papers

1973 national computer conference & exposition

The First National Computer Conference and Exposition will be held in the New York Coliseum June 4-8, 1973. It ushers in a new conference concept with the objective of bringing together at one time and in one place all of the interests of the computing community on a once a year basis. The conference program will serve the technologist, the end-user, and various levels of business management by providing forums for the exposition of problems, requirements, theory, and solutions in both the application and technology of information processing. Contributions from all levels of the information processing community are solicited so that meaningful exchanges of information will occur. Consistent with general conference objectives, the program emphasizes both Science and Technology and Methods and Applications.

1 The Science and Technology Program

The entire spectrum of information processing systems technology will be critically examined from the viewpoints of the AFIPS Constituent Societies. In this program we are looking for new horizons and new opportunities. Prospective authors are invited to submit technical or survey papers of a theoretical or technological nature. Broadly speaking, we are interested in significant contributions dealing with the following subjects:

a. Hardware, including logic, components, design, and development; technology of processors, peripherals, terminals, and communication devices; micro-programming and systems architecture.
b. Software, including operating systems, programming languages or techniques, data structures, data base design, documentation, and program certifications.
c. Foundations of the computer sciences, including switching theory, information theory, metamathematics, automata theory, and artificial intelligence.
d. Solutions to technical problems arising in administration, business, education, engineering, medicine, etc.
e. New issues, including data security, cryptography, program validation, performance evaluation, computer and data-sharing networks.

AFIPS will make two awards for the best papers given during this conference in the categories of general interest and specialized contribution.

2 The Methods and Applications Program

In this program, the entire spectrum of information processing will be critically examined from the viewpoints of the end-users and the groups and societies that represent their interests. Particular attention will be given to contemporary topics of interest to the user including user requirements and problems. Also, we wish to continue and strengthen the vital dialogue that has been initiated between end-users and suppliers of technology.

Prospective authors are invited to participate by submitting papers on the use of information processing systems in the conduct of major human activities. We are interested in significant contributions dealing with the following subjects:

a. Applications specific to such fields as architecture, communications, earth resources management, education, design and production engineering, finance, government (all levels), health and medicine, manufacturing and distribution industries, automotive and petrochemical industries, energy industry, law, management, printing, transportation, etc.
b. The social impact of increasing integration of information processing into human activities, i.e., data banks, wired cities, and the monetary system.
c. Methods whereby access to information processing technology is improved for the user, e.g., documentation, customizing, self-teaching systems.
d. Solutions to or definition of existing and anticipated managerial problems of the end-user.
e. Definition and solution of problems peculiar to the end-user.

Instructions to Authors

New hitherto unpublished papers are hereby solicited; their total length should not exceed 5000 words; each paper must include an abstract, not to exceed 200 words; a full set of illustrations keyed to the text; and an appropriate set of keywords or KWIC index terms. Materials such as equations, figures, or reference listings should be counted as 300 words per manuscript page. Any necessary approvals for publication must be obtained by the author(s) before submission.

Manuscripts must be cleanly typed and double spaced, one side of the paper only. On the cover-sheet must be given: Full name of author(s) with co-author(s) in the desired order; company, university or other professional affiliation of each author; name, address (with Zip code), and telephone number (with area code) of the responsible author. Page numbers and the responsible author's last name must be shown on all subsequent pages.

Six copies of the manuscript, each complete with cover page, abstract, index terms, and illustrations (all of which will be retained) must be submitted to the chairman in whose program the author wishes to participate before February 1, 1973. In advance of this date, prospective authors are requested to submit an abstract and a statement of intent to contribute a paper, before December 31, 1972. Authors will be notified before February 15, 1973 about the disposition of their papers. The conference proceedings editors reserve the right to edit all submitted papers prior to publication or to request that the authors edit them to meet publication requirements.

Deadline for submission of advance abstracts: December 31, 1972. Deadline for submission of complete papers: February 1, 1973.

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General Chairman

Dr. Carl Hammer
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2121 Wisconsin Avenue, NW
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Telephone: (202) 338-4958

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The Moore School of Electrical Engineering
HARVEY L. GARNER, *Director*

HOME 215-687-1627
215-594-8103 (594-6936)

September 21, 1972

Dr. Robert Bemer
Honeywell Corporation
P. O. Box 6000
Phoenix, Arizona 85005

Dear Bob:

As you are no doubt aware, the AFIPS Board has abolished the Joint Computer Conference and has decided to hold one annual conference to be known as the National Computer Conference. The first National Computer Conference will be held in New York City the week of June 4 through the 8. I have agreed to serve as General Chairman of this conference.

There has been a considerable amount of discussion concerning the program for the National Computer Conference. The proposed program has been divided into three parts:

1. Technical Program. This program is very close to the traditional Joint Computer Conference program. It should be very attractive to members of the ACM, Computer Society and the Simulation Council.

2. Applications Program. This program should be tailored to the end user. As such, it is hoped that this program would attract professionals who have not, in the past, attended the Joint Computer Conferences. This program is an outgrowth of the vertical adjunct concept which is being tried for the first time at the 72 Fall Joint Computer Conference.

MGMT BRIEFINGS

3. Special Programs. These are special programs tailored to the needs of special interest groups such as the Commerce Department and computer manufacturers. Such activities have been conducted in the past on a limited basis and no substantial increase in these activities is proposed at the present time, though this is a topic for future discussion and decision.

Almost unlimited space is available in New York City. We have the Coliseum, the Americana, and the Hilton. The conference will be a four day conference scheduled over five days. It is expected that the technical programs will consist of four parallel sessions. The applications program is yet to be defined in detail and selection of areas of application is still to be made. However, it is expected that the program in this area will require four to eight parallel sessions.

914-945-1953
H -769-9023

Charlie Freiman of IBM is serving as Vice-Chairman. There will be two program co-chairmen. One is the technical program co-chairman and one is the applications program co-chairman. Carl Hammer of Univac has agreed to organize the technical program. I can think of no one in the country who is better qualified than you are to head the applications program committee. Your experience with ACM '70 would be invaluable.

I hope that you will be able to accept this invitation to serve as program co-chairman in charge of the applications program. I am, incidently, trying to maintain balance among the major computer manufacturers on the Steering Committee. I think it would be desirable to have a representative from Honeywell.

The terminology used to describe the various parts of the program is not as yet firm and is subject to change. I hope that we can firm this up at our next committee meeting.

AFIPS has studied the concepts of the National Computer Conference and they believe that a properly organized program which will have appeal to both the designers and end users might well attract 25,000 attendees. They have also received indications that a number of main frame manufacturers absent from previous Joint Computer Conferences will exhibit at the NCC.

I hope all of their predictions are realized and I am sure that your contributions would help us organize a program needed to achieve the AFIPS objectives.

If you have any questions, please do not hesitate to call me. My telephone number is (215) 594-8103. I hope to hear from you in the near future.

Best regards,

Harvey

Harvey L. Garner
Professor and Director

HLG:ems

IBM

International Business Machines Corporation

1000 Westchester Avenue
White Plains, New York 10604
914/696-1900

November 1, 1972

Mr. Robert Bemer
Honeywell Corporation
P. O. Box 6000
Phoenix, Arizona 80005

Dear Bob:

Your preliminary attack on the "Applications and Methods" segment of the National Computer Conference is outstanding and I congratulate you on the prodigious efforts it has already set in motion. They are particularly heartening to a member of the AFIPS industry advisory panel who has been pushing hard for the concept of an NCC with multiple audience appeal.

I also want to suggest that you get in touch with Dr. William Koch, director of the American Institute of Physics, for participation in the "Publishing and Knowledge Dissemination" panel you have noted as a possible. The AIP, which publishes about a third of the world's basic physics literature, has been working on providing new and more timely physics information services through computer-oriented methodologies and photocomposition approaches to publication.

I am sure Bill Koch would be interested in exploring with you (or the other people you cited) participation in such a panel. You can reach him at 212 Mu 5-1940 or write him at American Institute of Physics, 335 East 45th Street, New York, New York.

For your background, I am enclosing a summary of the AIP's activities. I obtained it through the good offices of my wife, who is a physicist at the Institute with responsibilities in this area.

Lots of luck and I'll see you at Anaheim.

Cordially,

Arnold Lerner

Arnold Lerner

AL:eb
Attachment
cc: Dr. William Koch
Dr. R. G. Lerner

DATAMATION®
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The Magazine of Automatic Information Handling

October 17, 1972

HELP HURRY HELP HURRY HELP HURRY HELP HURRY HURRY HURRY HELP

To: All IAP members

From: Robert B. Forest

Learned today that Bob Bemer has been appointed to head up the "Applications and Methods" segment of the program for the first National Computer Conference. Carl Hammer will worry about "Technology and Science." Bob is a bright and dedicated and sensible man, as is evident from the fact that he has called me to ask the IAP's help and advice in forming his program.

In only a week or so on the job, Bob has already identified a large number of special vertical-industry-oriented session topics, and identified exhibit tie-ins for many. He'll be sending me a list of those topics, and I'll forward them to you and keep you posted on conference program progress as it unfolds to me.

In the meantime, Bob wants us to identify topics for sessions or papers that would be of interest to people at the installation manager level, as well as to that large, unwashed segment of the market that has been identified variously as "DPMA types," small-to-medium-scale users, or as plain, old unsophisticated users of systems ranging from System/3 (and equivalent) on up through Model 20 (and equivalent) users.

Don't be afraid of suggesting topics that will help sell concepts that will make it easier for you to sell your wares.

Bob is working to define a "skelton program" by October 26, so I urge you to call him next week and offer to him any ideas or contacts or sources of ideas that may help him in his job. I've known Bob personally for a long time, and I know we can count on his energetic cooperation in helping to develop a National Conference program with the breadth and the depth that Arnold Lerner envisioned and that we so heartily endorsed.

……………

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from L.A. (213) 681-8486

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61 Renato Court
(415) 364-3171

Don't mess up on this first chance to positively influence the program for the first NCC. Bob's phone number in Phoenix: Work - (602) 993-2569
Home - (602) 942-4198
" 942-1360

Signed urgently,

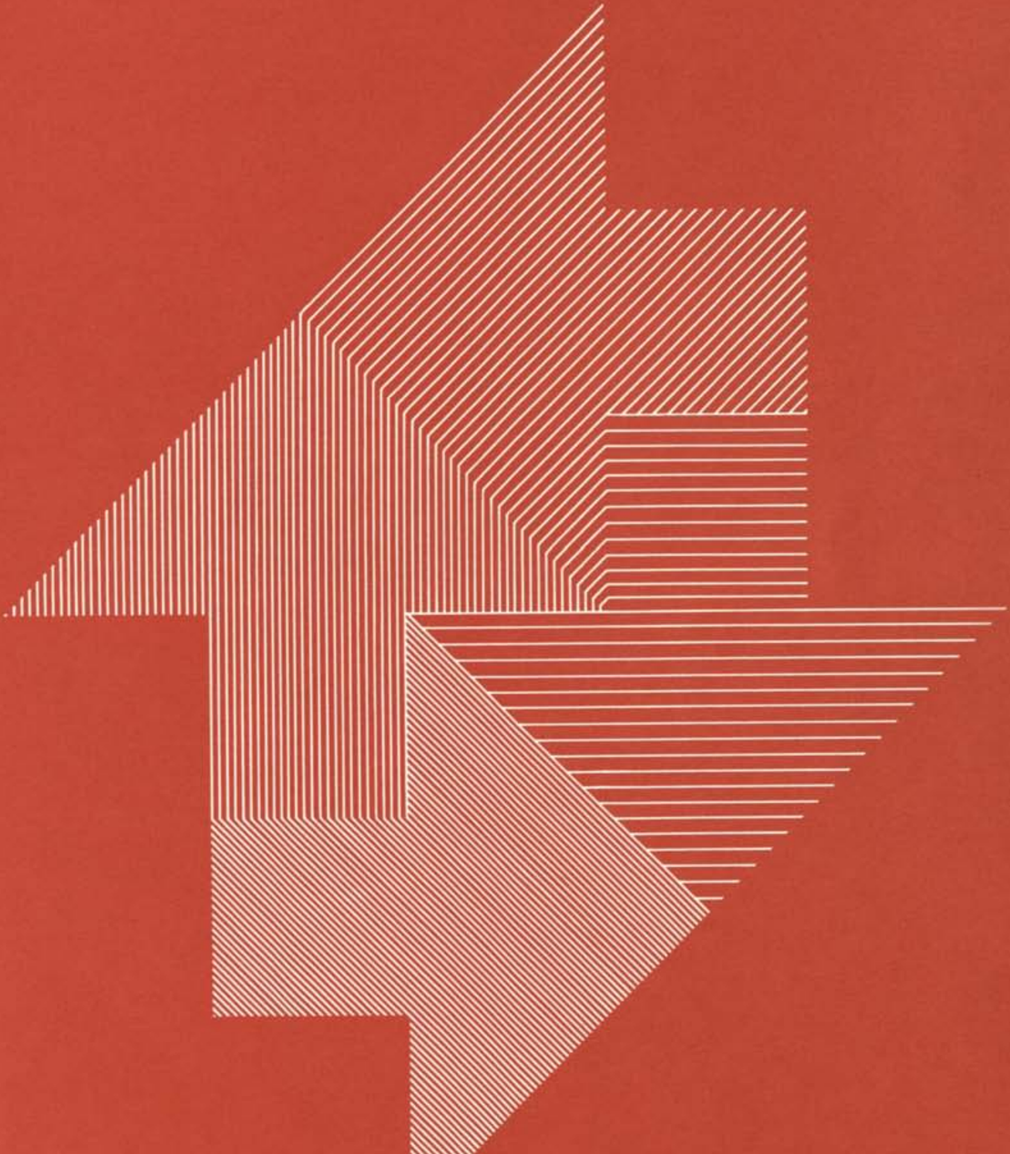
Bob Forest

RBF:ao

P.S. I have told Wally Anderson and Bruce Gilchrist that IAP stands by, ready to help them, too, and we patiently await their signal.

cc: Bob Bemer, Jerry Koory, Tom White, Bruce Gilchrist, Wally Anderson

P.S. Been told they have sold 392 booths for FJCC; 18-20 short of a sellout. only mainframers: Xerox, DEC, H-P.



On June 4, 1973 a totally new concept in conferences will open in the New York Coliseum…The 1973 National Computer Conference & Exposition. The '73 NCC will be the first national conference to focus on the total spectrum of computer technology, its application, emerging uses and its impact on user industries, the U.S. economy and the life of the individual citizen.

A decision to participate in the '73 NCC could be the most important marketing decision you make this year. No other mechanism offers you the most cost effective opportunity to reach the industry's most important purchasing influences on a face-to-face basis, at one time, in one place…

- To demonstrate your products.
- To hear and answer competitive comparisons.
- To increase consumer confidence in your products.
- To improve or protect your current market position.

As a '73 NCC exhibitor, you will demonstrate your products and services to the world's largest gathering of computer specialists, user industry representatives, management personnel, administrators, educators and government officials. An estimated 30,000 action-minded computer users and prospects—and 300 exhibiting organizations from the U.S. and abroad—will be at the '73 NCC. Most attendees will be there specifically to evaluate your products and services, and those of your competitors.

The New conference concept

The National Computer Conference & Exposition represents a significant departure from previous meetings held in the computer field. Earlier conferences focused on either computer technology or on its application in certain specified industries or businesses.

In contrast, the '73 NCC marks a total commitment on the part of AFIPS to pool its resources in creating a major forum for the entire data processing community. A forum aimed at fostering a critically needed dialogue among those directly involved in the computer field, EDP users, government and the general public.

To accomplish these objectives, three major steps were found to be necessary: an expansion of promotional activities to generate attendance from within major user industries; the selection of a conference site accessible to the widest possible audience; and a restructuring and expansion of the conference program to serve the wide variety of interests of the entire data processing community.

Overall planning and implementation of the conference and its associated exposition will be under the direction of Conference General Chairman, Dr. Harvey L. Garner. Dr. Garner is Director and Professor of the Moore School of Electrical Engineering at the University of Pennsylvania.

Expanded promotion campaign

Attendance promotion activities for the 1973 National Computer Conference are being planned on a scale unprecedented in the past. As a start, the widely expanded conference program opens new avenues in the areas of interested attendees, media possibilities, and promotion vehicles. Further, implementation of new concepts in the structure of conference management will enable a full-time professional communications staff to devote maximum effort to this critical area of conference promotion.

Current plans call for:
- direct mail solicitation to over 100,000 EDP professionals and user industry representatives
- a program of basic publicity on all aspects of the NCC to trade publications, business press and mass media
- a concentrated advertising campaign commencing in early '73 and continuing until the conference opens
- face-to-face meetings with key user industry representatives to disseminate the maximum amount of conference information to the widest possible audience
- expanded activities to obtain exhibitor participation in attendance promotion

All of these efforts will be directed not only to members of professional societies, but also to key management in those industries representing your most important customers.

Conference site

New York has been called the corporate headquarters of the world and, as such, is the hub of U.S. commercial activity. For example, 273 of the 1,000 largest U.S. industrial corporations have their home offices in the New York area. Of the 33,000 leading corporations in the U.S. listed in Standard & Poor's register, 4,500 are located in the New York area.

Considering population statistics alone, New York's location in the heart of the Boston to Washington megalopolis makes the '73 NCC the best bet for reaching the widest possible range of computer professionals, EDP users and other key purchasing influences. Such as:
- the nation's largest user industry organizations
- the world's top security analysts
- the most influential business editors in the country.

30,000 of these people coming together for the '73 NCC create a purchasing potential which will have significant impact on your organization's marketing plans, corporate image and future growth.

Add to all this the ease of accessibility to New York and the excitement and vast range of activities offered by the Nation's largest city, and it's clear why New York was the prime choice for the site of the first National Computer Conference.

Conference program

The '73 NCC will feature the most comprehensive program ever assembled. More than 100 sessions, seminars, presentations and featured events are planned in three basic areas—Science and Technology, Methods and Applications, and the broad area of "The Computer and Its World." Each segment is headed by a recognized national authority who has, in turn, enlisted the active participation of key professionals within the computer field and user organizations.

Dr. Carl Hammer, Director of Computer Sciences, Univac, will head the Science and Technology program. In this area, approximately 38 sessions are planned covering hardware, software, foundations of computer science, solutions to problems arising in key user areas, and "new issues" including topics ranging from data security and program validation to performance evaluation and data sharing networks. Science and Technology will be examined both from the standpoint of the technologist and the user. Accordingly, each of AFIPS's thirteen constituent societies will be represented in the program in areas ranging from sophisticated hardware, software and information science through such user areas as education, accounting, and the engineering disciplines.

The Methods and Applications program will be directed by Robert Bemer, Staff Consultant to the Vice President, Honeywell Information Systems. Dialogue and interaction will be the key elements for approximately 38 sessions designed to examine information processing technology, and user managerial problems, and the definition and solution to problems peculiar to specific end user areas.

The third segment of the program, will encompass a variety of special presentations and seminars covering a broad range of topics including the computer export market, economic forecasting of EDP applications and growth, and a discourse on sharing EDP technology with other nations.

In addition, the total conference program will feature a number of public service programs, featured addresses, special events, and related activities designed to promote an across-the-board dialogue in the public interest.

Professional exhibit services

Exhibitor liaison and supporting services are a full-time responsibility of the AFIPS Exhibit Sales Staff. They can assist you by providing additional information on the '73 NCC and its exhibit program, and are prepared to work with you on the solution of specific problems which you may encounter. In addition, several added services are available. These include: packaged booth displays, registration mailing lists, promotional material, special exhibits-only registration, and complimentary exhibit guest tickets.

Complete information on all exhibitor services may be obtained by contacting the Exhibit Sales Office at AFIPS Headquarters, (201) 391-9810.

Select & reserve your booth space Now!

Look at the enclosed floor plans and select your preferred location now while the chances of getting the space you want are high. Exhibit space for the '73 NCC will be allocated on a first-come, first-serve basis. We urge you to act promptly to assure the availability of the space you need to exhibit your products to this interested audience.

Return your application form and deposit today to:
1973 NCC Exhibit Program
AFIPS
210 Summit Avenue
Montvale, New Jersey 07645

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15 June 1973

Mr.R.W.Bemer
Honeywell Information Systems
P.O.Box 6000
Phoenix, Arizona 85005

Dear Bob:

The 1973 NCC program was terribly impressive.

Only the Bemer energy and commitment could have accomplished it. I am very impressed!

Sincerely,

Keith

Keith W.Uncapher
Director

1973 National Computer Conference & Exposition

June 4-8
New York Coliseum

News

For Immediate Release

Contact: T. C. White
201/391-9810

BOB BEMER WILL HEAD METHODS & APPLICATIONS PROGRAM AT FIRST NATIONAL COMPUTER CONFERENCE

Montvale, N.J., March 2 -- -- Robert W. Bemer, Staff Consultant to the Vice President of Advanced Systems and Technology, Honeywell Information Systems Inc., will direct the five-day Methods & Applications Program at the 1973 National Computer Conference & Exposition.

The 73 NCC, sponsored by the American Federation of Information Processing Societies, Inc. (AFIPS), will be held June 4-8 in the New York Coliseum. The conference marks the first major national forum for the world-wide data processing community and will feature extensive programs covering both Methods & Applications and Science & Technology.

"We're extremely pleased to have Bob as Chairman of our Methods & Applications Program", said Conference General Chairman Dr. Harvey L. Garner. "We believe his program will prove of critical importance to data processing users across the board. In contrast with past conferences, which have centered primarily on high technology, the 73 NCC Methods & Applications sessions will focus on those day-to-day techniques essential for the effective utilization of computer power within business, government and industry," Garner added.

(more)

Bemer has had more than 20 years of diversified experience in the computer field and has held responsible management positions within the computer industry itself and with EDP user organizations.

In addition to his position as Staff Consultant at Honeywell, Bemer is editor of THE HONEYWELL COMPUTER JOURNAL. Prior to joining Honeywell, held a number of key positions including Director of Systems Programming for UNIVAC and Director of Programming Standards for IBM Corporation. Bemer began his computing career at The RAND Corporation and later organized the Computing Departments at both Marquardt Aircraft and Lockheed Missiles and Space Company.

A graduate of Albion College (U.S.) where he obtained his A.B. degree in mathematics, Bemer has been active in numerous organizations and professional societies. Presently, he is Chairman of the International Standards Organization Subcommittee on Programming Languages and is a member of the Association for Computing Machinery, the Data Processing Management Association, and the British Computer Society (Fellow Grade).

A past member of the ACM Council, Bemer spearheaded the 1970 ACM National Conference and served as its Program Chairman. Subsequently, he was editor of the Conference Publication "COMPUTERS AND CRISIS".

The 73 NCC will be the largest Computer Conference & Exposition ever held. More than 30,000 attendees are expected to attend the conference which will feature approximately 100 sessions, seminars and special events plus this year's largest display of computer hardware, software, systems and services.

3/2/73 ###

NATIONAL CONFERENCE

1973 MAY

User Program Expande

NEW YORK — The American Federation of Inforr Processing Societies appears to have carried out its to beef up computer user attractions at the 1973 Na Computer Conference to be held here next month.

Not only did it get IBM to come back in as an exhibitor, but AFIPS has pulled together 37 methods and applications sessions that the sponsor hopes will draw more EDP managers and other computer personnel from commerce and industry.

IBM is planning its exhibit with the end-user thrust of the show in mind, a company spokesman said. He noted that the firm will focus on data processing applications in several industry areas with demonstrations of improvements in data entry, remote processing, terminal networks and data base/data communications.

Demonstrations

He said the demonstrations would use such equipment as the 3740 data entry system, System/3 Model 10, 3881 optical mark reader, 3886 optical character reader, 3735 programmable buffered terminal, 3270 information display system and an IBM "Selectric" typewriter.

The combination of user-oriented sessions, IBM's return and the location of the show in the heart of the eastern megalopolis has encouraged AFIPS to expect attendance to exceed the 30,000 mark during the June 4-8 show.

The exhibit will be staged at the New York Coliseum while the various paper sessions will be held in the New York Hilton and Americana hotels.

The scientific and technological half of the conference will again be the larger, with some 56 sessions programmed, but AFIPS has made a major effort to focus on users with sessions "designed to take a pragmatic view of each topic," according to Robert W. Bemer, staff consultant to the vice-president of Honeywell Information Systems, who is NCC Methods & Applications chairman.

General Sessions

Major areas of coverage include installation management, computers in government, in industry and in merchandising. There are also general sessions cutting across applications areas, such as one on the subservience of computers to human needs.

A big push in the category of computers in industry is being made in the automotive field, with four sessions devoted to different uses of computers in that industry. tion, AFIPS has scheduled N. Cole, president and chief ing officer of General Motor June 7 luncheon speaker.

Another featured speaker year's conference will be Philip A. Hart (D., Mich.) man of the Judiciary Comr Subcommittee on Antitru Monopoly. He is the author designed to break up allegec polies in a number of key inc including computers.

— JOE M

Laud Educational Value Of Hand-Held Calculator

By RON SCHNEIDERMAN

1973 JUN 11

NEW YORK — Hand-held calculators got high marks rom educators attending the National Computer Conference here last week, although they indicated prices will have to drop even further before the machines will be widely used in school systems across the country.

"A lot of us," said Prof. Robert B. Davis of the University of Illinois, "are very impressed with the hand-held calculator and the role we think it can play in technology and the educational process."

As for the price, Gregory P. Williams, an education consultant, said that "at 5 cents to 10 cents per school day, the calculator may be difficult to get past the school board, let alone any parent."

The importance of the market, however, may be demonstrated by the fact that Hewlett-Packard, which produces virtually the highest priced hand-held model available, has named a marketing specialist in the education field.

H-P's Robert T. Bond said his company is working on several special purpose or "dedicated" calculator models, including one for the educational field.

"The trend is to get big calculator features into smaller packages and at smaller prices," he said.

"We plan to introduce programability into our calculators in the not too distant future, as well as several dedicated features for such fields as education."

These features, he said include more storage, plotter and printer compatibility and algebraic capabilities.

"At the same time," he said, "we're finding that the people who have been using the personal calculator, including educators, will eventually want even more features and capability. They want to plug into a telecommunications environment, for example, to expand their data base."

May Rewrite Courses

The impact of the small calculators, several secondary school and university level educators agreed, may require rewriting many basic math programs, and probably will speed students into an earlier computer orientation.

One high school teacher attending NCC said he has introduced calculators into his 12-week slide rule course "which is about 11½ weeks more of slide rule instruction than they actually need."

Dr. Anthony Oettinger, Harvard University, in a reference to the new math, said: "If the price can be dropped further to make calculators even more accessible, we may have to reorganize our (elementary) math programs again.

"The cheap hand-held calculator may help eliminate so many of the diddley idiotic problems that are so boring to students. Also, they may help us get into the real world so we can do some averaging and modeling.

"What impresses me most," Dr. Oettinger said, "is that this is the first device that puts computer technology in the hands of the consumer."

The emphasis was on terminals, minicomputers, and mini peripherals at the once-a-year successor to the Joint Computer Conferences last week at the New York Coliseum.

1973 JUN 11

Two big mainframers, IBM and Control Data, returned to the computer show, but between them the largest system present was an IBM System/3.

CDC, however, contributed strongly to the show's peripherals flavor by taking the opportunity to unveil a wide range of peripherals products including the industry's first double-density 3330-type disk file (see story, page 49).

The American Federation of Information Processing Societies (AFIPS) made a special effort to attract end users to the National Computer Conference, and many of the exhibitors noted the show's considerable success in this regard.

Despite hot, muggy New York weather, over 31,000 turned out to view the products of 220 exhibitors, leaving the salesmen gasping for air and grasping for customers.

Users Clash on Conversion

By DICK ARONSON

NEW YORK — Users clashed at the National Computer Conference here last week over hardware conversion and the related issue of EDP standards. Ranged on one side were Commander Grace Hopper of the Navy and Patrick Hoyt of the Army.

Mr. Hoyt urged "spending at system-design time to write in a machine-independent style," while Commander Hopper urged adoption of standards to ease program transfer.

Opposing them was William E. Hanna, Jr., of the Social Security Administration, who asserted that attention should be focused on squeezing the most out of existing systems, postponing the problems of conversion as long as possible.

Mr. Hanna cited as particularly troublesome non-syntax problems of conversion — that is, problems not solvable by language standards or conversion software — differences in data format, differences in the internal movements of data fields, differences in register usage and register conventions, differences in JCLs, the need to modify or abandon such special software as Hasp, and operating system differences in a multiprogrammed enviroment.

Continued on Page 52

Continued from Page 49

Mr. Hanna implied a skepticism of the benefits from becoming a multi-vendor shop in the pursuit of cost efficiencies. He described drawbacks of such a shop, such as the need for personnel retraining and the inability of one CPU to back up another.

In passing he cited what he called the "excruciating miseries" of owning foreign peripherals.

He was supported in part by G. C. Durand, assistant vice-president, management information services, Southern Railways, who described such provisions for easing conversion as program-translation software and software to convert data files, employed in a swift 1969 conversion from IBM 7044 to 360 gear, but went on to assert that "Southern won't go through another conversion unless forced to."

Southern has always extended the life of its hardware as long as possible, he said, citing an IBM 705 kept until 1966 and addition of a third 7044 to two existing ones, also in 1966.

Commander Hopper asserted that computers will cost "less than an electric typewriter" by 1980, and that therefore "everybody will have conversion problems."

She issued a call for modular software, pointing out that interchangable parts formed the basis of the industrial growth of the U.S.

Indicative of the interest in the topic was the size of the crowd: The estimated 130 chairs in the room were filled, with about 25 standees lining the wall.

In a session on 5-year plans for state governments, Glenn Goodman, director of the management sciences group, Office of the Governor, Michigan, described that state's plan to replace 10 departmental centers with seven state-wide centers, each with a data system to perform the work and a management information system to keep high-level state aides informed of operations.

5 of 7 Activated

In 2 years of the implementation phase, Mr. Goodman said, five of the seven centers had been started up. A communications master plan, to tie the centers together, will be completed late this summer, he said, and will be implemented over the remaining 3 years of the master plan.

John Gentile, formerly in charge of Illinois' master plan, now an assistant U.S. Postmaster General, said that the Illinois plan calls for consolidating 37 computers into six big centers accessed by remote terminals.

Mr. Gentile said the state will consolidate the processing — which he called the "factory" — but not the system development responsibilities or data entry activities. Those, he said, will remain in the individual agency offices.

The plan was endorsed early in 1971, Mr. Gentile said, and "substantial pieces" have been implemented. Three of the six dual processors are running, he noted.

UCC Revamped

Sears

Continued from page 1

composer of the song, was Bob Ramcke, Commercial division electrician. Ramcke and his fellow electricians (representing other contractors on the job) taped the song and sent the tape to Sears officers who liked it and invited the men to perform at the topping out ceremony.

Commercial divison's Chicago north branch won contracts for the division's premier systems for the building, including a Delta 2000 automation system, the related pneumatic control system, and an Alpha 3000 protection system.

Project manager for the complex construction phase of the job is Howard Pfeiffer. His three project engineers include Art Youwer, Dick Sutherland, and Clyde Carter.

Sutherland and Rudy Saliwanchik estimated the job. Les Lausted, formerly with the Omaha branch, did the original protection system engineering and, along with Saliwanchik, prepared the protection system resubmittal when it became necessary.

Al Kaeppel is the Commercial division account executive responsible for Sears. Ted Couperus is the chief technical representative.

Also involved in the sale was Bill Ellis, former Chicago north branch Commercial manager and recently named Midwest regional sales manager, based in Minneapolis.

The first 50 floors of the Sears Tower are scheduled for completion August 4. The building rises 1,450 feet above street level.

Space Pointer A system for pointing signals at small earth receivers from NASA' Applications Technology Satellite was explained by Cal Senechal, right, engineer at Aerospace division, St. Petersburg, during a recent tour by three U.S. Congressmen, including Don Fuqua (D-Fl), left front, and Dale Milford (D-Texas), next to Senechal. Not shown is Bob Bergland (D-Mn). Other Honeywellers pictured include Dick Foster, front center, and, back row from left, Kay Turner and Harvey Wheless. The Congressmen are all members of the House Science and Astronautics Committee.

IS Will Be Active in NCC

WALTHAM, MA. -- Information Systems personnel will participate in eleven different activities during the first of the new annual National Computer Conferences (NCC), June 4-8, in New York City.

NCC is the successor to the former Spring and Fall Joint Computer Conferences and is expected to draw about 30,000 people to its technical sessions and exhibition.

The 1973 theme is "The Computer and Its World."

Honeywellers presenting seven technical papers are Charlie Bachman of Advanced Systems Technology Operations (ASTO), Waltham ("Reorientation of Data Processing Personnel for the Future"), Bob Bemer of ASTO, Phoenix ("The Role of the Computer in the Publication of a Primary Journal"), Jeff Buzen and Dr. Ugo Gagliardi of IS, Waltham ("The Evolution of Virtual Machine Architecture"), Peter Chen of ASTO, Waltham ("Optional File Allocation in Multi-Level Storage Systems"), Matt Diethelm of Phoenix Computer Operations ("A Method of Evaluating Mass Storage Effects on System Performance"), Bob Goldberg of Boston Computer Operations ("Architecture of Virtual Machines"), and Bob Stover and S. Krishnaswamy of BCO ("Insuring Data Input Integrity in a High Volume Environment").

Gagliardi also will chair the Virtual Machines session on June 8. On June 6, Bob Bemer will be a member of the panel, "Computer History: Critical Turning Points in Software Developments" and John Weil, vice president for ASTO, will participate in the panel on Secure Data Systems.

In addition, Bemer is chairman and organizer of the Methods and Applications Program, one of the two "conferences within the Conference."

Field Starts Bond Drive

MINNEAPOLIS -- Buy Bonds Win Bonds is the theme for the 1973 Honeywell U.S. Savings Bond drive for bi-weekly and semi-monthly field employes. The drive begins today and runs through June 15.

According to Bea Bakke, corporate field support compensation analyst and coordinator of the field bond drive, all field bi-weekly and semi-monthly employes will receive a letter from Honeywell President Stephen Keating, plus a payroll savings

OKC'S SAL

Man of Many Parts

OKLAHOMA CITY, OK. -- Sal Abbadessa, of Peripheral Devices division's Oklahoma City operation, is a man of many talents.

He was a professional photographer for 17 years and still frequently volunteers that skill to help others, such as when he covered the

you can probably find Sal tending his garden where, to the envy of his neighbors, Sal has raised more than one "snappy tomato."

"I enjoy life," says Sal, "and these are some of the ways I do it." He and his wife, Betty, have three married daughters.

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the system is to maintain accurate, up-to-date basic inventory and on-order information on all component parts. A variety of status, measurement and error notification reports are required. These needs are supplied by the component inventory sub-system, the third major systems module.

The fourth module of FAIMS is factory scheduling. The job of combining forecasts, actual demands and manufacturing schedules is done in this segment. Utilizing information from the engineering data base and the component inventory files, this module calculates dependent time-phased requirements on all components. Output from this module includes notifications that component orders are due for release or should be rescheduled.

The final segment of FAIMS is called the shop load module. Using information from the engineering data base and the factory scheduling and component inventory files, this subsystem will provide manufacturing departments with information on present and future load requirements and will establish priorities for production orders.

"FAIMS will give us better tools for scheduling the factory, managing the inventory investment and predicting our customers' needs," said Bill Vogel, the divisional EDP manager. "This will result in lower production costs and improved customer service."

Ham Club

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in the Phoenix area also. She (and several other Honeywellers) is a member of the state's Two-Meter Repeater Club, a 200-member organization of hams with low-power equipment that relays communications in times of natural disasters, especially

The Relocators Workshop Enterprises is a Wabash, Indiana, community project that provides employment for the mentally and physically handicapped. Several Honeywellers from Commercial division's plant here have been involved in the creation, organization and operation of the enterprise which recently moved to a new facility. Among those instrumental in accomplishing the successful relocation were, from left, R.L. Prickett, personnel manager; R.W. Minnick, internal auditor; and J.C. Laffoon, supervisor of data processing. They are shown discussing moving plans with Enterprise director Don Shilts. W.G. McLaughlin, manager of operations, is President-elect of the parent organization, Wabash County Council for the Mentally Retarded and Vocationally Handicapped. Minnick is currently treasurer of the organization.

da-ta-day ITEMS OF GENERAL INTEREST

NEW ASSIGNMENTS

INFORMATION SYSTEMS

NAO

In the Canadian operations of Marketing division, **Fred Kerr** has been appointed manager of D.B.S. operations at Heron's Hill, Ont. He is responsible for all international business systems operations and data preparation.

Also in IS Canadian operations, **Joe Lipsett** has been named branch manager, London, Ont., and **Manny Ceballo** branch manager, Hamilton, Ont.

Also in Canada, **George Geist** has been appointed manager, product line support, for Series 200 and 2000. **Len Harwood** has been given the same position for Series 58, 100, 400 and 6000; and **Reg Richardson** for Series 16, Data Entry, and Terminal Devices.

Also in Canadian operations, **Ivan Church** has been named sales supervisor in London, Ont., **Rejean Chartier** is sales supervisor, medium systems, Montreal; **Pierre Chasles** is sales supervisor, small systems sales, Montreal; and **Laurie Lewin** has been named manager of the customer support center.

In Data Processing Operations (DPO) Western Operations area, **Jim Heldman** has been promoted to branch marketing manager in San Francisco. He was previously assistant to the regional director. Also in Western Ops, **Bill Beeghley** has been promoted from senior marketing representative in Los Angeles South DPO branch to regional marketing representative in Phoenix. Also in Los Angeles South, **Dave Everard** has been promoted from senior marketing representative to assistant to the regional director.

Mike Moore has been named branch manager in Seattle. He was previously assistant to the vice president for Western Ops, and prior to that was assistant to the

In Data Systems Operations (DSO), **Hollis Nelson** recently added to his responsibilities all DSO personnel activities, including Minneapolis, McLean, and field-based DSO employes.

Also in DSO at McLean, Va., **George Hairston** and **Tom Williams** have been promoted to systems supervisors.

CONTROL SYSTEMS

BCCG

James Locke, vice president of Micro Switch division, has announced that **Joe Chenoweth** has been n amed manager of the division's Farmer Electric facility in Natick, MA. He will succeed John Farmer who is leaving to take a position with the state of Vermont.

Chenoweth has been a regional manager for Residential division in Washington, DC, and previously was a market manager for Residential in Minneapolis.

INTERNATIONAL

Jan de Gids has been promoted to manager of customer administration in the European Distribution Center located near Amsterdam. He will report to John Gibson, manager of distribution for Europe. Gibson also announced the promotion of **Stephen Blum** to manager of administration at the Distribution Center.

All sales support and administration activities for Honeywell Germany have been reorganized. **Hans Georg Schwenke** has been named manager of the following sales support and administrative functions: exhibitions and shows, sales promotion, advertising, technical literature, training coordination, and branch office administration. His responsibilities include the products of four divisions: Commercial, Residential, Micro Switch, and

"Dynamic Stability of Planar Rods of Non Circular Centerline," **Laurence Rodgers**, Residential, Journal of the Society for Industrial and Applied Mathematics (SIAM), Vo. 24, No. 3, May, 1973.

"Effectiveness of Direct and Indirect Attack on Wildfire with Air Delivered Retardants," **D.H. Swanson** and **T.N. Helvig**, Government and Aeronautical Products division (G&APD), Hopkins, Spring Meeting of the Western States Section, The Combustion Institute, April 16-17, 1973.

"Overlaid Memory Simplifies Programs, Has Hidden Nooks for Diagnostics," **James F. Townsend**, CSD, Billerica, Electronics, April 22, 1973.

"Project Control," **Harvey M. Wiss**, DPO, Denver, Journal of Systems Management, May, 1973.

"Thermal Analysis of Integrated Circuit Packaging Techniques," **E.A. Wilson**, CSD, Phoenix, 23rd Annual Electronic Components Conference, May 14-16, 1973.

"High Performance 20-40 Micron (Hg,Cd)Te Detectors," **L. C. White**, Radiation Center, IRIS Detector Speciality Group Meeting, March 13, 1973.

"Calculation of Transfer Potentials in Charge Coupled Devices with Arbitrary Voltage and Charge Boundary Conditions Using the Finite Element Method," **E. A. Wilson** and **W. L. Tchon**, CSD, Phoenix, Southwestern IEEE Conference, April 4-6, 1973.

NEW ADDRESSES

Photographic Products division has opened one of its photographic products service branches at Coral Gables, Flordia. The address is 161 Almeria Avenue, Coral Gables, FL 33134. Telephone number is (305) 446-5847.

Dan M. Bowers • Chief Editorial Consultant, **MODERN DATA**

where the mini-action was

EDITOR'S NOTE: Our chief consultant took on the assignment of reviewing the status of the minicomputer world as represented by the exhibitors at the 1973 NCC. His report here predicts gloom for some and boom for others plus a hint of exciting changes to come.

However, as is pointed out in the article, Mr. Bowers apparently overlooked a news item that appeared in our recent May issue — an indication that he isn't reading MODERN DATA *as thoroughly as he should — and, of course, the comments of anyone who doesn't thoroughly read* MODERN DATA *should be weighed very carefully.*

The first of the yearly National Computer Conferences, recently held in New York in June, cannot be said to be truly representative of the computer industry. Granted, IBM was there, and IBM has the power singlehandedly to define what represents the industry. However, the bulk of the computer user dollar-volume is represented by large-scale installations, massive mainframes, rows of tape units, and disk files, etc. and these machines were not displayed, nor any new ones introduced, to those wandering through the aisles of the New York Coliseum. To a great extent, the 1973 NCC was a mini-world.

Together with enough exceptions to prove the rule, the 1973 NCC featured mini-computers, mini-peripherals, mini-companies, and, as yet, mini-mally-used technology. The big dollar action is in the world of big, mundane processing systems, but the big and "exciting" technological and personal action is in the mini-world.

STORAGE SYSTEMS

Information storage has been a vital portion of the industry since a can of mercury with two transducers was made a part of Univac I's walk-in central processors and since some Vermont Yankees sprayed iron oxide onto a metal cylinder. We frequently forget that for every successful device we have been through at least two disasters. For every magnetic drum, disk pack, and half-inch tape, we have experienced two multiple-tape-loom memories, Bernoulli disks, optical photoscopic disks, and chip and strip memories. So turmoil has always reigned in the storage arena, and it still does. Two out of every three new devices or systems introduced have gone down the drain, and they probably still will. The current storm is centered in the mini-tape region.

In response to an urgent need for inexpensive mini-storage, several years ago the Phillips cassette was impressed into computer use. Created for low-performance audio use, the cassette had first to be fitted with computer-grade tape; then a tape drive mechanism had to be created, and much of the required hardware was devoted to overcoming the fundamental shortcomings of the cassette, which was never originally intended to operate above 7½ ips. Due to a lack of reasonable alternatives, sufficient resources were expended to produce entirely workable and usable devices. At the NCC, Peripheral Dynamics Corp. showed a 75 ips, 4-track, 1600 bpi drive for the Phillips cassette.

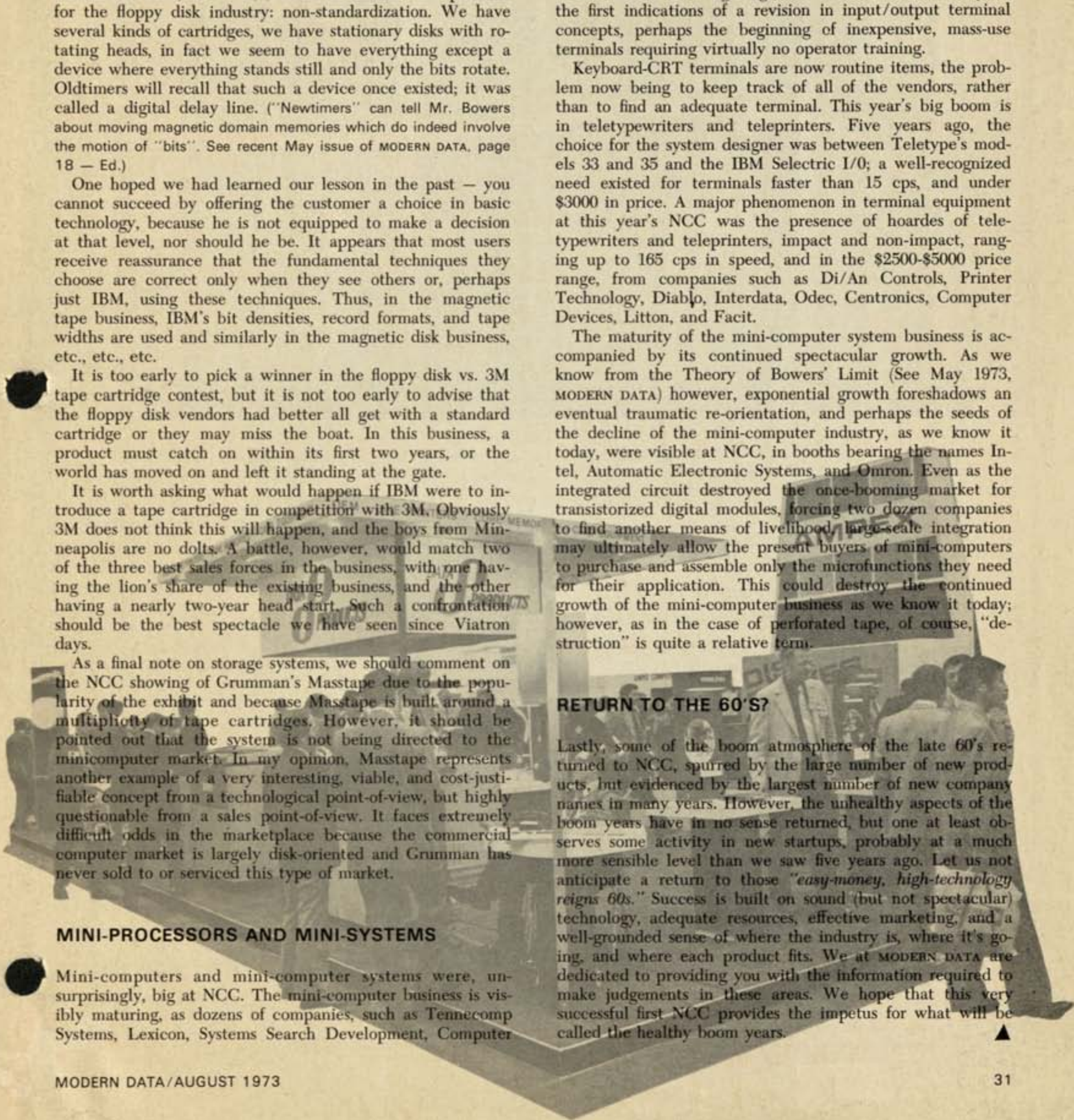
Despite these accomplishments, there has never been great happiness with the Phillips cassette as a computer storage medium. The medium and the drives are sufficiently inexpensive, but reliability and speed have always been problems. Several companies developed more sophisticated cartridge systems, but none had the muscle to gain any acceptance for his products until 3M checked in with its DC-300A Data Cartridge (see MODERN DATA, March 1973). One of NCC's most visible phenomena was the battle of the mini-tapes, with a half-dozen companies (including 3M itself, and at least two companies secreted away in off-Broadway hotel suites) introducing drives for the DC-300A. These drives sell in the same price range as drives for the Phillips, but the cartridge sells for more than twice the price of a Phillips. My judgement is that the greatly superior performance and reliability of the DC-300A will far outweigh the disadvantage of higher cartridge price, and that the Phillips cassette for mini-storage is doomed. "Doomed", of course, in the computer business is a relative term. Perforated paper tape (there are still those of us who recall arguing the merits of "chad" vs. "chadless") has been "doomed" for ten years, but was still very much in evidence at the NCC (in the Remex booth, for example). Try finding a perf tape reader or punch in a 370-165 installation! However, in the mini-world, perforated tape is alive and well, if not exactly kicking.

During the recent period when the industry scrambled to create a mini-storage, another device emerged: the "floppy", or small cartridge disk. In this device, the 3M Cartridge tape faces a formidable opponent: the tape offers nearly one order of magnitude greater storage capacity, but the disk provides nearly two orders of magnitude faster access. Vendors of storage devices are choosing sides and, at present, the floppy disk appears to have more backers. These backers themselves have, however, created a fundamental problem for the floppy disk industry: non-standardization. We have several kinds of cartridges, we have stationary disks with rotating heads, in fact we seem to have everything except a device where everything stands still and only the bits rotate. Oldtimers will recall that such a device once existed; it was called a digital delay line. ("Newtimers" can tell Mr. Bowers about moving magnetic domain memories which do indeed involve the motion of "bits". See recent May issue of MODERN DATA, page 18 — Ed.)

One hoped we had learned our lesson in the past — you cannot succeed by offering the customer a choice in basic technology, because he is not equipped to make a decision at that level, nor should he be. It appears that most users receive reassurance that the fundamental techniques they choose are correct only when they see others or, perhaps just IBM, using these techniques. Thus, in the magnetic tape business, IBM's bit densities, record formats, and tape widths are used and similarly in the magnetic disk business, etc., etc., etc.

It is too early to pick a winner in the floppy disk vs. 3M tape cartridge contest, but it is not too early to advise that the floppy disk vendors had better all get with a standard cartridge or they may miss the boat. In this business, a product must catch on within its first two years, or the world has moved on and left it standing at the gate.

It is worth asking what would happen if IBM were to introduce a tape cartridge in competition with 3M. Obviously 3M does not think this will happen, and the boys from Minneapolis are no dolts. A battle, however, would match two of the three best sales forces in the business, with one having the lion's share of the existing business, and the other having a nearly two-year head start. Such a confrontation should be the best spectacle we have seen since Viatron days.



As a final note on storage systems, we should comment on the NCC showing of Grumman's Masstape due to the popularity of the exhibit and because Masstape is built around a multiplicity of tape cartridges. However, it should be pointed out that the system is not being directed to the minicomputer market. In my opinion, Masstape represents another example of a very interesting, viable, and cost-justifiable concept from a technological point-of-view, but highly questionable from a sales point-of-view. It faces extremely difficult odds in the marketplace because the commercial computer market is largely disk-oriented and Grumman has never sold to or serviced this type of market.

MINI-PROCESSORS AND MINI-SYSTEMS

Mini-computers and mini-computer systems were, unsurprisingly, big at NCC. The mini-computer business is visibly maturing, as dozens of companies, such as Tennecomp Systems, Lexicon, Systems Search Development, Computer Operations, Iomec, PSC Technology, Telefile Computer Products, offered their peripherals compatible with, and interfaced to, the popular minis. The major mini-computer manufacturers themselves offer full lines of peripherals. Even devices which have not popularly been associated with mini-systems showed up with mini-computer interfaces — graphic terminals from Imlac, Ontel, and Houston Instrument, for example, and trackballs and joysticks from Singer.

In the peripherals area, three devices, none of them new, indicate the diversity of the mini-systems, their applications, and the hardware they use. Two varieties of data tablets (from Connecticut neighbors, Scriptographics and Science Accessories) were shown, audio response terminals, and telephone handset card readers and portable terminals were demonstrated by Northern Electric, Northern Telecom, and Transcom. To the long-range thinker, these devices may be the first indications of a revision in input/output terminal concepts, perhaps the beginning of inexpensive, mass-use terminals requiring virtually no operator training.

Keyboard-CRT terminals are now routine items, the problem now being to keep track of all of the vendors, rather than to find an adequate terminal. This year's big boom is in teletypewriters and teleprinters. Five years ago, the choice for the system designer was between Teletype's models 33 and 35 and the IBM Selectric I/0; a well-recognized need existed for terminals faster than 15 cps, and under $3000 in price. A major phenomenon in terminal equipment at this year's NCC was the presence of hoardes of teletypewriters and teleprinters, impact and non-impact, ranging up to 165 cps in speed, and in the $2500-$5000 price range, from companies such as Di/An Controls, Printer Technology, Diablo, Interdata, Odec, Centronics, Computer Devices, Litton, and Facit.

The maturity of the mini-computer system business is accompanied by its continued spectacular growth. As we know from the Theory of Bowers' Limit (See May 1973, MODERN DATA) however, exponential growth foreshadows an eventual traumatic re-orientation, and perhaps the seeds of the decline of the mini-computer industry, as we know it today, were visible at NCC, in booths bearing the names Intel, Automatic Electronic Systems, and Omron. Even as the integrated circuit destroyed the once-booming market for transistorized digital modules, forcing two dozen companies to find another means of livelihood, large-scale integration may ultimately allow the present buyers of mini-computers to purchase and assemble only the microfunctions they need for their application. This could destroy the continued growth of the mini-computer business as we know it today; however, as in the case of perforated tape, of course, "destruction" is quite a relative term.

RETURN TO THE 60'S?

Lastly, some of the boom atmosphere of the late 60's returned to NCC, spurred by the large number of new products, but evidenced by the largest number of new company names in many years. However, the unhealthy aspects of the boom years have in no sense returned, but one at least observes some activity in new startups, probably at a much more sensible level than we saw five years ago. Let us not anticipate a return to those *"easy-money, high-technology reigns 60s."* Success is built on sound (but not spectacular) technology, adequate resources, effective marketing, and a well-grounded sense of where the industry is, where it's going, and where each product fits. We at MODERN DATA are dedicated to providing you with the information required to make judgements in these areas. We hope that this very successful first NCC provides the impetus for what will be called the healthy boom years. ▲

ansi reporter

Vol. 7, No. 4
February 16, 1973

Trowbridge Announces Formation of Consumer Product Safety Group

"The American National Standards Institute is uniquely qualified to respond to the challenge of the Consumer Product Safety Act and welcomes the opportunity to be of service to the consumer, industry, and government," Institute President Roy P. Trowbridge declared recently.

To implement this function, Trowbridge announced the formation of a new committee of ANSI's Board of Directors. The committee is composed of outstanding product safety experts drawn from consumer groups, manufacturers, government, labor, the professions, and general interest groups.

"An ANSI special committee studied the bill months before its passage on October 27," Trowbridge stated, "and concluded that ANSI should set up a unique mission-oriented function aimed at assuring full utilization of the voluntary standards community in developing product safety guidelines required by the new act."

The new committee has a threefold objective:

1. To play a leadership role in coordinating the activities of the voluntary standards-making community in its relationships with the Consumer Product Safety Commission

2. To promote awareness on the part of the Commission of the readiness and ability of the standards-writing community to effectively assist in the development of consumer product safety standards intended to reduce the toll of product related accidents in the U.S.

3. To provide information and guidance for the standards community and the public regarding the standards-making aspects of the Act.

The Committee is chaired by Frederic J. Rarig, secretary and legal counsel, Rohm & Haas Company, Philadelphia, Pa. Committee members are:

Mrs Margaret Dana, consumer relations consultant and journalist, Chalfont, Pa

Robert F. Ellena, vice president, Liberty Mutual Insurance Company, Boston, Mass

L. O. Gillette, director of industrial engineering and quality assurance, Armstrong Cork Co, Lancaster, Pa

Herman Greitzer, attorney, R. H.

(Continued on page 4)

ANSI ANNUAL MEETING

Sheraton-Palace Hotel
Market and New Montgomery Streets

San Francisco, California, will be the site of ANSI's 1973 annual meeting. The first day, March 29, will be confined to meetings of the Board of Directors and the Executive Committee of the Board. On March 30 the Institute will conduct a critically important Seminar on Standardization at Corporate, Organizational, National, and International Levels. Participants will have an opportunity to hear the nation's most experienced experts, representing every phase of the ANSI national and international program, in a "how to do it" and "how to profit from it" meeting which will benefit both current and prospective ANSI members. The March 30 session will include an Executive Summary, featuring officers and directors of ANSI and top government officials. The annual business (luncheon) meeting of the Institute will conclude the program.

In announcing the annual meeting and inviting all ANSI members to attend, President Trowbridge stated: "the San Francisco Seminar and Executive Summary will provide an excellent opportunity for companies, voluntary organizations, and government officials to obtain up-to-date, factual information on the role of voluntary national consensus standards in company programs, in national standardization efforts, and for international application. In one day standards practitioners and corporate officers will learn how their voluntary efforts and industrial experience can be made effective and meaningful in such far reaching programs as the Occupational Safety and Health Act, Product Safety Act, U.S. change to metric, environmental quality, and development of nuclear power."

For additional details and a complete program write: Annual Meeting, American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

Published biweekly by the American National Standards Institute, 1430 Broadway, New York, N.Y. 10018

Programming Languages Reviewed by TC 97/SC5

Programming languages ALGOL, COBOL, FORTRAN, and PL/I were subject to intensive review in ad hoc working groups when ISO TC 97/SC5 met in Washington, D.C., towards the end of 1972.

Attended by 39 delegates representing seven countries, the meeting was presided over by Robert W. Bemer of Honeywell Information Systems, Inc, and was hosted by the Computer and Business Equipment Manufacturers Association.

The following decisions regarding the programming languages mentioned above were reached by the SC 5 group:

That work be initiated to revise the current ISO Recommendation on COBOL with a view to the early establishment of International Standards

That the U.S. member body of SC 5 (the American National Standards Institute) be requested to forward the new proposed American National Standard for FORTRAN to ISO for consideration as a possible International Standard

That work be initiated to establish an International Standard on PL/I

That the current ISO Recommendation ALGOL be corrected and republished

Capacitor Standard

Requirements for power line coupling capacitors are detailed in a recently published American National Standard, ANSI C93.1-1972.

The document applies to capacitors used as coupling devices for power line carrier, and to the capacitor dividers of capacitor voltage transformers.

ANSI C93.1-1972 may be obtained from the American National Standards Institute at $3.00 a copy. It was written with the assistance of the National Electrical Manufacturers Association.

Directives for Technical Work of ISO Adopted and Now Available from ANSI Sales Department

At a meeting held September 18-20, 1972, the ISO Council adopted the "Directives for Technical Work of ISO" that had been submitted for approval and instructed the secretary general to issue copies to all member bodies of the world standards organization.

The Council also requested the secretary general to prepare for approval by correspondence several annexes to the directives. These include Annex III, Notes for Chairmen of Technical Committees and Subcommittees; and Annex IV, Notes for Participants at Meetings of ISO Technical Committees and Subcommittees.

It was likewise decided that member bodies should be given an opportunity to present supplementary proposals in relation to the Directives for the Technical Work of ISO, and that the secretary general will report these to the Executive Committee.

Copies of the directives may be obtained from the Sales Department of the American National Standards Institute at $2.00 each.

Two Technical Advisory Boards Formed by ANSI

The formation of two new Technical Advisory Boards has been approved by letter ballot action of the Institute's Executive Standards Board.

The new TABs have been designated "Measurement and Automatic Control" and "Medical Devices." Standards Coordinator A. Morales has been assigned technical staff responsibility for the two groups.

Louis Costrell and John C. Russ Honored by IEEE for Contributions to Standardization

Standards experts Louis Costrell and John C. Russ have been awarded the Standards Citation of the Institute of Electrical and Electronics Engineers. The presentations were made by Julian Foster, chairman of the IEEE Standards Committee, at the Nuclear Science Symposium and the Nuclear Power Symposium.

Sponsored by IEEE, the two meetings were held at Miami Beach last December. The Citation is presented by the IEEE Standards Committee to individuals who have made important contributions to standardization.

Costrell, chairman of American National Standards Committee N42 on nuclear instrumentation and technical advisor to the USNC of IEC for TC 45 and its subcommittees, is chief of the Radiation Physics Instrumentation Section of the National Bureau of Standards.

Russ, vice-chairman of ANSI's Nuclear Technical Advisory Board and chairman of the Joint Committee on Nuclear Power Standards of the IEEE Group on Nuclear Science and the IEEE Power Engineering Society, is with the Atomic Products Division of General Electric.

Twenty-four nuclear standards documents developed within IEEE, largely as a result of the effective leadership of Costrell and Russ, play an important part in the expanding safety programs of the Atomic Energy Commission.

Most of these standards have been approved as American National Standards by ANSI, and many of them represent the U[illegible] position in the international st[illegible]dardization activities of non-treaty groups like ISO.

DP personnel

ROBERT W. BEMER
Advanced Systems and Technology
Honeywell Information Systems, Phoenix

Mr. Bemer is Staff Consultant to the Director, Advanced Systems and Technology. His computing career began at the RAND Corporation in 1949. After two years at Lockheed Aircraft Co. he organized the computing departments at both Marquardt Aircraft and Lockheed Missiles and Space Company. He joined the IBM Corporation in 1955 as Assistant Manager of Programming Research, becoming Manager of Programming Systems and then Director of Programming Standards. In 1962 he joined UNIVAC as Director of Systems Programming. In 1965 he spent a year at Bull-GE as Consultant to the General Manager, and was then assigned as Consultant in Phoenix. He received an A.B. in Mathematics from Albion College (US) in 1940. He has been involved in international and national standardization of computer languages, vocabulary, and character sets since 1960, and is presently Chairman of the International Standards Organization Subcommittee on Programming Languages (TC97/SC5). He was a primary developer of ASCII and has authored some 50 papers, including one on time-sharing in 1957 March. He is a Fellow of the British Computer Society and a member of the Association for Computing Machinery and the Data Processing Management Association. For the ACM, he was a member of the Council from 1960 to 1966, of the Editorial Board from 1957 to 1965, and a National Lecturer in 1961 and 1969. He was originator of and Program Chairman for ACM 70, and subsequently Editor of "Computers and Crisis".

This is the first of articles on Data Processing Systems and Personnel in the Mountain Region. Bob Bemer is certainly one of ACM's most active members. We are proud to include his biography in our first issue.

* * * * *

HONEYWELL TRAINS INMATES

At the request of the Phoenix Branch, Honeywell's Western Operation's Education Department conducted a five-day class at the Arizona State Prison in Florence, Arizona. The class was taught by John Hennessy of the Los Angeles staff, who received coordination assistance from the branch's John Irvin and Ken Kan.

The class, which was very well received, consisted of twelve inmates who constitute a programming group. The group is led by an inmate, Mike Pruett. The men have been in the group for approximately four years. They have received letters of commendation from the office of the Governor of Arizona for the fine job that they have been doing. It is said that the group has saved the State of Arizona approximately $100,000.00 a year in programming costs. The men are extremely interested in the subject. They have had parolees from their group who have received jobs paying from $7,000 to $15,000 a year.

The Phoenix Chapter in response to a request from the Prison has voted unanimously to provide them with a complimentary membership and subscription to the Communications of the ACM. It was also suggested that the Chapter might consider the possibility of a personal visit to the prison for an informal meeting. Anyone interested in this worthwhile activity should contact Pat Skelly in Phoenix.

COMING EVENTS

ACM SIGPLAN Symposium on Two-Dimensional Man-Machine Communications, Los Alamos, New Mexico, October 5 - 6, 1972.

For further information, contact James B. Morris, Group C-7, University of California, Los Alamos Scientific Laboratory, PO Box 1663, Los Alamos, New Mexico 87554.

WE WELCOME YOUR COMMENTS

As a member of the ACM Mountain Region, we welcome your views and comments on our newsletter. If you have suggestions or questions regarding ACM activities, please let us know.

Contact Jerry Smallidge, Editor Mountain Region News, PO Box 6000, M/S K 37, Phoenix, Arizona 85005

OUR OLDEST CHAPTER

THE RIO GRANDE CHAPTER OF THE ACM

The Rio Grande Chapter of ACM was organized in October of 1957. It was guided by such well-known computer professionals as Dan McCracken, Edward Voorhees, H. Gunning Butler and Miss Lucile Graham.

The plan for the formation of the Chapter was begun at the Houston meeting of the National ACM in June of 1957. There, a group representing six computer users of the southwest area discussed the organization of the chapter. This group included ACM members from Los Alamos; Kirtland AFB; White Sands Proving Grounds; Glen L. Martin Company, Denver; and the General Electric Computer Department, Phoenix. The suggested area for the new Chapter included New Mexico. Arizona, the El Paso area, and the Denver area. The computing personnel of KAFB offered to host the first meeting to be held in October.

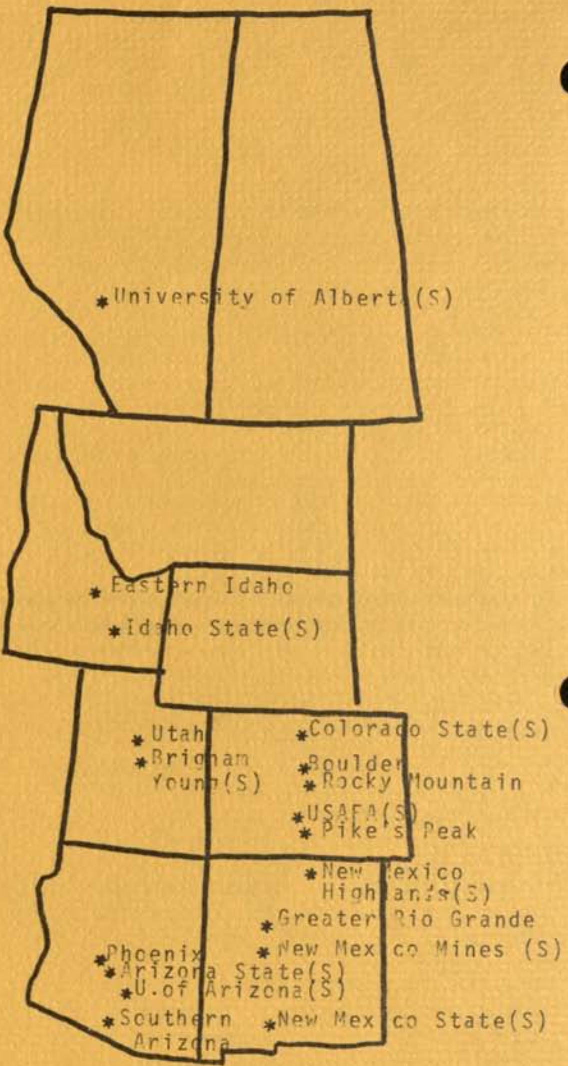
After much correspondence and planning by Dan McCracken, Ed Voorhees and Gunning Butler the meeting was held at KAFB on October 14, 1957. Chapter by-laws were drawn up and presented with a petition to National ACM for the recognition of the Southwest Chapter of ACM. Twenty-one ACM members signed the petition and the first officers of the Chapter were elected. The first invited speaker was Dr. Stanislaw Ulam. His topic was "Speculations on the Future of Computing Machines in Mathematical Science." About ninety persons attended this first meeting, one fourth of whom were members of ACM. On December 18, 1957, Jack Moshman, secretary of the National ACM, extended official recognition of the Chapter to Dr. Voorhees. Mr. Moshman did request that the Chapter choose a different name as "southwestern" already referred to a section including a larger area. At the second meeting of the Chapter, March 13, 1958, at Sandia Base, the name Rio Grande Chapter was chosen.

Prominent New Mexico computer professionals have guided the organization through some 37 meetings. Five of these meetings were held on university and college campuses in New Mexico, giving students the opportunity to present papers and reports on their accomplishments in computer technology.

Dr. Donald Robbins of Sandia Laboratories has compiled a KWIC index of all papers and authors presented since the first meeting in 1957 through the 1972 Joint Spring Meeting in Scottsdale, Ariz.

This index is available upon request.

MOUNTAIN REGION CHAPTERS



OUR NEWEST CHAPTER

SOUTHERN ARIZONA

The Mountain Region welcomes to its ranks a new chapter. The Southern Arizona Chapter Charter was approved by the Council on May 17, 1972. Chapter officers elected at the May 18, 1972, meeting were Robert Buckmaster, Chairman; Robert Leach, Vice Chairman; and Elizabeth (Mrs. Roy) Laird, Secretary.

Welcome, Southern Arizona.

R. Bemer

Mountain Region News

VOL 1 NO 1 SUMMER 1972

REP'S REPORT

DR. DONALD R. MORRISON
REGIONAL REPRESENTATIVE

At long last, with a little help from the Phoenix Chapter and the Greater Rio Grande Chapter, we have a regional newsletter. Through this medium I hope the thousand ACM members who live in the seven states and two providences that comprise the Mountain Region will come to know each other better. There is a lot to know, and we can't tell it all in one issue. But let me give you a sneak preview.

We have in our region at least a dozen computer scientists who play prominent roles in ACM; editors of ACM publications and departments; chairmen of national ACM committees and prominent educators and researchers in Computing Science. We have ten university Computing Science Departments that have distinguished themselves by outstanding and innovative educational programs. We have computer oriented scientific, industrial and commercial laboratories that work at the forefront of computer technology and applications. We have research programs that are producing breakthroughs in numerical analysis, linguistics, algebraic manipulation, time-sharing and computer aided instruction. We have eighteen chapters, some new and some old; and many of them with excellent technical programs. I hope that each of these people, laboratories, schools, chapters and projects will be described in an article in a future issue. You may wish to collect the issues of the newsletter. I hope they will be a useful reference.

The Rio Grande Chapter has very kindly agreed to underwrite the mailing expense, and the Phoenix Chapter the printing of the first few issues. After that we will have to find a way to share the cost and effort involved in maintaining a quarterly newsletter. Your suggestions as to how this can be done will be most welcome.

acm IS ....

- computing people sharing ideas and information in chapter meetings, conferences, and ACM publications;
- education and increasing social awareness;
- growing member involvement through special interest groups and committees;
- a dynamic response to professional needs.

MOUNTAIN REGION
(Idaho; Montana; Wyoming; Utah; Colorado; Arizona; New Mexico; El Paso county, Texas; and Alberta and Saskatchewan, Canada.)

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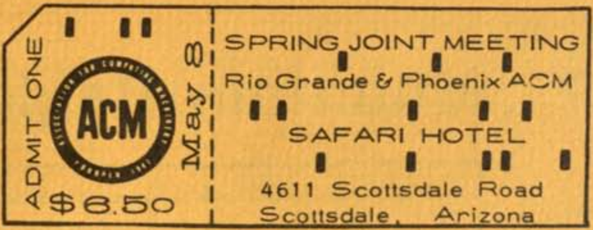
ADMIT ONE
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May 8
SPRING JOINT MEETING
Rio Grande & Phoenix ACM
SAFARI HOTEL
4611 Scottsdale Road
Scottsdale, Arizona

CHAPTER HOST
RODMAN S. FOX

INTRODUCTION
ROBERT W. BEMER

MEMBERS AND GUESTS

BANQUET SPEAKER
Dr. H.R.J. GROSCH

Herb Grosch Speaker at SJM

The 5th Annual Spring Joint Meeting of the Phoenix, Rio Grande, and Student ACM Chapters was held again this year at the Safari Convention Center in Scottsdale, Arizona. A full day's program was planned with active participation from all chapters. The meeting consisted of an all-day conference followed by a dinner meeting. Conference Chairman was William A. Gardner of the Rio Grande Chapter. The banquet speaker was Dr. Herbert R.J. Grosch from the Center for Computer Sciences and Technology of the National Bureau of Standards, Washington, D.C. Dr. Grosch projected some of the broader sociological computer implications and related many of them to specific developments and applications described during the conference.

The record turnout and increased participation was most encouraging. Hopefully, this meeting will expand to become a Mountain Region Conference in 1973.

Information Processing Group Meets in Italy

Taking part in the work of ISO Technical Committee 97 on computers and information processing were (l to r) ANSI Standards Coordinator Marie E. Hogsett; ISO interpreter; Dr. Robert G. Chollar, chairman of the meeting; Vico E. Henriques of BEMA who represented the secretariat; Standards Coordinator Daniel W. Smith; and J. –R. Alessi, present as representative of ISO Central Secretariat.

More than 50 delegates from 16 countries and international organizations attended the seventh meeting of ISO Technical Committee 97, Computers and Information Processing, recently held in Venice.

Arrangements for the gathering were made by the Italian Association of Business Machine Manufacturers. The chairman of the meeting was Dr Robert G. Chollar of the United States.

The delegates were especially concerned with the reorganization of TC 97 in preparation for expanded standards work in the data processing field.

Seven new subcommittees were established, including one for magnetic disks and another for interfaces between computers and peripheral equipment. Four of these groups will carry on the activities of the one former subcommittee that was concerned with all input/output matters but which has since been disbanded.

The delegates also considered the proposal made by ISO that existing ISO Recommendations should be transformed into International Standards, particularly the 24 Recommendations that have already been produced by TC 97.

Experts Work to Standardize Clothing Sizes

An ISO program to standardize sizing systems and designations for clothes should help a lot of people avoid getting into tight situations when they are confronted with the bewildering array of sizing systems which exist in most parts of the world.

While a shirt manufacturer in one country, for example, interprets arm length as the measurement between neckband center and cuff hem, a manufacturer in a neighboring country may work with an arm length measured between cuff and shoulder seam. Collar sizes and chest measurements have likewise been subject to conflicting assessments.

The result is a bewildering mass of designations for every article of clothing. Thus, the much-traveled woman of average build must learn to ask for a size 38 dress in Britain, a size 10 in the United States, a size 42 in France, and a size 46 in Italy.

Today, international commerce in clothing is seriously hampered by the lack of a common size designation, which would provide great advantages for manufacturers, distributors, and consumers alike.

The U.S. in particular would benefit from involvement in such standards activity, as there is a real danger that our present inaction in the field will lead to serious restrictions on the ability of domestic manufacturers to market their products abroad.

Twenty-one nations have already agreed to play a vigorous role in the work of ISO Technical Committee 133, Sizing Systems and Designations for Clothes. Three speciali[illegible] working groups have been crea[illegible] to deal with men's, youths', and boys' wear; women's, junior miss, and girls' wear; and, lastly, infants' wear.

Draft proposals are under study in each of these groups. It is intended that any resultant international standards will provide a simple and direct means of indicating the body size of the person that a garment is intended to fit.

Assuming that the shape of the body has been accurately determined, the proposed international system will enable a purchaser to easily select garments that fit.

Please distribute this publication to other interested members of your staff and to members of your organization. Also feel free to reproduce it.

ROUTE TO:

ansi
american national standards institute
1430 broadway
new york, n.y. 10018

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

January 24, 1972

Mr. Robert Bemer
General Electric Company
Computer Department
13430 North Black Canyon Highway
Phoenix, Arizona 85001

Dear Bob:

What a pleasant surprise it was to receive your very thoughtful tribute to the Center for its Standards activities.

It is now hanging in our Center Office where we can all be reminded of our role and your contributions to computer standards as well.

Please accept my open invitation to come visit us, see your gift, and be properly welcomed by us any time you visit Washington.

Sincerely,

Ruth

Ruth M. Davis, Ph.D.
Director
Center for Computer
Sciences and Technology

~~Cc: Janet (letters?)~~

Honeywell

1971 November 19

BoB

RECEIVED
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PASADENA

Robert B. Forest, Editor
Datamation Magazine
94 S. Los Robles Ave.
Pasadena, CA 91101

Dear Bob:

I choked a bit when Dr. Vander Noot (Nov. 15 issue) told us that he could find only one article on system and program testing from the last few years. Especially since I have written a few myself, one of which (1966 September Datamation) covered pretty much the same ground as he does.

Lest your other authors, and readers, fall into the same trap, may I suggest that the yearly Bibliography and Subject Index for Computing Reviews provides a good place to check for background. I found an average of 6 pertinent papers per year by looking under "test(s)(ing)".

This alone will not do it, however. In my own case, I have never used the word "test" in the titles. One would do much better to subscribe to Computing Reviews and read it thoroughly each month.

Enclosures to Dr. Vander Noot for restoration of his faith.

Bob
R.W. Bemer

RWB:eh

Where would Dr. V. Noot (or other idiot) find this keeno Bibliography & Subject Index? Never Mind. We'll tell them. Happy Eating out

BBF

HONEYWELL INFORMATION SYSTEMS INC., ADVANCED SYSTEMS & TECHNOLOGY
DEER VALLEY PARK, P.O. BOX 6000, PHOENIX, ARIZONA 85005, TELEPHONE 602/993-2900

The Fourth Generation

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Incompatibility

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Software Engineering

Introducing Infotech Stat

Specialists in computing have expressed concern for some time that, while they are pointing the way to more efficient information handling systems, the information they need to support their own work is becoming increasingly scattered and dilute. The plethora of information on computing subjects is, with few exceptions, failing to meet the special needs of those whose work is at the centre of current developments in computing.

Infotech Limited, an independent company founded by a number of experienced computer professionals, is a body solely devoted to meeting this problem by creating, on an international basis, an environment for the exchange of facts, ideas, experience and opinions at a high level between key computer personnel.

Following this objective, Infotech has initiated a continuing series of State of the Art Lectures at which distinguished computer experts from all over the world gather to engage in a dialogue on the important unresolved issues in computing. The first five Lectures established the idea as eminently worthwhile, having been attended by 1,500 senior personnel from all sides of the computer profession and representing 14 different nations. Seventeen more Lectures are in progress in 1971 at two international centres: London and Amsterdam.

Extending from these Lectures, Infotech, in special association with Datamation magazine, now announces a series of State of the Art Reports, a unique new series of in-depth analyses of the key issues in computing today.

The Infotech State of the Art Reports each deal in depth with one specific aspect of computing. The subjects covered by the Reports to be published during 1971 represent a wide spectrum of the key issues affecting the development of hardware, software and computer usage during the 1970s.

Transcripts of the State of the Art Lecture presentations are the basis of the Reports – but only the basis. Each Report includes an in-depth analysis of the subject concerned, distilled from the mass of authoritative information gathered, particularly the formal and informal discussions between speakers and delegates at the Lecture. It includes papers by eminent computer professionals invited to contribute. It includes a carefully researched bibliography. It includes comprehensive and cumulative indexes. Each Report is a significant work in its own field. Together, the Infotech State of the Art Reports represent the first serious attempt to present the key issues in computing today in a logically structured and completely authoritative way.

Uniquely informed background and guidance to help you make decisions on:

- buying equipment and services
- manufacturing hardware
- writing software
- selecting programming languages
- planning new products
- researching new systems
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Among the contributors to the Infotech State of the Art project are:

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M B Ashdown Trend Electronics
M J Auriscoste Eurosoft
J D Babcock Allen-Babcock Computing
D L A Barber National Physical Laboratory
K R Barge Computer Sciences International
A J Barnes Texas Instruments
V L Barnes McKinsey
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R W Bemer Honeywell
Prof H Borko University of California
Dr J B Boulden On-Line Decision
G A Brown Prudential
Dr P J Brown University of Kent
J Buckle ICL
Prof J N Buxton University of Warwick
P P A Calvert Plessey
J G Cleary Burroughs
P Cox SPL International
R Creech Burroughs
R W Cutting Main La Frentz
Prof R A Cuninghame-Green Technische Hogeschool Twente
D W Davies National Physical Laboratory
Prof M W Humphrey Davies Queen Mary College
K J Dean Twickenham College of Technology
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Prof E W Dijkstra Technische Hogeschool te Eindhoven
P H Dorn Union Carbide
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J J Dowski IBM
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R A Dukes G D Searle
A H Duncan Barclay's Bank
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Prof P Ercoli Centro di Studio Dei Sistemi di Controllo e Calcolo Automatici
Prof G Estrin University of California
I P Evans Marconi-Elliott
R W Evans Time Sharing Limited
A Falkoff IBM
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J A Foord Rolls Royce
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J R Fowling BEA
N D Gammage Marconi-Elliott
R J Gilinsky Computer Sciences International
Dr S Gill Software Sciences
F Gordon London University Computing Service
Dr W R Graham Rand Corporation
H R Grosch National Bureau of Standards
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International standards and interfaces – theory and practice · Telephone-based systems – advantages and disadvantages · Post Office proposals – design criteria, benefits, constraints, timings · Packet-switching – design concepts, traffic potential, investment needs · Impact of networks on terminal design · U.S. and European network proposals compared – likely developments, political constraints · Network design trade-offs – characteristics v. total system performance · Classification of network types · Traffic routeing – technical and economic constraints · Adaptive routeing techniques · Interaction of logic design and software · Feasibility of multi-manufacturer corporate networks · Interlinking dedicated system – problems and solutions · Satellite processors – pros and cons · Inter-organisational networks – reliability and security · Management information – integrating process control · Impact of networks on management structure and information · Inter-user data communications · The economics of leased line networks **Computer Networks** ☐

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Stylistic and correct programming – the limitations of program testing, additive program construction · Intellectually manageable programs – impact on language design, mental discipline necessary · The design process – interaction with hardware, choices for the designer, identification of proper grammar · Varieties of language – semantic description techniques, identification and classification of significant features, interaction with data types · Levels of language – identification of event series, effects on modular compiler design, use of macro definition and macro-expansion before compilation · Specifying the language and the computer · Remote syntactical checking for interactive computing · The influences of Algol, COBOL and APL · An APL machine? · Beyond microprogramming · Criteria for defining a formal system design language – ability to learn, expression and large segment flexibility, documentability, technology-independence · The significance of order-code design – bad habits and subsequent limitations · Compiler design – international standards, modular design techniques, using problem-oriented languages · Hierarchical approach to software design – software classification and structural description techniques **High Level Languages** ☐

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User commitment to the manufacturer – packages, technological obsolescence, unbundling economics · The myth of machine independence · External services – bureaus, leasing, facilities, management, software · New input/output technologies – graphics, microfilm, image processing, document reading · Meeting the new software requirements or more unexploitable hardware? · Influences on product design – the salesman, user groups · Bridging the communication gaps – identifying needs, the role of the professional bodies, co-ordinating research with the market · Key requirements for managing small and large projects – structure, cost, responsibility · Productivity, quality and reliability control techniques · Systems integration – specification, conversion, tuning · Data base management – major features, data processing and management implications · Programming techniques evaluation – decision tables, questionnaire programming, modularity, packages · Exploiting OR – modelling, planning systems, corporate planning, multi-disciplinary teams · The inhibiting effect of organisation and management · Systems for managers or accountants? · Company and profession – a loyalty conflict? · DP centralisation v. decentralisation · The special problems of the smaller user · The systems needs of the shop floor, motivation of end-users · The context of data **Application Technique** ☐

Incompatibility

Interfaces – current limitations and developments, design criteria, user requirements and likely future developments · The role of the manufacturer and equipment supplier – trend towards perpetuation of non-standards, influence of marketing, re-appraising the design process to reduce the impact of hardware · Peripherals and media – current unsatisfied requirements, likely future developments in standards for discs, tapes, cards, character reading and microfilm · Languages – practical standards, special purpose v. general purpose, high-level v. low-level, simulation v. emulation, experience with COBOL and PL1, the problems of user-developed languages · The operating system straitjacket – possible and practical solutions · Software portability – practical application of dialect translation, the use of macros, decompilation · Files: the practical possibilities – rethinking file design, ideal structures, implementation problems · International standards – one, two or more? · Practical means of developing standards · Interfaces – technical, political and market influences · The role of the manufacturer – machine ranges, generations, necessary and likely future design criteria · Influences in the industry – IBM, manufacturers groups, Government, inertia, international user and research groups. **Incompatibility** ☐

Interactive Computing

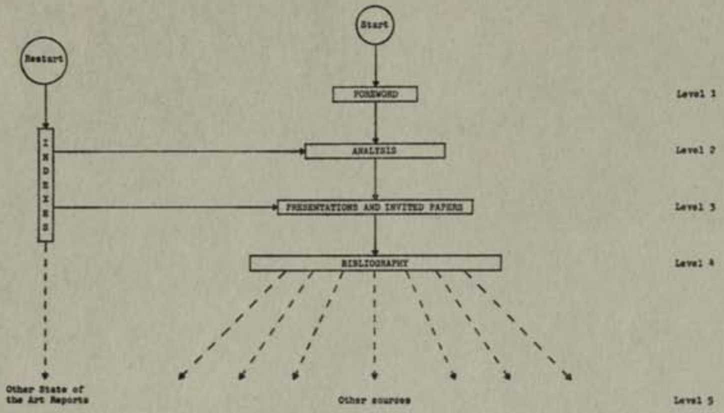
Systems architecture – trends in processors, storage, communications · Terminals design – influence of manufacturer, carrier · Languages – heuristic programming technique, interactive language design criteria and review · System design – reliability, cost/performance ratios, intelligence location trade-offs · Project MAC – lessons of experience, paths for the future · Graphics – current limitations, breakthroughs required, software developments, database implications · Education and medical applications – implementation problems, future potential · Interactive computing – rationale, economics, alternatives? · Time-sharing services – economics of commercial services, special-purpose v. general purpose, implementation experience · Shape of the industry – the untapped user potential, internal v. external services, new industry sectors **Interactive Computing** ☐

Software Engineering

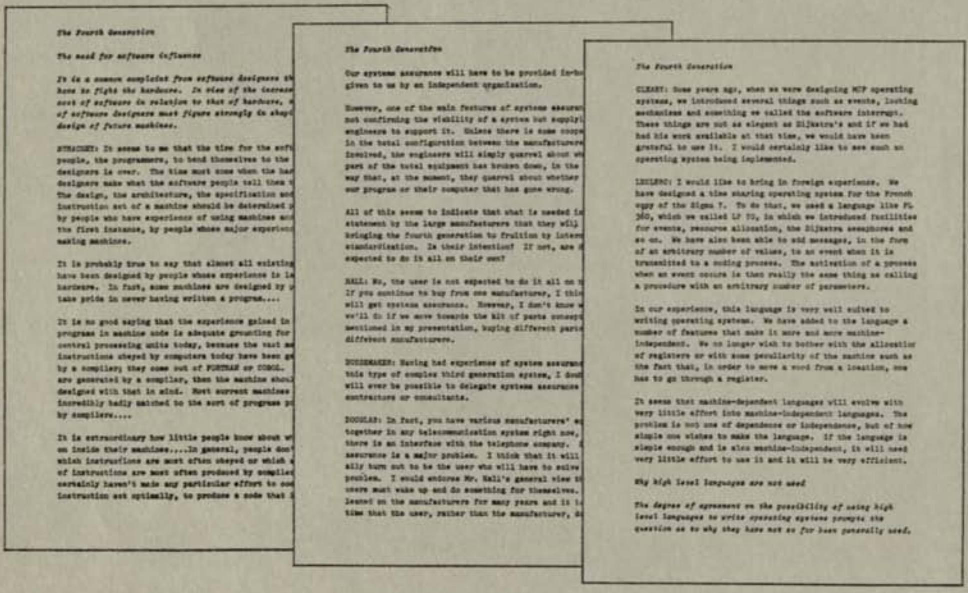
Hierarchy of levels – planning the interfaces, defining the functions · Top down v. bottom up · Large design teams v. small design teams · Communicating the design – elemental breakdown, logic construction, use of design languages, language capabilities required, implementation experience · Reliability – built in hardware, software and human error recovery techniques · Programming tools and techniques – the tool shop environment, test rigs, multiple tests per shot, standardised program components · Performance monitoring and tuning – hardware and software metering devices, user implementation · Controlling performance and quality of large programming teams – milestones, points systems, error recording · Future software techniques – developments expected, current efforts required · The role of education – courses for users, communicating experience **Software Engineering** ☐

Contents

In meeting their basic design criteria of logical flow, authoritative coverage and ease of use, the State of the Art Report contents follow a basic structure which can be defined as a number of levels:



Analysis	Covering the subject as a whole. A distillation of the mass of relevant material assembled, in particular the high level discussions resulting from the meeting of computer experts at the State of the Art Lectures.
Transcripts	Papers on individual aspects of the subject presented at the State of the Art Lecture.
Invited Papers	Additional papers invited from leading computer specialists making significant contributions in the subject concerned.
Bibliography	A selection of references, specially researched for the State of the Art Reports, giving synopses of other relevant works for further research. Preceded by an explanatory section guiding the reader to a suitable choice of works for his needs.
Indexes	Each report is indexed for ease of reference by author and subject. Cumulative indexes cross-referencing all State of the Art Reports make the whole series an easy to use authoritative reference work on informed developments in computing.



The Fourth Generation

The need for software influence

It is a common complaint from software designers th
have to fight the hardware. In view of the increas
cost of software in relation to that of hardware, e
of software designers must figure strongly in shap
design of future machines.

STRACHEY: It seems to me that the time for the soft
people, the programmers, to bend themselves to the
designers is over. The time must come when the har
designers make what the software people tell them t
The design, the architecture, the specification and
instruction set of a machine should be determined p
by people who have experience of using machines an
the first instance, by people whose major experienc
making machines.

It is probably true to say that almost all existing
have been designed by people whose experience is la
hardware. In fact, some machines are designed by p
take pride in never having written a program....

It is no good saying that the experience gained in
programs in machine code is adequate grounding for
central processing units today, because the vast ma
instructions obeyed by computers today have been ge
by a compiler; they come out of FORTRAN or COBOL.
are generated by a compiler, then the machine shoul
designed with that in mind. Most current machines
incredibly badly matched to the sort of programs p
by compilers....

It is extraordinary how little people know about w
on inside their machines....In general, people don'
which instructions are most often obeyed or which s
of instructions are most often produced by compiler
certainly haven't made any particular effort to cod
instruction set optimally, to produce a code that i

The Fourth Generation

Our systems assurance will have to be provided in-ho
given to us by an independent organisation.

However, one of the main features of systems assuran
not confirming the viability of a system but supplyi
engineers to support it. Unless there is some coope
in the total configuration between the manufacturers
involved, the engineers will simply quarrel about wh
part of the total equipment has broken down, in the
way that, at the moment, they quarrel about whether
our program or their computer that has gone wrong.

All of this seems to indicate that what is needed is
statement by the large manufacturers that they will
bringing the fourth generation to fruition by interr
standardisation. Is their intention? If not, are t
expected to do it all on their own?

HALL: No, the user is not expected to do it all on h
If you continue to buy from one manufacturer, I thin
will get systems assurance. However, I don't know w
we'll do if we move towards the kit of parts concept
mentioned in my presentation, buying different parts
diffebent manufacturers.

[illegible]: Having had experience of system assuranc
this type of complex third generation system, I doub
will ever be possible to delegate systems assurance
contractors or consultants.

DOUGLAS: In fact, you have various manufacturers' eq
together in any telecommunication system right now,
there is an interface with the telephone company. S
assurance is a major problem. I think that it will
ally turn out to be the user who will have to solve
problem. I would endorse Mr. Hall's general view th
users must wake up and do something for themselves.
leaned on the manufacturers for many years and it is
time that the user, rather than the manufacturer, d

The Fourth Generation

CLEARY: Some years ago, when we were designing MCP operating systems, we introduced several things such as events, locking mechanisms and something we called the software interrupt. These things are not as elegant as Dijkstra's and if we had had his work available at that time, we would have been grateful to use it. I would certainly like to see such an operating system being implemented.

LECLERC: I would like to bring in foreign experience. We have designed a time sharing operating system for the French army of the Sigma 7. To do that, we used a language like PL 360, which we called LP 70, in which we introduced facilities for events, resource allocation, the Dijkstra semaphores and so on. We have also been able to add messages, in the form of an arbitrary number of values, to an event when it is transmitted to a waiting process. The activation of a process when an event occurs is then really the same thing as calling a procedure with an arbitrary number of parameters.

In our experience, this language is very well suited to writing operating systems. We have added to the language a number of features that make it more and more machine-independent. We no longer wish to bother with the allocation of registers or with some peculiarity of the machine such as the fact that, in order to move a word from a location, one has to go through a register.

It seems that machine-dependent languages will evolve with very little effort into machine-independent languages. The problem is not one of dependence or independence, but of how simple one wishes to make the language. If the language is simple enough and is also machine-independent, it will need very little effort to use it and it will be very efficient.

Why high level languages are not used

The degree of agreement on the possibility of using high level languages to write operating systems prompts the question as to why they have not so far been generally used.

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Mr. Daniel M. Mac Master
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LOOK AHEAD

COMPUTER, COMPUTER? WHAT COMPUTER?

The Phoenix chapter takes seriously the Assn. for Computing Machinery's national drive to curb the "blame the computer" syndrome. When the Allen Piano and Organ Co. ran a radio spot claiming they were overinventoried because of a computer error and were having a sale, the chapter wrote a letter offering to correct the problem free--on condition that if the error turned out to have been made by a human the company would mention this in future advertising. Allen Piano and Organ says it will think twice before blaming a computer in future advertising, but they won't take up the offer in the letter written by ACM's Bob Bemer. They don't use a computer.

PRIVATE LINE USERS OFFERED BULK RATES

AT&T is informally proposing a new bulk rate which would enable virtually all private telephone line users to pool their requirements and thereby cut telephone costs by as much as 80%. The proposal follows the FCC 1970 Telpak decision, allowing other than federally regulated users to share line requirements at lower bulk rates under the Telpak package. Telpak users are fighting that decision in court. They probably will object to the new offer. A spokesman for one large Telpak customer said a settlement is possible if AT&T will give a slightly better price break and a shorter channel lease period to customers using more than 30 voice-grade channels (four years is the minimum currently proposed for this group).

SOME USERS DO WELL WITH PACKAGE SALES

Sales of proprietary software packages, a difficult business to date, is increasingly becoming good business for computer users themselves. It's estimated some 80 of Fortune's top 500 actively market packages. At the recent American Bankers Assn. conference, First Wisconsin Bank of Milwaukee said it has had 45 sales recently of seven banking products; 31 were for a $35K trust package that cost $350K to develop. Lincoln National Bank, Syracuse, has sold 10 of its $25K programs for one-statement banking. It cost $100K to develop.

HOW TO SURVIVE EXTINCTION

No one answers the phone at Telefile Computer Corp. in Newton, Mass., these days for good reason. As a result of a business fielding play that makes Tinkers-to-Evers-to-Chance look like bush league stuff, Telefile, as originally established, doesn't exist any more. But it is alive, in Santa Ana, Calif. If that sounds complicated, it's because it is. Telefile was formed by ex-Honeywellers in 1968 to offer an on-line business computer system and a time-sharing service. It never got wheeling. It foundered. Then last December it acquired interactive Data Systems of Santa Ana which markets communications processors and file controllers, and IDS was renamed Telefile. Then everyone concerned took a hard look at the new company and IDS looked like the best part, so Telefile folded its Newton tent, closed out its original product line, kept IDS', and the whole shebang is now in Santa Ana. IDS, in effect, acquired a company that acquired it, and all that's left of Telefile is its name. Officers of the new Telefile and most directors are former IDS people.

BRYANT DISC COATING IS CRASH RESISTANT

The oxide coating Bryant Computer Products applies to its large discs soon will contain a chemical agent that makes the discs resistant to head crashes. The firm says discs tested withstood periodic touchdowns of around 12 msec at a time without losing data. Touchdowns of up to 10 minutes' duration wiped out data, but there was no damage to either the discs or heads and lost data merely was written back in. Bryant calls the oxide "Marc 5" for magnetic abrasion resistant coating. The "5" is for a five-year guarantee for discs so coated. It will license Marc 5 to makers of both large discs and the smaller disc packs.

SO THERE!

In the previous issue, Computer Machinery Corp. was referred to as "runner-up" to Inforex among makers of keyboard data entry systems. Although the latter has shipped more systems to date, CMC points out that the value of its shipments to date far exceeds those of Inforex. Right on. As of March 31, the total value of CMC's shipments was more than $23.6 million.

SIGNS OF THE TIMES

More than 10% of computer installations in Southern California have closed down in the last year, says KLH Assoc., San Francisco publishers of installation censuses. Of 850 sites listed in last year's count, excluding the federal government, 88 have been withdrawn from 1971's. Consolidations, out-migration, and bankruptcies are blamed for this. And a year ago, 60% said they had spare time available on their machines, but this year it's closer to 80-90%. Still, a significant number of new listings in '71 are service bureaus.

RUMORS AND RAW RANDOM DATA

Although interest is high among computer exhibitors, organizers of the Western Electronic Show and Convention this August in San Francisco have pulled out of the Cow Palace to the more modest confines of Brooks Hall where exhibit space is limited to 750 booths. Wescon has accommodated more than 1,000 booths since 1960...Allen-Babcock Computing, the Los Angeles time-sharing company, is delaying until October taking delivery on a 370/155 which was to have been installed in Palo Alto last April (see Dec. 1, 1970, p. 17). "Contractual obligations" are blamed for the delay...At press time in May, word was that UCC has "official" FCC approval of its Datran digital network. Public word may be out before mid-June, but delays may stem from the "enormous writing job" involved...A Midwest memory manufacturer who asked employees for suggestions to help the planning committee anticipate tomorrow's technological needs received this interesting piece of advice: "subscribe to all the science fiction magazines."

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ACM Association for Computing Machinery

1971 April 26

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RBemer

R. W. Bemer, for the
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A C M

RWB:eh

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Tom FYI
A/letters
cc: Bob Bemer

RECEIVED
MAR 15 1971
PASADENA

March 12, 1971

Mr. Robert B. Forest, Editor
DATAMATION Magazine
94 S. Los Robles Avenue
Pasadena, Calif. 91101

Dear Mr. Forest:

I have noted with interest a certain passage in the just-arrived March 15, 1971 issue of DATAMATION. This passage is on the back page of the blue insert called "Look Ahead". It reads as follows:

> *"...A well known, influential computer scientist active instandards work discovered to his horror recently that he couldn't figure out how to hook up to a time-sharing service via an acoustical coupler from his house. He has a Princess telephone. A standard dilemma?..."*

I wonder if the telephone was actually something other than the Princess type. The Bell System has another offering, called a Trimline, and it may be that that particular telephone was actually the item in the computer scientist's home.

As far as I know, the Princess telephone is a standard Bell System 500 series, made more compact, and fitted with a standard 500 series handset. The Trimline telephone is somewhat different in packaging, featuring a telephone dial built into its handset. Incidentally, the Trimline is harder to couple into a modem than the 500 series; hence my inquiry.

It may be of interest to you to know that we, here at Applied Communications Corporation, are working with telephonic communication systems for the deaf. One of our products is PHONETYPE Terminal Unit; it is an acoustic-inductively coupled modem, enabling the operation of a teletypewriter in conjunction with an ordinary Bell System 500 series telephone. Many such units are now in use all over the U.S.A., in homes and offices where deaf people are located. At any rate, our equipment has been quite highly successful in operation, and the deaf owners concerned are deeply appreciative for this means of communication with each other.

Needless to say, I am wondering, too, as to whether telephones are well standardized. In fact, I have had similar experience, with our acoustic-inductive coupled computer modem, that the above mentioned computer scientist had in trying to reach a timeshare service from his telephone.

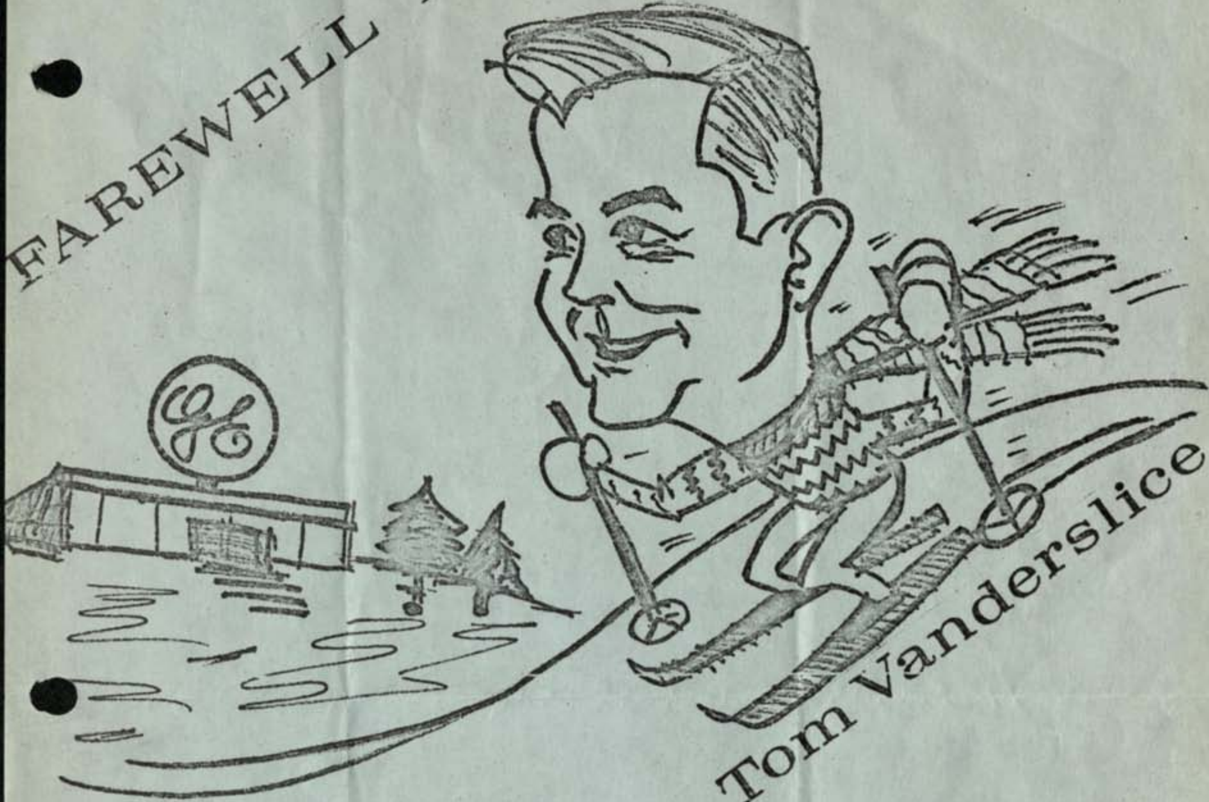
Yours sincerely,

RHWeitbrecht

Robert H. Weitbrecht

cc. Dr. J. C. Marsters

FAREWELL TO



Dr. Tom Vanderslice

TUESDAY

SEPTEMBER 8, 1970

MOUNTAIN SHADOWS - HOPI ROOM

7:00 P. M. Cocktails --- Cash Bar

8:00 P. M. Dinner --- Buffet

$8. 50 Singles $17. 00 Couples + $8 DRINKS

Reservations:	Annette	263-3480
	Corinne	263-3597

ISO

International Organization for Standardization
Organisation Internationale de Normalisation
Международная Организация по Стандартизации

CENTRAL SECRETARIAT
1, rue de Varembé
1211 GENEVA 20, Switzerland

Telephone 34 12 40
Cable address : ISORGANIZ

Our Ref. : ISO/INFOCENT

26 August 1970

Mr. Vico E. Henriques
Director of Standards
BEMA
Business Equipment Manufacturers Association
1828 "L" Street N.W.
Washington, D.C. 20036

Dear Mr. Henriques,

Many thanks for sending me Bob Bemer's paper on "Information Processing Standards". It is quite a lively paper and I, as well as my Public Relations people, have very much enjoyed reading it. I am sure Bob would not mind our using part of it in the ISO Bulletin.

With best regards,

Yours sincerely,

Olle Sturen
Secretary-General

DR.-ING. KARL RIHACZEK

638 BAD HOMBURG, den August 12, 1970
Fabriciusring 15
Tel. 06172/42177

Dr. R. W. Bemer
c/o Advanced Development and
Resources Planning Division

13430 North Black Canyon Highway

Phoenix, Arizona 85029

U. S. A.

Dear Bob,

let me thank you for your book. The fact that you had thought of giving it to me pleased me more than you would believe. As a matter of fact, I read it instantly, almost immediately after walking out of the Hair musical. (Look what importance I attributed to it!)

Now too much time has passed for me to remember details, but generally speaking it gave me the impression that the ALGOL-fathers had behaved more rationally and reasonably than the campfire stories would insinuate. Of course the ALGOL-fathers as most other people tend to be more rational in writing letters than otherwise. So compiling the history from letters may be leaning toward the fair side (if irrational is considered as bad)and still be justifiable and sufficient. - Smart!

When you handed me the book, I had the impression that you referred to my book. I should like to mail a (German) copy to you, but would like to have your answer first.

Sincerely yours,

Karl Rihaczek

RECEIVED
1970 AUG 17
R. W. BEMER

GENERAL ELECTRIC

Information Systems
Patent Operation

DIAL COMM• 8*223-1031 DATE• July 2, 1970

DEPT.• Group Patent Operation

ADDRESS• Bridgeport, Conn. COPIES•

SUBJECT• Computer Decisions - Appointment to Editorial Board

Mr. R. W. Bemer
Mail Drop G-2
PHOENIX

Dear Bob:

This is a very belated but formal addition to your file recording the fact that, following conversation with you developing the facts in connection with your appointment as a member of the Editorial Board of Computer Decisions, I advised you that I saw no conflict of interest problems.

I am pleased, indeed, that such an able spokesman is in a position to add one more podium to his pathways of communication.

Very truly yours,

George V. Eltgroth

George V. Eltgroth
Patent Counsel
Information Systems Group

mrg

RECEIVED
1970 JUL 7
R. W. BEMER

KSU KANSAS STATE UNIVERSITY *Manhattan, Kansas 66502*

COMPUTING CENTER
CARDWELL HALL

June 19, 1969

COPY

Cranbrook School
Bloomfield Hills
Michigan 48013

ATTENTION: Alumni Office

Dear Archer:

I was sorry to learn from the recent edition of the Alumni Directory that Bob Bemer had dropped out of sight. The enclosed item xeroxed in its entirety from the June 1969 issue of Communications of the Association for Computing Machinery should be self-explanatory. It does give you Bob's current address and current employment.

My address, too, is about to change. Having served for one year as Director of the Computing Center at Kansas State University in Manhattan, I am moving to Boulder, Colorado. There I will be Head of the Computing Facility at the National Center for Atmospheric Research. We have just made a contract on a house so I can give you my home address--2200 Kohler Drive, Boulder, Colorado 80302. We hope to be settling in Boulder about the first of August. Kansas has been fine and we are sorry to leave it; but, who can resist a chance to settle in Boulder?

Please send a copy of this communication to Jerry McMechan the class secretary for 1938.

Sincerely yours,

Ted

T. W. Hildebrandt
Director

TWH:sss

cc: Mr. Bob Bemer ✓ Sorry - had to do it - but you'll probably be asked for contributions!

Enclosure

P.S. I wonder how many Cranbrook alumni besides Bemer and myself are engaged in computers? I think that at one time Bemer was proposing a get together of these alumni at an ACM or Joint Computer conference.

The pleasure of your company is requested

at a reception in honor of

The Panel on Science and Technology

Tuesday, the twenty-seventh of January, 1970

at five o'clock

Room B 339, Rayburn House Office Building

Washington, D. C.

R.s.v.p.
202-225-5438

Congres[illegible] the United States
House of Representatives
COMMITTEE ON SCIENCE AND ASTRONAUTICS
WASHINGTON, D.C. 20515

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M. C.

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1970

AIR MAIL

Mr. R. W. Bemer
General Electric Company
Mail Drop M - 2
13430 N. Black Canyon Highway
Phoenix, Arizona 85029

The Committee on Science and Astronautics
United States House of Representatives
cordially invites you
to attend
the Eleventh Meeting
of the
Panel on Science and Technology
Rayburn House Office Building
Room 2318
January 27-29, 1970

R.S.V.P.
Area Code 202
225-5438

E PLURIBUS
UNUM

MEMBERS OF THE PANEL ON SCIENCE AND TECHNOLOGY

Ivan L. Bennett, Jr., New York University [medicine]

Harrison S. Brown, California Institute of Technology [geology]

A. Hunter Dupree, Brown University [history]

Martin Goland, Southwest Research Institute [applied mechanics]

Walter J. Hesse, Ling-Temco-Vought [aircraft and missile systems]

Thomas F. Malone, Travelers Insurance Cos. [meteorology]

W. Albert Noyes, Jr., University of Texas [chemistry]

Roger Revelle, Harvard University [geophysics]

Richard J. Russell, Louisiana Coastal Studies Institute [physical geography]

Athelstan Spilhaus, Franklin Institute of Science [oceanography]

H. Guyford Stever, Carnegie Institute of Technology [aeronautical engineering]

James A. Van Allen, State University of Iowa [physics]

Fred L. Whipple, Smithsonian Astrophysical Observatory [astronomy]

John T. Wilson, University of Chicago [psychology]

Maurice J. Zucrow, Purdue University (ret.) [jet propulsion]

COMMITTEE ON
SCIENCE AND ASTRONAUTICS
U.S. HOUSE OF REPRESENTATIVES

Eleventh Meeting

With the

PANEL ON SCIENCE AND TECHNOLOGY

January 27, 28, an

Room 231

RAYBURN HOUSE OF

MR. BEMER

General Electric

MEMBERS OF THE PANEL ON SCIENCE AND TECHNOLOGY

Ivan L. Bennett, Jr., New York University [medicine]

Harrison S. Brown, California Institute of Technology [geology]

A. Hunter Dupree, Brown University [history]

Martin Goland, Southwest Research Institute [applied mechanics]

Walter J. Hesse, Ling-Temco-Vought [aircraft and missile systems]

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Athelstan Spilhaus, Franklin Institute of Science [oceanography]

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James A. Van Allen, State University of Iowa [physics]

Fred L. Whipple, Smithsonian Astrophysical Observatory [astronomy]

John T. Wilson, University of Chicago [psychology]

Maurice J. Zucrow, Purdue University (ret.) [jet propulsion]

COMMITTEE ON SCIENCE AND ASTRONAUTICS U.S. HOUSE OF REPRESENTATIVES

Eleventh Meeting

With the

PANEL ON SCIENCE AND TECHNOLOGY

January 27, 28, and 29, 1970

Room 2318

RAYBURN HOUSE OFFICE BUILDING

Theme: THE MANAGEMENT OF INFORMATION AND KNOWLEDGE

To assess the impact of computers, cybernation and communications on modern day and future societies, identify problem areas requiring legislative emphasis and to explore attendant international implications.

JANUARY 27, 1970

10:00 A.M. OPENING SESSION

Opening Remarks

Hon. George P. Miller, Chairman
Hon. John W. McCormack, Speaker, U.S. House of Representatives
Hon. James G. Fulton, Ranking Minority Member
Hon. Emilio Q. Daddario, Chairman, Subcommittee on Science, Research and Development

The Keynote: Mr. McGeorge Bundy, President, Ford Foundation, New York

Moderator: Dr. Daniel Bell, Professor of Sociology, Harvard University, and Chairman, Commission of the Year 2000, Academy of Arts and Sciences

2:00 P.M. COMPUTERS, COMMUNICATIONS AND THE ECONOMY

To explore the effects of the computer, computerized automation and communications on the national and world economies.

Summary Remarks

Mr. Herman Kahn, Director, Hudson Institute, Croton, New York
Professor Stafford Beer, Development Director, International Publishing Corporation, United Kingdom and visiting Professor of Cybernetics in the Business School of Manchester University

JANUARY 28, 1970

10:00 A.M. THE INDIVIDUAL, THE STATE AND THE MACHINE

To evaluate the place of the individual in the pluralistic state in the light of evolving computer and communications technologies and to identify the safeguards necessary to protect his privacy.

Opening Remarks

Hon. George P. Miller, Chairman
Hon. Carl Albert, Majority Leader, U.S. House of Representatives

The Keynote: Hon. Earl Warren, Former Chief Justice of the United States

Summary Remarks

Mr. Daniel J. Boorstin, Director, National Museum of History and Technology, Smithsonian Institution
Dr. Paul Armer, Director, Computation Center, Stanford University, Stanford, California
W110 Guest Panelist (to be selected)

2:00 P.M. EDUCATION FOR A CHANGING WORLD

To assess the effect of the computer and communications technologies on educational systems and the concept of individualism in education.

Summary Remarks

Dr. George Kozmetsky, Dean, University of Texas, College of Business Administration
Dr. Thomas F. Green, Director, Educational Policy Research Center, Syracuse University, New York
Dr. Fernando Garcia-Roel, Rector, Instituto Technologico y de Estudios Superiores de Monterey, N.L., Mexico

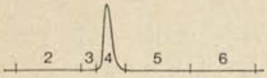
JANUARY 29, 1970

10:00 A.M. SUMMARY VIEWS AND COMMENTS

Observations

Prof. Ioan D. Stanescu, Bucharest Technical University, and Counsellor, National Council of Scientific Research for Romania
Dr. L. Harvey Poe, Jr., Firm of Howard and Poe, Washington, D.C.

Closing Remarks: Hon. George P. Miller, Chairman



Mobility of PhD's before and after the Doctorate with Associated Economic and Educational Characteristics of States. Office of Scientific Personnel, National Research Council. National Academy of Sciences, Washington, D.C., 1971. xvi, 200 pp., illus. Paper, $5.95. Career Patterns Report No. 3.

Moon Rocks and Minerals. Scientific Results of the Study of the Apollo 11 Lunar Samples with Preliminary Data on Apollo 12 Samples. Alfred A. Levinson and S. Ross Taylor. Pergamon, New York, 1971. xiv, 222 pp., illus. $11.50.

NDEA Fellowships for College Teaching, 1958–68. Title IV, National Defense Education Act of 1958. Clarence B. Lindquist. U.S. Office of Education, Washington, D.C., 1971 (available from Superintendent of Documents, Washington, D.C.). x, 180 pp. Paper, $2.

The Nature of Atoms. Alan Holden. Oxford University Press, New York, 1971. xii, 92 pp., illus. Paper, $2.50.

The Nature of Reinforcement. A symposium, Pittsburgh. Robert Glaser, Ed. Academic Press, New York, 1971. x, 380 pp., illus. $13.

The New Ego. Pitfalls in Current Thinking about Patients in Psychoanalysis. Nathan Leites. Science House, New York, 1971. x, 302 pp. $15.

Numerical Weather Prediction. George J. Haltiner. Wiley, New York, 1971. xviii, 318 pp., illus. $10.95.

On Being Stoned. A Psychological Study of Marijuana Intoxication. Charles T. Tart. Science and Behavior Books, Palo Alto, Calif., 1971. xviii, 334 pp., illus. $7.95.

Organic Peroxides. Vol. 2. Daniel Swern, Ed. Wiley-Interscience, New York, 1971. xii, 964 pp., illus. $39.95.

The Origins of Theoretical Population Genetics. William B. Provine. University of Chicago Press, Chicago, 1971. xii, 202 pp. $7.75. Chicago History of Science and Medicine.

Outcasts from Evolution. Scientific Attitudes of Racial Inferiority, 1859–1900. John S. Haller, Jr. University of Illinois Press, Urbana, 1971. xvi, 228 pp., illus. $7.50.

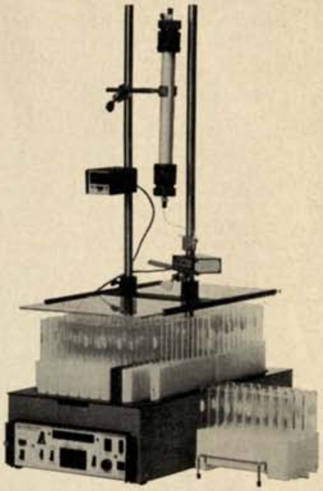
Photochemistry. Vol. 2. A Review of the Literature Published between July 1969 and June 1970. D. Bryce-Smith, A. Gilbert, W. M. Horspool, and D. Phillips. Chemical Society, London, 1971. xviii, 818 pp., illus. £12. A Specialized Periodical Report.

Place and People. An Ecology of a New Guinean Community. William C. Clarke. University of California Press, Berkeley, 1971. xiv, 266 pp., illus. $9.

Plants and Man. Samuel R. Rushforth and William D. Tidwell. Burgess, Minneapolis, 1971. xii, 200 pp., illus. Spiral bound, $4.75.

Polyhedron Models. Magnus J. Wenninger. Cambridge University Press, New York, 1971. xii, 208 pp., illus. $14.50.

Power Generation and Environmental Change. Symposium of the Committee on Environmental Alteration, American Association for the Advancement of Science, Boston, December 1969. David A. Berkowitz and Arthur M. Squires, Eds. M.I.T. Press, Cambridge, Mass., 1971. xxiv, 440 pp., illus. $16.95.



Mäkelä, Anne Cross, and T. U. Kosunen, Eds. Academic Press, New York, 1971. xx, 472 pp., illus. $21.

Cellular Interactions in the Immune Response. A convocation, Buffalo, N.Y. June 1970. S. Cohen, G. Cudkowicz, and R. T. McCluskey, Eds. Karger, Basel, 1971 (U.S. distributor, Phiebig, White Plains, N.Y.). viii, 310 pp., illus. $26.05.

Cognitive Development and Epistemology. A conference, Binghamton, N.Y., September 1969. Theodore Mischel, Ed. Academic Press, New York, 1971. xvi, 424 pp. $16.40.

The Coming Revolution in Medicine. David D. Rutstein. M.I.T. Press, Cambridge, Mass., 1971. xii, 180 pp., illus. Paper, $1.95. Reprint of the 1967 edition.

The Common Base of Social Work. Harriett M. Bartlett with the assistance of Beatrice N. Saunders. National Association of Social Workers, New York, 1970. 224 pp., illus. Paper, $4.

Computers and Crisis. How Computers Are Shaping Our Future. A conference, New York, 1970. R. W. Bemer, Ed. Association for Computing Machinery, New York, 1971. x, 413 pp. Paper, $7.50; cloth, $15.

Current Topics in Clinical and Community Psychology. Vol. 3. Charles D. Spielberger, Ed. Academic Press, New York, 1971. xii, 220 pp., illus. $12.50.

Decision-Making on the Efficacy and Safety of Drugs. A conference, Elkridge, Md., May 1970. Joseph D. Cooper, Ed. Interdisciplinary Communication Associates, Washington, D.C., 1971. xviii, 194 pp., illus. Paper, $5.50. Philosophy and Technology of Drug Assessment, vol. 1.

Defined Immunofluorescent Staining. A conference, Stockholm, May 1970. Ernst H. Beutner, Ed. New York Academy of Sciences, New York, 1971. 530 pp., illus. Paper, $34. *Annals of the New York Academy of Sciences*, vol. 177.

The Domesday Geography of Midland England. H. C. Darby and I. B. Terrett, Eds. Cambridge University Press, New York, ed. 2, 1971. xviii, 490 pp., illus. $32.50.

East African Mammals. An Atlas of Evolution in Africa. Vol. 1. Jonathan Kingdon. Academic Press, New York, 1971. x, 446 pp., illus. $35.

Ecological Isolation in Birds. David Lack. Main illustrations by Robert Gillmov. Harvard University Press, Cambridge, Mass., 1971. xii, 404 pp. $12.

Ecology of Fresh Water. Alison Leadley Brown. Harvard University Press, Cambridge, Mass., 1971. xii, 130 pp., illus. $4.

The Economics of Educational Costing. Inter-Country and Inter-Regional Comparisons. Part 3B, Conclusions, Bibliography, and Index. Manuela Ferreira Leite, Patrick Lynch, Keith Norris, John Sheehan, and John Vaizey. Centro de Economica e Finanças, Lisbon, 1970. 58 pp. Paper.

Effects of High-Power Laser Radiation. John F. Ready. Academic Press, New York, 1971. xiv, 443 pp., illus. $17.50.

Existential Humanistic Psychology. Thomas C. Greening, Ed. Brooks/Cole, Belmont, Calif., 1971. viii, 200 pp. Paper, $6.

The Face of Emotion. Carroll E. Izard. Appleton-Century-Crofts (Meredith), New York, 1971. xii, 468 pp., illus. $14.95. Century Psychology Series.

Frontiers of Quantitative Economics. A meeting, New York, 1969. Michael D. Intriligator, Ed. North-Holland, Amsterdam, 1971. xii, 472 pp., illus. $26.25. Contributions to Economic Analysis, vol. 71.

Genetics Lectures. Vol. 2. Ralph Bogart, Ed. Published for Oregon State University Genetics Institute by Oregon State University Press, Corvallis, 1971. 126 pp., illus. Paper, $4.

Group Selection. George C. Williams, Ed. Aldin-Atherton, Chicago, 1971. xii, 210 pp., illus. Cloth, $6.95; paper, $2.95. An Atherton Controversy.

Grundriss der Vogelzugskunde. Ernst Schüz with the collaboration of Peter Berthold, Eberhard Gwinner, and Hans Oelke. Parey, Berlin, ed. 2, 1971. x, 392 pp., illus. DM 88.

Handbook of Fluorescence Spectra of Aromatic Molecules. Isadore B. Berlman. Academic Press, New York, ed. 2, 1971. xiv, 474 pp., illus. $19.

Homotopy Theory. George W. Whitehead. Compiled by Robert J. Aumann. M.I.T. Press, Cambridge, Mass., 1971. x, 124 pp., illus. Paper, $1.95. Reprint of the 1966 edition.

Hour of the Beaver. Hope Sawyer Buyukmihci. Rand McNally, Chicago, 1971. 176 pp., illus. $5.95.

In the Matter of J. Robert Oppenheimer. Transcript of Hearing before Personnel Security Board and Texts of Principal Documents and Letters. U.S. Atomic Energy Commission. M.I.T. Press, Cambridge, Mass., 1971. xii, 1084 pp. Cloth, $17.50; paper, $5.95. Reprint, with additions of the 1954 editions.

International Encyclopedia of Pharmacology and Therapeutics. Section 36, Hematopoietic Agents. J. C. Dreyfus, Ed. Vol. 1, Hematinic Agents. With contributions by A. Aschkenasy and ten others. Pergamon, New York, 1971. xxxiv pp., 380 pp., illus. $18.75.

International Environmental Action. A Global Survey. Thomas W. Wilson, Jr. Dunellen, New York, 1971. xviii, 364 pp. $12.50.

Introduction to Phase Transitions and Critical Phenomena. H. Eugene Stanley. Oxford University Press, New York, 1971. xx, 308 pp., illus. $9.50.

Laser Lines in Atomic Species. C. S. Willett. Pergamon, Oxford, 1971. Paper, £1.75. Progress in Quantum Electronics, vol. 1, part 5, pp. 273–358.

Liver Cancer. A conference, London, June 1969. International Agency for Research on Cancer, Lyon, 1971 (U.S. distributor, American Public Health Association, Washington, D.C.). 176 pp., illus. $10. IARC Scientific Publications, No. 1.

Mass Spectrometry. Vol. 1. A Review of the Literature Published between June 1968 and June 1970. D. H. Williams and eight others. Chemical Society, London, 1971. x, 324 pp., illus. £7.

Mendelian Inheritance in Man. Catalogs of Autosomal Dominant, Autosomal Recessive, and X-Linked Phenotypes. Victor A. McKusick. Johns Hopkins Press, Baltimore, ed. 3, 1971. xlvi, 738 pp. $17.50.

Bob:
Did you get this earlier?
Lee

BOOK REVIEW

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- X IEEE SPECTRUM
  Institute of Electrical and Electronics Engineers
- X ILLUMINATING ENGINEERING
  Illuminating Engineering Society
- X JOURNAL OF INDUSTRIAL ENGINEERING
  American Institute of Industrial Engineering
- X JOURNAL OF METALS
  American Institute of Mining, Metallurgical and Petroleum Engineers
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  American Society of Mechanical Engineers
- X MINING ENGINEERING
  American Institute of Mining, Metallurgical and Petroleum Engineers

March 1972

COMPUTERS AND CRISES: HOW COMPUTERS ARE SHAPING OUR FUTURE. Edited sessions of ACM 70, a Conference held September 1-3, 1970 in New York City.
Edited by R.W. Bemer. 1971, Association for Computing Machinery, 1133 Avenue of the Americas, New York, N.Y. 10036. 401 pages, paper. $7.50.

This is a highly edited version of the presentations of the conference which started a dialogue between the computing community and the sectors of the economy most heavily affected by computers. Another objective was to define the computer requirements for the 1970's. Communications, education, finance, government, health and welfare, transportation, urban, and industry as end users discuss their needs. The final section is devoted to the professions, i.e., engineering, humanities, law, management, medicine, and science.

WE WOULD BE PLEASED TO RECEIVE COPIES OF ANY OTHER NEW PUBLICATIONS WHICH MIGHT BE OF INTEREST TO ENGINEERS

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VAN DER SCHALIE

n, Ann Arbor

Crucial Numbers

Geography and a Crowding World. A Symposium on Population Pressures upon Physical and Social Resources in the Developing Lands, University Park, Pa., Sept. 1967. WILBUR ZELINSKY, LESZEK A. KOSINSKI, and R. MANSELL PROTHERO, Eds. Oxford University Press, New York, 1970. xvi, 602 pp., illus. $10.95.

Ironically, a three-year delay makes the publication of these conference proceedings more timely. The book outclasses this year's hundred bad books on the subject of a crowding world. It is coherent and broad-minded—better still, mind-stretching.

The conference topic, "population pressure upon resources," eluded the attempt at a single definition, but the participants did arrive at a consensus that it entails not one worldwide threshold of overpopulation, but three thresholds, each of them now critical somewhere. There is a lower threshold of insufficient population: "A certain degree of demographic pressure is necessary for man to seek to improve the utilization of his resources" (Tricart). There is an intermediate threshold above which one goes from extensive exploitation (long fallow) to intensive systems of cultivation which conserve or enhance environmental possibilities (soil fertility, streamflow processes, variability of species, and so on—see the contribution of Boserup or Mabogunje); and there is a more widely discussed upper threshold beyond which food crises recur, and at which urban assimilation capacities become critical (Beaujeu-Garnier, C. G. Clarke). As societies move along this path of development, they seem to go through an "optimum period" between the middle and upper thresholds, "in which one may have the impression of prosperity for one or two generations" (Pierre George).

The thresholds of population density or carrying capacity are not everywhere the same, and some geographical environments are more tolerant or more resilient than others. Many regions of "population pressure" are at the intermediate threshold, where a cultural and technical transformation must take place. "The passage from one equilibrium to another is precarious and always accompanied by serious tensions" (Tricart).

The conference was an attempt to restore a sense of priorities among geographers, by focusing on the interaction of fundamental human problems—the production of enough food (and other goods), its equitable distribution, and rates of reproduction. For centuries these questions were recognized as the vital ones in "political economy." Since 1900, they have been progressively zoned out of the offspring social sciences—economics, political science, sociology—whose practitioners, ever more ramified, have lost their capacity to cope with earthy variables such as mosquitoes, microbes, genes, proteins, soils, and rainfall (Philip Porter). Meanwhile, the bulk of geographers and ethnologists have dispersed into far corners of the globe to stake out private scholarly claims. (There have been individual exceptions, of course, of the stature of Isaiah Bowman, Owen Lattimore, Ruth Benedict, and Gilbert White.) The 1967 conference was a major step toward reversing the trend toward exotic fragmentation, and "reintegrating" geography. The participants were of a dozen nationalities, with strong input from America, France, and Poland. Several were elder statesmen of their faculties, who formulated crucial problems of distribution of wealth and the ecological balance long before these hit the comic strips, *Fortune*, and the *National Geographic*. The geographical coverage of the contributions is remarkable: de Planhol compares societies along the mountain backbone of Eurasia; Brookfield compares social systems in Malagasy, Mauritius, and New Guinea; Kempton Webb reports ten years of study of northeast Brazil, and Gerhard Sandner of Costa Rica. Urban population structures are discussed for cities of India, Japan, and Jamaica. The historical perspective is also broad: Pokshishevskii takes the millennial view, Bonasewicz and Taeuber a scale of generations; and William Vogt reminds us of our short collective memory ("What ever happened to Krilium?"—the miracle fertilizer reported at the AAAS meeting of 1951). The bibliographies extend the horizons still farther.

In contrast to any textbook of world geography, this volume is an impressive answer to the question (fair enough), What are geographers good for? If they continue in this direction, putting first things first, posing the questions carefully, comparing, exploring the political implications, then Pierre George's comment is indeed prescient: "It is not surprising any longer that geography is considered by some to be a dangerous discipline."

The medium does not do full justice to the message. As with other "proceedings," one doesn't read the 600 pages cover to cover. But anyone who dips into this work frequently enough or long enough becomes another Jacob wrestling with the angel. He confronts the issue of his own relevance and the problem of reintegrating or collapsing the fragmented "sciences."

Is there no new medium for capturing the magnificent spectacle of 40 people thinking? A good scholarly symposium is a Woodstock and wants sharing. In this particular case, revolutions, political and technological, are the substance. Yet, as the editors comment, "despite deep anxieties and a lack of agreement on remedial strategies, there was almost no gnashing of teeth and crying of havoc." The humanity of this work, in the midst of the clamor, calls for a more powerful means of expression.

SHERRY OLSON

Department of Geography and Environmental Engineering, Johns Hopkins University, Baltimore, Maryland

Psychoanalytic Theory

Freud and Philosophy. An Essay on Interpretation. PAUL RICOEUR. Translated from the French by Denis Savage. Yale University Press, New Haven, Conn., 1970. xviii, 574 pp. $15. Dwight Harrington Terry Foundation Lectures, vol. 38.

This book, with its many insights into Freud, psychoanalysis, religion, and the theoretical structure of psychoanalytic psychology, is both stimulating and frustrating. The conceptual framework is difficult and the argument somewhat elusive, being a mixture of Hegelianism and phenomenology with some cogent comments about the causal nexus of behavior as distinguished from the reasons that are often given for behavior. The distinction attempted between causes and reasons is not spelled out in the usual terminology employed in the philosophy of science. Rather, the terms "archeology" and "teleology" are used to express these concepts. Although Ricoeur, a philosopher and professor at the University of Paris, disarmingly disclaims expertise as a psychoanalyst, or even having been psychoanalyzed, it is apparent that his theoretical knowledge about Freudian analysis (to which he restricts his discussion) is greater than that of mos

Selling well

Book on computers by PCO-based employee

A book on computers edited by a PCO-based Honeywell employee has been published by the Association for Computing Machinery (ACM).

Robert Bemer

The book is titled "Computers and Crisis: How Computers are Shaping our Future" and is edited by Robert W. Bemer, Staff Consultant to the Director, Advanced Systems and Technology organization (ASTO).

The 400-page volume condenses more than 2,000 pages of dialogue from the 1970 ACM annual conference. It covers the free exchange of ideas and questions from 17 main sectors of the conference, including education, the communications industry, government, transportation, law, humanities, medicine, science and others.

Recent reviews have been very complimentary. A New York Times reviewer said, "It is a valuable book for the doctor, lawyer, plumber or Indian chief who is interested in what directions man's greatest tool may be taking him."

Bemer said the book is selling quite well. It is available from the ACM in paperbound version at $7.50 or hardcover at $15.

Bemer began his computing career at the RAND Corp. in 1949. After serving with RAND and other computer manufacturers including IBM, he joined Bull-GE in 1965 as Consultant to the General Manager in Paris. He was assigned to Phoenix a year later and has been here since.

Bemer received an AB degree in mathematics from Albion College in 1940. He has been involved in national and international standardization of computer languages, vocabulary and character sets since 1960. He is a Fellow of the British Computing Society, a member of the ACM and the Data Processing Management Association. In addition to the book, Bemer has published numerous articles relating to his field.

* * *

EW – I sent copy of review to Lee Revens– [illegible]

three pages in length, in which he tells the reader how to write a speech. Typical chapter headings–What is a Speech, The Speech Outline, Writing a Lean Speech, and Watch Your Language–tersely indicate the unit of thought developed in each chapter. Almost all of the chapters end with a summary checklist of imperatives. For example, Chapter 10, Your Style of Writing, directs the reader to avoid passive voice, use the first person pronoun, write spontaneously, use triads, and vary the pace of writing.

In Part II, the summary checklists are repeated. In addition, there are exercises in "lean writing" (author's term), an explanation of commonly used figures of speech, a list of symbols for marking copy, a brief discussion on mistakes in grammar and rules of punctuation, and a suggested list of books to make up a basic library for speech writers.

A directory of information sources, made up of 45 general categories, lists business, professional, and industrial associations and governmental agencies from which one may obtain material for topics such as aerospace, education, foreign trade, utilities, etc.

This little book fulfills its intent of being a practical reference tool for the busy professional or business man. Written in the "lean" language that the author advocates, it includes many practical hints and valuable insights into the writing and delivery of a speech, but it is not, nor does it pretend to be, a complete guide. Perhaps one of its most serious omissions is the treatment of speech organization. A chapter on the speech outline states that "the purpose of an outline is to organize and channel thoughts along a central theme." Other than explaining a note-jotting technique in preparing the outline, almost no attention is given to principles and methods of speech organization.

One could argue with the author's injunction that all speeches should be written, but not read to the audience or memorized. Many effective speakers, of course, extemporize from carefully prepared outlines. In order to preserve preciseness of language and accuracy of data, some speakers insist on reading from a manuscript with no loss in audience attention or interest. It is a generally accepted principle by both ancient rhetoricians and modern authorities that the preparation and delivery of a speech must be adapted to topic, the occasion, the audience, and the speaker himself.

The Speech Writing Guide is a handy, helpful reference for those who make speeches.

Dr. Roy C. Nelson
Associate Dean of Humanities
Colorado State University

COMPUTERS AND CRISIS: Proceedings of a 1970 Conference of the Association for Computing Machinery. R. W. Bemer, editor. Association for Computing Machinery (1971). 401 pages and index. Hard cover, $15; soft cover, $7.50.

This is a book that should not be judged by its cover. Its title is unfortunate, suggesting a popularization or a superficial journalistic treatment of a subject that has already suffered from oversimplification. Rather, it is the edited proceedings of a professional conference, and it can serve as a source book of authoritative information on the state-of-the-art in many different areas of computing.

Computers and Crisis is an edited report of a 1970 conference of the Association for Computing Machinery. Unlike many such meetings, however, the general level of discussion was nontechnical, and the intended audience included not only professionals but also interested laymen. The sessions covered such diverse topics as computer-assisted instruction for nursery schoolers, the role of computers in unsnarling the Wall Street back office mess, and the present and future use of computers in law and medicine.

Robert Bemer is to be congratulated for able, selective editing. Overly technical or repetitive portions have been replaced with a summary. The reader is spared intrusions ending *–ED.*

This is not a book which a technical writer should read at one sitting. But it is important that the technical writer be familiar with the computer since it will be his responsibility to explain its pervasive influence and its potential. He would do well to keep this book on his reference shelf.

The production of the book was itself an application of the computer. It was photo-offset from a typescript produced by an on-line editing system. There is a welcome absence of typographical errors in the text. But the reviewer's memory of Latin is irritated by the blurb: "In 400 pages of text, there isn't a single formulae." Can there ever be?

Robert C. McClenon
Office of Standard Reference Data
National Bureau of Standards

ANNUAL REVIEW OF INFORMATION SCIENCE AND TECHNOLOGY, Volume 6. Carlos A. Cuadra, editor. Chicago: Encyclopaedia Brittanica, Inc. (1971). 524 pages including a combined index for this and previous volumes. $17.50.

For the past six years, the American Society for Information Science has been responsible for publishing an annual volume reviewing the latest developments in information science and technology. These annual examinations are based on appraisal by selected experts of the significant work within their particular areas. These authorities examine the latest reports, journal articles, and other published material on research in laboratory, experimental or pilot programs, and on other developments that offer assessments on the worth or significance of the activities surveyed. Published in 1971, Volume 6 reviews work made publicly available during the previous year. Some reports and documents published earlier but not previously appraised are also evaluated in the current volume.

Volume 6 is divided into four sections, with a total of 12 chapters. The major sections are titled "Planning Information Systems and Services," "Basic Techniques and Tools," "Applications," and "The Profession."

Most of the 12 reviews of the latest activities in information science and technology are probably too specialized for the average reader of *Technical Communication.* Information specialists, librarians, documentalists, educators, and researchers in information science, however, would be interested in this annual review because it could help keep them current with the latest knowledge and activities in their fields of interest. Each paper carries an extensive bibliography of the current literature for the particular field reviewed. In this respect, it is likely that the list of references would be of more value than the appraisal presented, because the appraisal papers–as is the case in practically all annual reviews of whatever field–take time only to mention an activity without much critical analysis and assessment. For those readers who need or want this current awareness, this volume may be of some value.

Herman M. Weisman
Office of Standard Reference Data
National Bureau of Standards

NATURE

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24 March 1972

We trust you will be interested in the attached cutting from our issue for 24 March 1972

Bob:
Cheers. Nature is the most prestigious mag there is!
Lee

Computers and People

Computers and Crisis: How Computers are Shaping Our Future. Edited by R. W. Bemer. Pp. 401. (Association for Computing Machinery: New York, 1971.)

UNLIKE the usual proceedings of technical conferences, this is a condensed report, which summarizes the principal points raised by the numerous contributors in the 115 sessions of the Conference of the Association for Computing Machinery in 1970.

The report was prepared in such a manner that . . . "the result would be a readable volume for the generalist, requiring a minimum level of knowledge of, or contact with, the technical computer industry". To this end, Mr Bemer has to be congratulated for his efforts.

The conference sessions were categorized into seventeen sectors of interest. These sectors were further subdivided into special topics which were discussed in separate sessions. The entire list cannot be included here for obvious reasons. Some representative examples are: the sector on "Industry", which included sessions on "Food Distribution", "Plant Automation", and "Printing and Publishing" amongst others; the sector on "Education", including "Computer Science Education" at the general, undergraduate and graduate levels; and finally, the sector on "Finance", including sessions on "Securities", "Insurance", "Banking" and "Accounting".

Although the topics cover a wide range of application areas, there were comments throughout the report on aspects of the computing environment which were of common concern. These were primarily on the use of computer networks and data banks. More specifically, the questions raised frequently concerned the reliability, privacy and security aspects of computer networks and data bases.

The observations, comments and opinions recorded were not only from the computer scientist or technologist, but also from people of different disciplines, whose common attribute was to have been near, or had access to, a computer. To stress the extent of the diversity, a selection of the participants is given here.

An FBI special agent commented on the effectiveness of the National Crime Information Center in law enforcement. A consultant, who is an ex-convict, described the plans for computer training courses for convicts as part of rehabilitation programmes. Finally, a representative from the US General Accounting Office discussed the introduction of computer technology into Congress, that is, into the processes of government. One interesting comment here was that Congressmen may have to write computer programs to assist them in their routine operations.

This volume should be read by all who are interested in how computers are shaping our future. Whether the predictions contained within will come true is a question for future historians, who will find this volume an invaluable source of information. A. L. LIM

John C. McPherson
~~Old Orchard Road, Armonk, New York 10504~~

Box 333
Short Hills NJ 07078
Mar 17. 1972

Dear Bob:

I would be delighted to see your Honeywell Computer Journal. I read the issue you sent with great interest and particularly was impressed with the issues your raised in the articles you selected for publication.

I'm home - with a terminal - and more deeply engrossed than ever. You might be interested to know that we have an APL terminal version of APT to play with.

Best regards.

John

This article considers nine major timesharing suppliers (ten services), and summarizes the results in a table that describes four attributes of each service: remote batch entry, conversational problem-solving, data-based management, and cost. These nine companies are representative of the 150 services on the market, and no recommendation is implied. The nine suppliers are: Allen-Babcock, Computer Sciences ("Infonet"), Com-Share Inc., Control Data ("Cybernet" and "Kronos"), General Electric, National CSS Inc., Service Bureau Corp., Tymshare Inc., and University Computing.

Com-Share and Tymshare each offer the conversational user a superset of Fortran and Basic, but it is important to note that programs written to take advantage of the extra features these supersets provide may not run on any other system—including the same supplier's remote-batch entry system.

Most of the suppliers offer COBOL, Basic, and at least one version of Fortran; some offer Algol, PL/1, Snobol, or assembly systems. Most also support a wide variety of terminals; some support Plotters or CRTS. SBC does not support remote-batch entry, it does not support COBOL, and its PL/1 is not the same as IBM's. SBC, CDC, NCSS, and UCC offer extensive (i.e., more than 100,000 characters/user) on-line storage.

Remote-batch charges range from $12/hr. to $600/hr. Conversational charges range from 4 cents/sec. to 50 cents/sec. of actual cpu time. Connect charges are $7.50—$25.00/hr.

BOOK REVIEWS AND ANNOUNCEMENTS

COMPUTERS AND CRISIS

R. W. Bemer, Editor

Association for Computing Machinery, 1133 Ave. of the Americas, New York, N.Y. 10036.

1971, 401 pages, no price information

EDITOR'S NOTE: Many business-oriented people tend to avoid ACM publications, expecting to encounter severely technical reading (so do we). THIS book is different. It is readable, understandable, and it is about the real world.

ACM's 1970 Conference was devoted to the present and future effects of computers on people. The title given these conference proceedings indicates what at least one person thought the effects might be. The book is divided into three parts: Data Processing Resources (33 pages), End Users (240 pages), and Professions (128 pages). The first part discusses such topics as "Computing and the Disadvantaged." The second and third parts present existing and projected applications in a great many fields, ranging from the apparel industry through transportation and medical practice, to banking. The proceedings are subtitled, "How Computers Are Shaping Our Future," and anyone interested in the "higher-level" effects computers are likely to have on our future will find this book worthwhile.

DATALOGISK INSTITUT KØBENHAVNS UNIVERSITET

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R. Bemer, B- 106
Honeywell Informations Systems
P. O. Box 6000
Phoenix
Arizona 85005
U. S. A.

5. Jan. 1972

Dear Bob,

Thank you very much indeed for the copy of "Computers and Crisis", which has just arrived to me, and the very kind acknowledgement of the Software Engineering work contained therein. It is a great pleasure and gratification to see our approach carried on in such large scale and in so significant a way.

With best wishes

Sincerely

Peter Naur

Peter Naur
Professor of Datalogy

PS. Please note my present address.

DR. NED CHAPIN 1190 BELLAIR WAY MENLO PARK CALIFORNIA 94025

December 14, 1971

Mr. Robert W. Bemer B-106
Phoenix Computer Operations
Honeywell Information Systems Inc.
Deer Valley Park
P O Box 6000
Phoenix, Arizona 85005

Dear Bob:

Thank you for sending me the copy of the review of the ACM's 1970 Proceedings.

I agree there has been a lot of after-the-fact criticism of that meeting, both verbal and written. But I hope what value it did have, you have captured in the Proceedings. May that volume stand as a monument to your extensive efforts!

Thank you for keeping me posted.

Yours truly,

Ned Chapin

Ned Chapin, Ph.D.
Data Processing Consultant

IBM

International Business Machines Corporation

Box 390, Poughkeepsie, N. Y. 12602
914/463-1234
Direct Dialing No.: 463-3433
Department D72
Building 705

December 2, 1971

Mr. Robert W. Bemer
Advanced Systems and Techniques
Deer Valley Park
P. O. Box 6000
Pheonix, Arizona 85005

Dear Bob:

Here comes another piece of fan mail!

I have just received (better late than never!) my copy of "Computers and Crisis". It is terrific.

Even though there is no question that you do not quote me sufficiently, (does any speaker ever feel that he is quoted either correctly or sufficiently?), I certainly think that the editing task you performed is excellent.

If I understand correctly, you did all of this on a text-editing system all by yourself. If this rumor is true, then the job you have done lies in the range between superlative and fantastic. I really mean it.

I enjoy the format, some of the interpolated paragraphs, the organization, and above all the conciseness of the content. It will give me some non-bedtime reading for some months to come.

And I was also quite surprised to see that my session headed the whole book. Which brings up the thought; in case you don't remember, I have the magnetic tape cassettes of my session. I don't know if you wish to keep them in your own library or if it was all right for me to hold on to them.

Again, many congratulations; and may your publications continue.

Sincerely yours,

David

David B. Mayer

DBM/jw

71/11/30/

353 Deacon Haynes Rd
Concord Mass.
01742

Dear Bob,

The book "Computers and Crisis" reached me recently. I wish to congratulate you on what appears to be an outstanding job of editing. I haven't read it thru but have sampled it on various subjects and it comes out far more coherent than I'm sure many of those sessions really were "real time". I am flattered by your acknowlegement. I trust that the investment of your time by both you and the General Electric Co. was well spent. I'm sure that you gained much satisfaction from it

As you know, I returned to the GE payroll on Oct. 1 and as yet have no assignment. The New York office is working at it but as yet to no avail. My golf score came down considerably this fall and now I must sharpen up my skiing.

If you come to Waltham give me a call, I would be glad to see you.

Thank you again for the book and have a fine holiday season.

Yours very truly,

Logan B. Cowles

John C. McPherson
Old Orchard Road, Armonk, New York 10504

November 30, 1971

Dear Bob,

I appreciate more than I can tell you your thoughtfulness for the copy of ACM '70 and your note on the frontispiece.

My sincere congratulations on your planning of the program and publication of this conference. It marks the beginning of another stage in the history of computing which you personally have contributed to so much since its very beginning.

With kindest regards,

Sincerely yours,

John

Mr. Robert Bemer
Honeywell Information Systems
P. O. Box 6000
B 106
Phoenix, Arizona 85005

X 09324

DAVID B. KRET
STATE SENATOR
DISTRICT 26
THIRTIETH LEGISLATURE

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November 29, 1971

Mr. Bob Bemer
Honeywell Systems
P. O. Box 6000
Phoenix, Ariz. 85005

Dear Bob:

Thank you for the copy of "Computers and Crisis." I am impressed with the scope of the text and have already found numerous items of great interest. You are certainly to be commended on a fine editorial effort.

I am still extremely hopeful that our paths might cross more often and that we might get together professionally. As you are obviously well aware, legislative salaries are woefully inadequate for raising a family and maintaining even minimal standards of living.

Thank you again.

Sincerely,

Dave

David B. Kret
State Senator

DBK/mo

Thomas J. Watson, Jr.
Old Orchard Road, Armonk, New York 10504

November 23, 1971

Dear Mr. Bemer,

Thank you for sending me a copy of your book, Computers and Crisis. I look forward to reading it.

With best wishes,

Sincerely yours,

Mr. R. W. Bemer
Honeywell Information Systems
Post Office Box 600
Phoenix, Arizona 85005

HONEYWELL INTEROFFICE CORRESPONDENCE

ENTER MAIL STATION NUMBER AFTER EACH NAME

81-3388-128

DATE November 23, 1971
TO R. W. Beemer - HIS - Phoenix
FROM Dean Randall - Minneapolis
DIVISION Corp. Staff
SUBJECT

Dear Bob:

Thank you for sending me your impressive volume "Computers and Crisis".

Jim Lufkin had told me of your project and had shown me a copy just recently. I appreciate having this and I intend looking through it.

It, obviously, represents a great deal of work.

Best regards,

Dean

DBR:ac

ECMA

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HONEYWELL Co.
Mr. R.W. BEMER
Deer Valley Park
Box 6000

PHOENIX, Arizona 85029
USA

OUR REF HE/cm YOUR REF DATE November 17, 1971

Dear Bob,

Many thanks for sending me "Computer and Crisis" an actuality subject, indeed. I am looking forward to going through the book as soon as possible.

As you know, whilst I am certainly not a computer professional, I have some understanding of the tremendous effort which the publication of this book must have requested. Please accept my very sincere congratulations for what I consider an outstanding job. What will always puzzle me with you, is not so much your technical ability to do such things, but your youthful (suc) enthusiasm to undertake them.

There is a chance that I come to the US in May 1972, may be we can manage to see eachother if you are not coming to Europe before.

Yours faithfully,

D. Hekimi
Dara
Secretary General

Honeywell

Nobember 16, 1971

Mr. R. W. Bemer
Phoenix Computer Operation
P.O. Box 6000
Phoenix, Arizona 85005

Dear Bob:

Thanks for the copy of Computers and Crisis with the warm inscription.

I appreciated the latter more than you can imagine since gargantuan responsibilities have a lonesome quality.

Thanks again.

U. O. Gagliardi

UOG/bs

HONEYWELL INFORMATION SYSTEMS INC., 300 CONCORD ROAD, BILLERICA, MASSACHUSETTS 01821, TELEPHONE 617/667-3111

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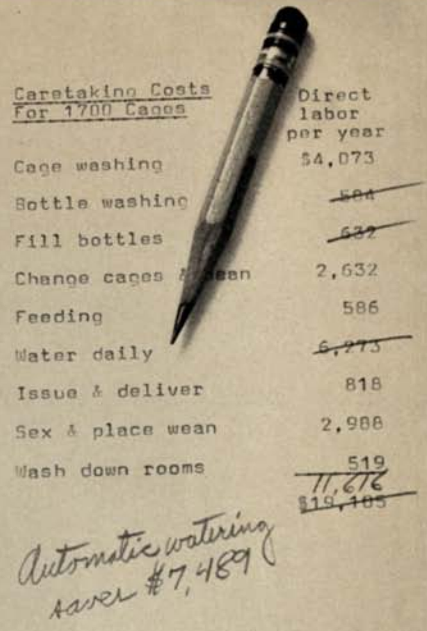
Introduction to Phase Transitions and Critical Phenomena. H. Eugene Stanley. Oxford University Press, New York, 1971. xx, 308 pp., illus. $9.50.

Laser Lines in Atomic Species. C. S. Willett. Pergamon, Oxford, 1971. Paper, £1.75. Progress in Quantum Electronics, vol. 1, part 5, pp. 273–358.

Liver Cancer. A conference, London, June 1969. International Agency for Research on Cancer, Lyon, 1971 (U.S. distributor, American Public Health Association, Washington, D.C.). 176 pp., illus. $10. IARC Scientific Publications, No. 1.

Mass Spectrometry. Vol. 1. A Review of the Literature Published between June 1968 and June 1970. D. H. Williams and eight others. Chemical Society, London, 1971. x, 324 pp., illus. £7.

Mendelian Inheritance in Man. Catalogs of Autosomal Dominant, Autosomal Recessive, and X-Linked Phenotypes. Victor A. McKusick. Johns Hopkins Press, Baltimore, ed. 3, 1971. xlvi, 738 pp. $17.50.



Mobility of PhD's before and after the Doctorate with Associated Economic and Educational Characteristics of States. Office of Scientific Personnel, National Research Council. National Academy of Sciences, Washington, D.C., 1971. xvi, 200 pp., illus. Paper, $5.95. Career Patterns Report No. 3.

Moon Rocks and Minerals. Scientific Results of the Study of the Apollo 11 Lunar Samples with Preliminary Data on Apollo 12 Samples. Alfred A. Levinson and S. Ross Taylor. Pergamon, New York, 1971. xiv, 222 pp., illus. $11.50.

NDEA Fellowships for College Teaching, 1958–68. Title IV, National Defense Education Act of 1958. Clarence B. Lindquist. U.S. Office of Education, Washington, D.C., 1971 (available from Superintendent of Documents, Washington, D.C.). x, 180 pp. Paper, $2.

The Nature of Atoms. Alan Holden. Oxford University Press, New York, 1971. xii, 92 pp., illus. Paper, $2.50.

The Nature of Reinforcement. A symposium, Pittsburgh. Robert Glaser, Ed. Academic Press, New York, 1971. x, 380 pp., illus. $13.

The New Ego. Pitfalls in Current Thinking about Patients in Psychoanalysis. Nathan Leites. Science House, New York, 1971. x, 302 pp. $15.

Numerical Weather Prediction. George J. Haltiner. Wiley, New York, 1971. xviii, 318 pp., illus. $10.95.

On Being Stoned. A Psychological Study of Marijuana Intoxication. Charles T. Tart. Science and Behavior Books, Palo Alto, Calif., 1971. xviii, 334 pp., illus. $7.95.

Organic Peroxides. Vol. 2. Daniel Swern, Ed. Wiley-Interscience, New York, 1971. xii, 964 pp., illus. $39.95.

The Origins of Theoretical Population Genetics. William B. Provine. University of Chicago Press, Chicago, 1971. xii, 202 pp. $7.75. Chicago History of Science and Medicine.

Outcasts from Evolution. Scientific Attitudes of Racial Inferiority, 1859–1900. John S. Haller, Jr. University of Illinois Press, Urbana, 1971. xvi, 228 pp., illus. $7.50.

Photochemistry. Vol. 2. A Review of the Literature Published between July 1969 and June 1970. D. Bryce-Smith, A. Gilbert, W. M. Horspool, and D. Phillips. Chemical Society, London, 1971. xviii, 818 pp., illus. £12. A Specialized Periodical Report.

Place and People. An Ecology of a New Guinean Community. William C. Clarke. University of California Press, Berkeley, 1971. xiv, 266 pp., illus. $9.

Plants and Man. Samuel R. Rushforth and William D. Tidwell. Burgess, Minneapolis, 1971. xii, 200 pp., illus. Spiral bound, $4.75.

Polyhedron Models. Magnus J. Wenninger. Cambridge University Press, New York, 1971. xii, 208 pp., illus. $14.50.

Power Generation and Environmental Change. Symposium of the Committee on Environmental Alteration, American Association for the Advancement of Science, Boston, December 1969. David A. Berkowitz and Arthur M. Squires, Eds. M.I.T. Press, Cambridge, Mass., 1971. xxiv, 440 pp., illus. $16.95.

ARTHUR ASCHAUER and Co., Inc.
Management Counsel 5045 NORTH 12TH STREET · PHOENIX, ARIZONA 85014 · (602) 264-4183

October 18th/71

Dear Bob:

When the editor of Computers and Crisis not only has the kindness to send you a copy, but inscribes it "I'm sure that few people will appreciate this more than you" one JUST has to be intrigued and grateful. I am both!

Your secretary tells me that you'll be away for three days, so when you return let me thank you personally and tell you about Saudi Arabia and computers, while getting updated on your peregrations, rather - peregrinations.

Thanks again, Bob, the book will indeed be helpful and stimulating, as I can tell from a brief look-through. Looking forward to seeing you.

Kindest best wishes to you and Marion.

Sincerely

Art

Mr. R. W. Bemer B-106
Honeywell Information Systems Inc.
P. O. Box 6000
Phoenix 85005

news

ACM Association for Computing Machinery

1133 AVENUE OF THE AMERICAS
NEW YORK, N. Y. 10036
(212) 265-6300

RELEASED BY: George Capsis
(212) 265-6300

RELEASE DATE:
For Immediate Release

ACM ANNOUNCES PUBLICATION OF "COMPUTERS AND CRISIS", THE EDITED AND ANNOTATED PROCEEDINGS OF ACM'S 1970 CONFERENCE.

New York, New York, September 23, 1971: "Computers and Crisis," a 400 page volume that captures a three day dialogue between a group of innovative users of computers and computer professionals, was announced today by the Association for Computing Machinery.

The 400 page volume represents an incisive editing of 115 sessions which took place during ACM's 1970 annual conference and involved over 200 chairmen, speakers, and panelists. Commenting on the efforts of editor Robert W. Bemer and his sector chairman, ACM President Walter Carlson states, "They have permanently altered the fashion of ACM's annual conferences."

The volume developed out of a decision not to hold a conventional conference with presubmitted papers, but to throw the meeting open to a free exchange of ideas and questions in 17 main sectors of interest ranging from Education to Medicine and the Humanities.

Bob Bemer, ACM Program Chairman and Honeywell systems analyst Susan Brewer tackled the more than 2,000 pages of transcript, lifting the most exciting exchanges and adding precise summations and clearly stated commentary.

The title, "Computers and Crisis," was suggested by the recurring examples of how computers are being used to solve major technological and social problems facing society today.

Commenting on the Crisis theme, William L. Garrison of the University of Pittsburgh is quoted, "The issue is not whether computers will affect the form, functioning, and qualities of urban areas, for surely they will, and are. We need to perceive and structure the process of change."

The book, which does not contain a single formula, is designed to be read by the informed layman. William D. Smith, reporting in The New York Times said, "It is a valuable book for the doctor, lawyer, plumber, and Indian chief who are interested in what directions man's greatest tool may be taking him."

The volume is available from ACM Headquarters, 1133 Avenue of the Americas, New York, N.Y. 10036. The paperbound version is $7.50 and the hardcover $15.00, prepaid.

THE NEW YORK TIMES, SUNDAY, SEPTEMBER 5, 1971

Books:

Studies of Computers

THE INTELLIGENT MAN'S EASY GUIDE TO COMPUTERS. A. N. Feldzamen. David McKay Company, Inc. 263 pp. $7.95.

COMPUTERS AND CRISIS. R. W. Bemer, editor. Association for Computing Machinery. 401 pp. $7.50.

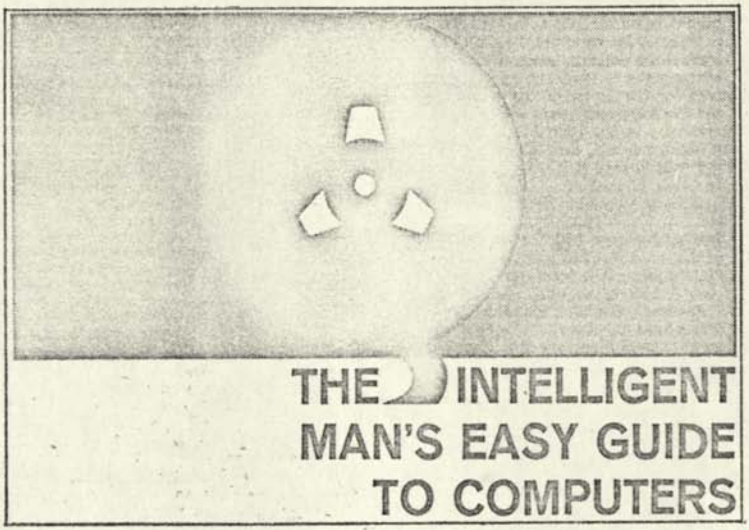
The electronic computer unfortunately has come to be considered by much of the general public as an Aladdin's Lamp—half magic, half science. The computer can perform near-magic feats, but the mumbo jumbo associated with it is technical and scientific. As a result, many people who should know better have chosen to remain ignorant about one of man's greatest tools.

These two books should help clear away a lot of the myths and mist around the computer. Mr. Feldzamen's book is just what its title says—an intelligent man's quick, easy and enjoyable course in computers.

He puts it on the line right away, accusing many people who shy away from learning about computers of being intellectual cowards. He describes such a person in this way:

"He may slink away with a brave false face outside, but is fearful and timid within when computer talk begins. Like the bashful boy who has yet to learn about the birds and bees, he is reluctant to face up to the computer facts of life."

Having thus identified the syndrome, he sets out to cure the illness in a bright, painless fashion, taking the reader through computer concepts, uses, accomplishments, failures and anchoring the computer's potential in fact, not fancy. Through all this denouement, Mr. Feldzamen keeps it interesting and informative.



"Computers and Crisis" contains the condensed proceedings of the 1970 conference of the Society for Computing Machinery, the oldest association of computer professionals, and a pretty intellectual group.

Before this frightens anyone off, it should be noted that it is also one of the most eclectic professional societies in the world and the proceedings, which are devoted to studying the role of the computer in solving the various serious problems facing society, make lively reading.

There were no papers delivered at the conference but rather each topic was discussed in seminar fashion, giving a spontaneity to the book that might otherwise be lacking.

Take for instance a session on computing and the disadvantaged. The leadoff speaker commented:

"It may well be that Moses was indeed the first recorded handicapped person, for surely Exodus 4:10-16 indicates that he had a speech impediment."

To this a Unitarian minister on the panel replied:

"Let me take the prerogative of a theologian. . . . The first disadvantaged person was not Moses. It was Adam. He had an orthopedic problem, sustained in the process of liberating the first woman.

From this starting point the top experts in the field take off in exploration of how computers and the disadvantaged can be made to help each other.

Similar treatment is given to education, the communications industry, government, transportation, law, humanities, medicine, science and other disciplines and difficulties in the world.

The industry section covers such varied businesses as apparel, automotive, food distribution, petroleum, plant automation, power, printing, publishing and retailing. The securities, insurance and banking industries are covered in the finance section.

The social problems facing society are usually discussed by people who are into it with their hearts as well as their heads.

Some cant creeps in, and computer jargon is common but generally fathomable. Nonetheless, it is a valuable book for the doctor, lawyer, plumber and Indian chief who are interested in what directions man's greatest tool may be taking him.

WILLIAM D. SMITH

DATAMATION

ROBERT B. FOREST

8/24/71

Robert —

A casual, quick glance at your *Computers and Crisis* indicates you've done an outstanding job of a tremendously difficult task. I'd read more, but want to rush it off to a reviewer. Await my hardbound copy so I can learn more.

Congratulations.

Also L+K*

94 So. Los Robles, Pasadena, Calif. 91101
(213) 795-9721 or (213) 681-8486 from Los Angeles

* to Marian too

DATAMATION ROBERT B. FOREST

11/19/71

Bob —

Thank heaps for the personal copy of *Computers & Crisis* and for the kind and flattering inscription.

The only other person I ever inspired tried to kill me

L+K

Bob F

94 So. Los Robles, Pasadena, Calif. 91101
(213) 795-9721 or (213) 681-8486 from Los Angeles

DATA MANAGEMENT

505 BUSSE HIGHWAY, PARK RIDGE, ILLINOIS 60068, AC 312-825-8124

August 18, 1971

Mr. Robert W. Bemer
Honeywell Information Systems, Inc.
P. O. Box 6000
Phoenix, Arizona 85005

Dear Bob:

Received your letter and ACM book yesterday. Thanks . . . and congratulations on an excellent job!

Have seen the Honeywell Computer Journal, and noticed your name. Have a minor complaint, though. So far, I've stayed out of the computer business, per se, and stuck to my typewriter . . . but if you computer guys are gonna start meddling in my racket, well . . .

Seriously, (for a change), I appreciate the book, the note and the fact we can "stay in touch." Let's continue to do so, by all means.

Best personal regards,

Don

Don Young
Editor

DY/gpm

DPMA

OFFICIAL JOURNAL OF DATA PROCESSING MANAGEMENT ASSOCIATION

Mountain Shadows

5641 EAST LINCOLN DRIVE 947-2211
SCOTTSDALE, ARIZONA 85253

Dear Bob,

Thanks so much for Computers and Crisis. We are real book freaks and yours makes an impressive addition to our libary.

We have it nestled between such classics as our personally autographed copies of A House Is Not A Home, The Cat In The Hat, Hamlet, and the St. James version of the Bible.

Hardly the sort of book I'd choose to curl up with on a hot day.....but Dale is made of stronger stuff and begs to report that he is over half-way through the collection. What is more numbing to me is that he understands and enjoys it.

We spent a few days here at Mountain Shadows in the middle of September. Tried to call you a zillion times....but no luck. Don't you characters EVER stay home? Hope we can make connections on our next Safari to the wilds of Arizona.

Again thanks for Computers and Crisis. We were very impressed to see what an Ex-Hippie can do!!

Give our regards to your sexy-looking wife (what I wouldn't give for a figure like hers. On second thought....I'd have a shape like hers if I'd give-up about one-half the pounds I weigh now....but then that would make TWO Harriets and I don't think the world is ready for that.)

Fondly,

Harriet + Dale
Harriet and Dale

A PROPERTY OF A DEL E. WEBB CORPORATION SUBSIDIARY

Dear Bob:
It took a phone call to get this in, but all future ACM books will go routinely. Wait until the sales reach a zillion. I'll have them use a news item on it — as you!!

Lee

INTERIM LISTINGS

An alphabetical list of domestic and imported books already published for which Library of Congress cataloging has not yet been received. When this cataloging does become available the full listings will then be recorded in the American Book Publishing Record.

AARON, Richard Ithamar, 1901-
Knowing and the function of reason. By Richard I. Aaron. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $11.25. No L.C. no. quoted. ISBN 0-19-824351-0.

ADCOCK, Fleur
High tide in the garden. London, New York, Oxford Univ. Pr., 1971. $4.00. No L.C. no. quoted. ISBN 0-19-211807-2.

BALDWIN, J. A.
The mental hospital in the psychiatric service; a case-register study. By J. A. Baldwin, with John H. Evans & David J. Hall. Pub. for the Nuffield Provincial Hospitals Trust by Oxford Univ. Pr., London, New York. 1971. $18.00. No. L.C. no. quoted. ISBN 0-19-721357-X.

BAXANDALL, Michael
Giotto and the orators; humanist observers of painting in Italy and the discovery of pictorial composition, 1350-1450. (Oxford-Warburg studies) Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $12.00. No L.C. no. quoted. ISBN 0-19-817178-1.

BEMER, R. W.
Computers and crisis: how computers are shaping our future. Ed. by R. W. Bemer. Assn. for Computing Machinery, 1133 Ave. of Americas, New York. 1971. $15.00; pap., $7.50. No L.C. no. quoted.

BOHME, Helmut
The foundation of the German empire; select documents. Ed. by Helmut Bohme. Tr. by Agatha Ramm. London, New York, Oxford Univ. Pr., 1971. $11.25. No L.C. no. quoted. ISBN 0-19-873012-8.

BROWNING, David
El Salvador; landscape and society. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $17.75. No L.C. no. quoted. ISBN 0-19-823208-X.

CHAKRAVARTI, Nalini Ranjan
The Indian minority in Burma; the rise and decline of an immigrant community. Foreword by Hugh Tinker. Pub. for the Inst. of Race Relations, London by Oxford Univ. Pr., London, New York, 1971. $10.50. No L.C. no. quoted. ISBN 0-19-218194-7.

COOK, A. H.
Interference of electromagnetic waves. (Intl. ser. of monographs on physics) Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $16.00. No L.C. no. quoted. ISBN 0-19-851255-4.

EVANS, J. D.
The prehistoric antiquities of the Maltese Islands: a survey. Pub. with the assistance of the Gulbenkian Found., British Acad., Marc Fitch Fund. London, Athlone Pr., 1971. Dist. by Oxford Univ. Pr., New York. $48.00. No L.C. no. quoted. ISBN 0-485-11093-8.

FOX, Edward Whiting
History in geographic perspective; the other France. New York, Norton, 1971. $6.95. L.C. card order no.: 79-140754. ISBN 0-393-

FOX, Robert
The caloric theory of gases; from Lavoisier to Regnault. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $16.00. No L.C. no. quoted. ISBN 0-19-858131-9.

GARDNER, Helen
Religion and literature. New York, Oxford Univ. Pr., 1971. $6.00. No L.C. no. quoted. ISBN 0-19-501457-X.

GELBER, H. G.
Problems of Australian defence. Ed. by H. G. Gelber. London, New York, Oxford Univ. Pr., 1971, c.1970. $17.75. No L.C. no. quoted. ISBN 0-19-550353-8.

GOMBRICH, Richard F.
Precept and practice; traditional Buddhism in the rural highlands of Ceylon. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $13.00. No L.C. no. quoted. ISBN 0-19-826525-5.

HOLLAND, W. W.
Data handling in epidemiology. Co-ordinating ed. W. W. Holland. (Oxford med. pubns) London, New York, Oxford Univ. Pr., 1971, c.1970. $13.75. No L.C. no. quoted. ISBN 0-19-264909-4.

HOPE, D. M.
The Leonine Sacramentary; a reassessment of its nature and purpose. (Oxford theological monographs) London, New York, Oxford Univ. Pr., 1971. $8.00. No L.C. no. quoted. ISBN 0-19-826705-3.

HOWARD-HILL, T. H.
Shakespearian bibliography and textual criticism; a bibliography. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $13.75. No L.C. no. quoted. ISBN 0-19-818140-X.

HUTCHINGS, Raymond
Seasonal influences in Soviet industry. Issued under the auspices of the Royal Inst. of Intl. Affairs. London, New York, Oxford Univ. Pr., 1971. $13.00. No L.C. no. quoted. ISBN 0-19-214986-5.

JAMES, Margery Kirkbride
Studies in the medieval wine trade. Ed. by Elspeth M. Veale. Introd. by E. M. Carus-Wilson. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $13.00. No L.C. no. quoted. ISBN 0-19-828253-2.

KENNEDY, Kieran A.
Productivity and industrial growth; the Irish experience. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $13.75. No L.C. no. quoted. ISBN 0-19-828170-6.

LEVEY, Michael
Painting at court. Inst. of Fine Arts, N.Y. Univ. Delivered at the Metropolitan Mus. of Art, New York. (Wrightsman lects., 5) New York, New York Univ. Pr., 1971. $15.00. L.C. card order no.: 75-124528. ISBN 0-8147-4950-X.

LOUIS, William Roger
British strategy in the Far East, 1919-1939. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $10.50. No L.C. no. quoted. ISBN 0-19-822346-3.

McDONALD, Margaret, 1927-
Paper recycling and the use of chemicals, 1971. By M. McDonald. Park Ridge, NJ, Noyes, 1971. $36.00, pap. L.C. card order no.: 70-161878. ISBN 0-8155-0377-6.

McKINNON, William T.
Apollo's blended dream; a study of the poetry of Louis MacNeice. London, New York, Oxford Univ. Pr., 1971. $12.00. No L.C. no. quoted. ISBN 0-19-211299-6.

MAY, R.J.
Financing the small states in Australian federalism. London, New York, Oxford Univ. Pr., 1971. $13.75. No L.C. no. quoted. ISBN 0-19-550342-2.

MOORE, Will Grayburn
The classical drama of France. By Will G. Moore. London, New York, Oxford Univ. Pr., 1971. $3.25; pap., $1.95. No L.C. no. quoted. ISBN 0-19-885055-7 (cloth); 0-19-888055-3 (pap.)

NAMIER, Julia
Lewis Namier; a biography. London, New York, Oxford Univ. Pr., 1971. $13.75. No L.C. no. quoted. ISBN 0-19-211706-8.

OSTERGAARD, Geoffrey
The gentle anarchists; a study of the leaders of the Sarvodaya Movement for non-violent revolution in India. By Geoffrey Ostergaard & Melville Currell. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $17.75. No L.C. no. quoted. ISBN 0-19-827179-4.

PLEHWE, Friedrich-Karl von
The end of an alliance; Rome's defection from the Axis in 1943. Foreword by F.W.D. Deakin. Tr. from German by Eric Mosbacher. London, New York, Oxford Univ. Pr., 1971. $7.25. No L.C. no. quoted. ISBN 0-19-215938-0.

POWELL, J.M.
The public lands of Australia Felix; settlement and land appraisal in Victoria 1834-91 with special reference to the western plains. London, New York, Oxford Univ. Pr., 1971, c.1970. $13.75; pap., price unreported. No L.C. no. quoted. ISBN 0-19-550340-6 (cloth); 0-19-550359-7 (pap.)

SHEPHERD, Jean
Wanda Hickey's night of golden memories and other disasters. Garden City, New York, Doubleday, 1971. $6.95. L.C. card order no.: 72-161317.

SIDER, Robert Dick
Ancient rhetoric and the art of Tertullian. (Oxford theological monographs) London, New York, Oxford Univ. Pr., 1971. $8.00. No L.C. no. quoted. ISBN 0-19-826708-8.

SITTIG, Marshall
Sulfuric acid manufacture and effluent control, 1971. (Chem. process review no. 55) Park Ridge, NJ, Noyes, 1971. $48.00, pap. L.C. card order no.: 77-161877. ISBN 0-8155-0375-X.

STARK, Jurgen Kurt
Personal names in Palmyrene inscriptions. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $19.25. No L.C. no. quoted. ISBN 0-19-815443-7.

STEPHAN, John J.
Sakhalin; a history. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $12.00. No L.C. no. quoted. ISBN 0-19-821550-9.

TENG, S.Y.
The Taiping rebellion and the western powers; a comprehensive survey. Oxford, Clarendon Pr., 1971. Dist. by Oxford Univ. Pr., New York. $17.75. No L.C. no. quoted. ISBN 0-19-821548-7.

TRUETA, J.
Gathorne Robert Girdlestone. Pub. for the Girdlestone Orthopaedic Soc., Oxford by the

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WFLD·TV
32
CHICAGO

22 July 1971

Mr. Robert Bemer
2 Moon Mountain Trail
Phoenix, Arizona 85023

Dear Mr. Bemer:

I am so grateful to you for traveling all this way to create two successful shows for our "What's Happening!?" series. The discussion was quite informative and interesting--I only hope we have been instrumental, through this program, in stimulating the attendance at the A.C.M. Conference!

If you will be returning to Chicago for the air dates of these shows, they are scheduled for July 29 and 30 at 2:10 PM.

Best of luck with this year's conference!

And, again, our sincerest thanks to you for the fine shows Monday.

Cordially,

Joan McGrath

(Mrs.) Joan McGrath
Producer, What's Happening!?

TV Hour by Ho

5 a. m.

5:40—Today's Meditation	5
5:45—Town and Farm	5
5:50—Thought for the Day	2
5:55—Early Report	2

6 a. m.

6:00—Summer Semester	2
Education Exchange	5
News—Luis Uribe	44
6:15—News	9
6:25—Reflections	7
6:30—Let's Speak English	2
Today in Chicago	5
Perspectives	7
5 Minutes to Live By	9
Instant News	44
6:35—Top o' the Morning	9
6:55—News	5

7 a. m.

7:00—News	2
Today—Hugh Downs	5
News	7
Ray Rayner and Friends	9
7:05—Kennedy and Company	7
7:25—News	5

8 a. m.

8:00—Captain Kangaroo	2
Instant News	44
8:30—Prize Movie	7
"Fort Apache."	
Romper Room	9

9 a. m.

9:00—Lucy [R]	2
Dinah's Place	5
What's My Line?	9
Stock Market	26
9:15—Newsmakers	27
9:27—WGN-TV Editorial	9
9:30—Beverly Hillbillies [R]	2
Concentration	5
Virginia Graham	9

10 a. m.

10:00—Family Affair [R]	2
Sale of the Century	5
Instant News	44
10:30—Love of Life	2
Hollywood Squares	5
That Girl [R]	7
Mike Douglas	9

11 a. m.

11:00—Where the Heart Is	2
Jeopardy	5
Bewitched [R]	7
Investment Trust Report	26
11:25—News	2
11:30—Search for Tomorrow	2
Who, What or Where Game	5
Love, American Style [R]	7
11:50—Fashions in Sewing	9
11:55—News	5
11:58—WGN-TV Editorial	9

12 noon

12:00—News	2
News	5
All My Children	7
Bozo's Circus	9
12:15—Lee Phillip	2
12:30—As the World Turns	2
Memory Game	5
Let's Make a Deal	7

1 p. m.

1:00—Love Is a Many Splendored Thing	2
Days of Our Lives	5
Newlywed Game	7
News	9
Market Basket	26
1:15—Lead-Off Man	9
1:25—Baseball	9
1:30—Guiding Light	2
Doctors	5
Dating Game	7
News	26

2 p. m.

2:00—Secret Storm	2
Another World—Bay City	5
General Hospital	7
News	32
Instant News	44
2:10—What's Happening?	32
2:30—Edge of Night	2
Bright Promise	5
One Life to Live	7
News	26
Mantrap	32

3 p. m.

3:00—Gomer Pyle [R]	2
Another World—Somerset	5
Password	7
Sesame Street [R]	11
Little Rascals	32
3:30—Early Show	2
"The Glass Web."	
David Frost	5
Feature Film	7
"California."	
Cartoon Town	32
3:45—Tenth Inning	9

4 p. m.

4:00—I Love Lucy [R]	9
Misterogers' Neighborhood	11
Baseball	32
Instant News	44
4:15—Black's View of the News	26
4:30—Garfield Goose	9
What's New?	
Soul Train	
4:50—Flintstones [R]	

5 p.

5:00—News—B	
News—Ji	
News—	

"Computers and Crisis" - HARD COVER

HIS

Anderson (W)
Bellisario
Binger
Bourin BONNET
Brosnan
Brule
Canepa
Casebolt
Chu CULL
Dempsey
Desbrueres
Dix
Feldman
Fubini
Gagliardi
Henderson
Keating JERRITTS
Lufkin KOPP
Lund (W) INGERSOLL
Minkel
Peretti MILLER
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Weil (plus paperback)
Wilde

PHX Library - 2
PHX Reception

Government

Baynard
Brooks
David, EE
House, W
Staats, E
Williams (Gov. AZ)

G E

Burlingame
Cowles
Johnson
Music
Rader
Vanderslice

I B M

Learson
McPherson
Pedicord
Watson

Other Business

Buxton (NATO) STIBITZ
D'Agapeyeff (BCS)
Douglas (BCS)
Eckert
Forest
Hekimi (ECMA)
Lecht
Mauchly
Naur (NATO)
Oliver, G
Randell (NATO)
Sturen (ISO)

Brewer - 10

PAPERBACK

HIS

Austin, B
Bremer, J
Couleur, J
de Bournonville
Kayser
Kilgour, P
Harrington, J
Hite, E
Johnson, J
Leclerc, B
McGuffie
Nance, J
Priest, J
Raine, C
Rapelli
Sackman
Skelly, P
Stevens, R
Vercauteren
Zornow

Laitis, J

PIZZARONO

Shriver

4 girls (Lois, Vicki, Arvilla, Martha)

BUSINESS

Arnth-Jensen (NATO)
Aschauer
Croyle
De Carlo
Ellison
Enright
Koga
Kret
Lecht
Limbert
Willibald, G (AEG-T)

SPRAGUE

Bauer, F

Publicity/ Review

AAAS
Datamation
DPMA
Computerworld
Guest Servcies
Fortune (Burck)
PCO news (Winemiller)

POSSIBLES

Clippinger
Dick, CM
Ercoli
Fancher, HB
Lonergan
Mooers
~~Sprague, Dick~~

~~Butterworth~~

~~CPhillips~~

Family and Friends

Hard Cover

Pop
Jonathan
Jan
Tina
Mark
Derek
Gretchen
BRUCE
Raplh Blake
W. Comb

Paperback

Pop (2)
Jonathan

Jud Foster
Raplh Foster
Reg Foster
Jack Harper
Lisa Surette
G. Wilson

Ballard
Bryans
Eymann
Hamilton
Holt
Greenway
Grindrod
Herlich
Parks
Priest
Norris
Wickliffe (3)

Possibles

Cushman
~~Dolph~~
Hamilton, J
Jones
~~Loeb~~
Knox
Osburn
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~~Schottler~~
Wiggins
Iva/Jack

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AMERICAN FEDERATION OF INFORMATION PROCESSING SOCIETIES
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September 9, 1970

RECEIVED
1970 SEP 11
R. W. BEMER

Mr. Sam M. Matsa
IBM Corporation
New York Scientific Center
410 East 62nd Street
New York, N.Y. 10021

Dear Sam:

I just wanted to let you know that I found ACM '70 a very refreshing change from previous ACM conferences. Congratulations to you and Bob Bemer on putting on a very good show.

My one regret is that the ACM membership did not respond better to the opportunities put before them. I attended mainly those sessions organized by Steve Furth and to put it bluntly, I was disgusted by the few ACM members who turned out to hear excellent presentations by key users. It must indeed have made the user representatives wonder whether the computer types are really interested in the users' problems.

With best personal regards,

Sincerely yours,

Bruce Gilchrist
Executive Director

BG:s

cc: Mr. Robert Bemer

Sponsoring Societies
Members: The Association for Computing Machinery; The Institute of Electrical and Electronics Engineers Computer Group; Simulation Councils, Inc.; American Society for Information Science. Affiliates: American Institute of Certified Public Accountants; American Statistical Association; Association for Computational Linguistics; Society for Industrial and Applied Mathematics; Society for Information Display; Special Libraries Association.

Carnegie-Mellon University

Graduate School of Industrial Administration
Schenley Park
Pittsburgh, Pennsylvania 15213
[412] 621-2600

December 30, 1970

Mr. Robert W. Bemer
Honeywell Information Systems, Inc.
Mail Drop A-80
13430 Black Canyon Highway
Phoenix, Arizona 85029

Dear Bob:

Thank you for your recent memo concerning the status of the Conference Proceedings for ACM 70. As a follow-up to your memo I have informed my session chairman accordingly.

As I understand your current plan, I should anticipate receiving an edited and condensed version of the transcript for each of the management sessions some time in the future for review, etc. and return to you. I would also like to receive a copy of the actual transcript at that time for each session, since at least one session chairman has expressed a desire to write a separate article (for publication elsewhere) based on the transcript.

I look forward to receiving this material and to the proceedings as your schedule permits. Although it's been said a number of times, I think ACM and the profession in general owes you a big debt, Bob, for the inordinate time and effort you've contributed to the conference and, now to the proceedings. I'm confident the final success could not have been realized without a person of your caliber and dedication. As a member of ACM, many thanks for an outstanding job. As a co-worker, many thanks for making it easy on us.

Best wishes for the New Year.

Sincerely,

Charlie

Charles H. Kriebel
Professor of Industrial Administration

CHK:eb

computers & society

November 1970

ACM
SICCAS

Cambridge Massachusetts

Volume 1 Number 4

From the Chairman

ACM '70 was a challenge to SICCAS. Not only were the social aspects of computing mentioned frequently during the technical sessions, but three evening meetings were also devoted to these problems. Two were sponsored directly by the program committee and the third, on the night of September 1, was sponsored by SICCAS and chaired by John A. Kaehler of W.R. Grace & Company. John's report appears elsewhere, but I should like at this time to thank him again for all the work involved in putting together and chairing the best public program that SICCAS has yet presented. The format of panel with much audience participation seems quite successful, and I was interested to notice that for the first time those who feel that the military applications of computers are an honorable endeavor stood up and were heard. I particularly enjoyed the courteous hearing that persons of varying political orientation gave to each speaker, whether from the panel or from the floor.

At the keynote session Ralph Nader challenged the computer industry to represent the interests of the consumer and in response to his call, the business meeting voted to form a subcommittee on consumer interests. I am pleased to announce that Dr. Herbert R.J. Grosch has agreed to chair this new subcommittee.

Donn Parker has set forth in another column the program now planned for the Fall Joint Computer Conference in Houston. We certainly hope that all who can will come.

In accordance with discussions at the Spring Joint Computer Conference and at the annual meeting of ACM, the Special Interest Committee is petitioning the Council of the ACM to become a group. This petition will be presented at the Council meeting on November 20. A copy of

Important! See Back Page----→

the proposed group bylaws is included with this issue of the newsletter. The changes reflect the discussions since the bylaws were published in April; none of them appear to be major. However, the $10 limitation on dues should be taken for what it is: a limitation. It is currently proposed, in accordance with the discussion in April, that annual dues for ACM members will be $5 and for non ACM members, $7.50.

Senator Ervin of North Carolina would very much appreciate receiving from any computer professional a statement of his or her viewpoint on the privacy issue and particularly any thoughts on the technical problems involved.

The program that SICCAS (or SIGCAS) puts on at the 1971 ACM annual meeting will be under the chairmanship of Professor Robert Ashenhurst of the University of Chicago. The nature of the meeting will depend on the response to the ACM Technical Program Committee's call for papers. If sufficient papers of good quality are received, there will be a formal session; otherwise, the session will be informal. Papers will be refereed; no paper will be turned down unless it is found lacking by referees of disparate philosophy. I hope the writing muse will visit each of you. **Robert P Bigelow**

Business meeting minutes
September 2, 1970

About twenty people attended the SICCAS business meeting in the late afternoon of September 2 during the ACM annual meeting. The Chairman reported on activities during the previous year and on the proposed bylaws. Donn Parker gave a rundown on the program to be held at the 1970 Fall Joint Computer Conference.

In response to the challenge by Ralph Nader at the keynote address of ACM'70, it was agreed that there would be a subcommittee on consumer interests and the Chairman stated he would appoint a chairman for the subcommittee in the near future.

Donn Parker reported on his proposals for an enforceable code of ethics and also on the proposal he would make at the Council meeting on the following Friday of the ACM would respect individuals who wish to keep their name off the mailing list. It was moved, seconded and voted "that SICCAS approve the concept of permitting an ACM member to determine whether his or her name will be on a membership list made available by ACM, directly or indirectly, to non ACM members for mailing purposes." The vote was 16 in favor, none against and about 8 abstentions.

Others in attendance made reports of various programs and suggestions for activity. The Chairman stated that the suggestions would be forwarded to the appropriate subcommittee chairmen and requested that those reporting a program expand their remarks for inclusion in the newsletter.

Are computers dehumanizing?

Irene Taviss, Research Associate,
Harvard University Program on Technology and Society

Fear

Amidst the pros and cons and uncertainties concerning such issues as the establishment of a computerized national data bank, the use of management information systems in governmental and private organizations, the effects of computer use in office and factory, there remains a general popular fear and or antagonism toward computers. As symbolized by the "do not fold, staple, or mutilate" signs, the idea that computers are "dehumanizing" seems to be fairly widespread.

What exactly does it mean to say that computers are "dehumanizing"? For those unfamiliar with the workings of computers, it is often the perception of the computer as an "autonomous thinking machine" that generates this feeling. The computer, if not deified, is at least seen as a competitor to man. Notice the great delight and amusement that is evoked by "computer errors". No other machine failures elicit this reaction. When a computer "makes a mistake", man is reassured that this machine is as fallible as he is.

For others, the grievances are more specific. Some people have to work nights to keep expensive computers in operation; others have to work more carefully and accurately than they were used to; still others are required to collect and process information in a certain way. That is, to derive maximum benefit from computers, men must in some ways adapt to them. But this is true of most tools and machines that men build and use.

Computers may also be seen as "dehumanizing" because they produce conclusions that are unexpected or do not confirm the assumptions of the men who fed the data into them. The whole enterprise of science may be seen as "dehumanizing" in this sense, since the results of scientific research often turn up findings that are contrary to man's expectations or traditional beliefs. It may be that computers have become a convenient target for those who are unhappy with the role that both science and sophisticated machinery play in our society.

There is one final sense in which the computer may be seen as "dehumanizing". Peculiar to the computer itself, it is the reason that the "IBM card" has become a symbol of "dehumanization" or "depersonalization". What provokes protest here is the fact that information about persons can be classified and coded into preset categories for computer processing. The real target of this complaint should be the social complexity that results from large populations in advanced technological societies. With or without computers, the need to process large amounts of information efficiently would still be present. Indeed, without computers the categories might be cruder and the rigidities of large organizations much greater. Ironically, it may be that the computer allows for more "individualized" treatment than would otherwise be feasible.

Social change

As with any new tool, new problems emerge as computers come into widespread use. The protection of individual privacy and the retraining of those individuals who suffer job displacement as a result of computers are among the most important of these. Their resolution will depend upon appropriate social policies. It is not the technology itself, but the society, or groups within it, that by their policies and allocation of resources, determine the speed and nature of particular social changes. This is not to deny that the development of new tools may in some instances have unforeseen consequences. Just as the use of automobiles triggered a variety of social changes which were not intended or foreseen when automobiles were first introduced, so might the use of computers.

From what

But the idea that, by their very use, computers are "dehumanizing" cannot be supported. The allegation often results from a failure to examine the pre-computer *status quo*. If some fear that the use of computers in the classroom will bring about standardization or homogenization, would not a close examination of current educational practices reveal the same kind of standardization? Similarly, those who bewail the debasing effects of computer use in humanistic research, might pay heed to the remarks of Jacques Barzun, himself a staunch critic of the use of computers in such research: "What have the humanists been doing for thirty-five years except to do exactly what a computer would do, only with their own unaided card indexes and fountain pens? They have taken apart poetry, they have taken apart novels, they have counted images, they have followed symbols that are sometimes non-existent, they have destroyed their own subject matter by a pseudo-computer-like approach, and now they have only themselves to blame if they have to learn the tricks and the jargon of computerizing".[1] In short, whether or not computers will be "dehumanizing" will depend on how men choose to use them.

To what

In the meantime, perhaps it is necessary, as Bruce Mazlish has suggested,[2] to sever the "discontinuity" between man and machine. Viewing machines as extensions of man might help to alleviate some of the distrust of technology. But this change in man's thinking and conception of himself might be as difficult to achieve as the breaking of the discontinuity between man and animal had been in the days of Darwin.

In some sectors of the population today, a deliberate attempt is made to do quite the reverse; man and machine are seen as radically discontinuous entities. If those who could not accept the continuity between man and animal often argued their case by dubbing man as "rational" and animal as "instinctual", there appears to be a tendency in some quarters today to see man as "emotional" and machine as "rational". Machines may execute tasks and may even "think", but they cannot "feel". So the argument runs. But it is an argument which is ultimately destructive, if one sees the abolition of this bifurcation between man's reason and his emotion as desirable.

**This essay is based in part on materials in Irene Taviss, ed., The Computer Impact (Englewood Cliffs, J.J. Prentice-Hall, Inc., 1970, $7.95 hardcover, $4.50 paperback), which examines the economic, political, and cultural implications of computer technology.

REFERENCES

1 Jacques Barzun, "Computers for the Humanities? A Record of the Conference Sponsored by Yale University on a Grant from IBM, January 22-23, 1965" (New Haven, Conn: Yale University, 1965), p. 149.

2 Bruce Mazlish, "The Fourth Discontinuity," Technology and Culture, 8 (January 1967), pp. 1-15.

Special Session FJCC

November 18, 1970

SICCAS has joined with the AFIPS Social Implications Committee and IEEE Computer Group Committee on Social Implications to sponsor a special session on Wednesday evening at the FJCC. This session is planned to be an informal forum session. The panelists for the session are to be the FJCC Technical Program speakers whose topics have relevance to the social implication of our technology. The speakers to be invited and their topics are as follows:

Dr. John Carroll - "Fast Infinite-Key Privacy Transformation for Resource-Sharing Systems"

Manley R. Irwin - "Telecommunication Equipment Market (Public Policy and the 70's)"

Dr. B.F. Womack - "Model for Traffic Simulation and a Language"

Dennie Van Tassel - "Computer Crime"

J.S. Prokop - "Decision Making with Computer Graphics"

R.N. Freed - "Role of Computer Specialists in Contracting Computers"

Dr. M.G. Morgan - "Computer Jobs through Training (a Project Report)"

Contact Donn B. Parker, Stanford Research Institute, 333 Ravenswood, Menlo Park, Calif. 94025, Phone (415) 326-6200, Ext. 2378, for further information. Further announcements of this session will be made in the FJCC program booklet.

COMMUNITY CONSULTATION

Computer professionals can use their technical skills to help community groups bogged down with data processing problems. Many action-oriented groups conduct surveys and campaigns in their area of interest, and are confronted with organizing and analyzing their results. A brief survey of the Cambridge-Boston area uncovered several groups with well defined, computer-related problems who could use volunteer consultants. current needs include: organizing data from a survey of local housing conditions, computerizing mailing lists, and quick-access storing of funding information. Contact me if you will help, or if you would like more specific information.
Dianne Roberts, 60 Wyman Street, Arlington, Massachusetts 02174

Subcommittees and their leaders

LEGAL ASPECTS

Mr. Roy N. Freed
Widett & Kruger
One Federal Street
Boston, Mass. 02110

DATA BANKS AND PRIVACY

Mr. Raymond A. Semrad
9117 West 70th Terrace
Shawnee Mission, Kan. 66204

Mr. Robert H. Courtney
Dept. 931
P.O. Box 390
Poughkeepsie, N.Y. 12602

EDUCATION

Mr. Harry Ross
Dept. 919
P.O. Box 390
Poughkeepsie, N.Y. 12602

JOBS AND AUTOMATION

Mr. David J. Shakow
5520 15th Avenue
Brooklyn, N.Y. 11219

CONSUMER INTERESTS

Dr. Herbert R. J. Grosch
P.O. Box 34311
Bethesda, Md. 20034

Mail Back Page! ------------→

Proposed group bylaws

Article I - Name

This organization shall be called the Special Interest Group on Computers and Society of the Association for Computing Machinery, hereinafter referred to as SIGCAS.

Article II - Purpose and Activities

1. This Special Interest Group is organized and will be operated exclusively for educational and scientific purposes in areas where the computer in the operation of society has or may have prime importance. The Group shall have the specific objective of furthering an understanding of how the structure and operation of society may be affected, positively or negatively, by the development and applications of computers and automata.

2. The Group will promote the interest of computer professionals by:

a. Affording opportunity for study and discussion of topics within the area of the Group's interests and disseminate information on these topics to members of the Group and of the ACM.

b. Encouraging presentations of papers of special interest to the Group at National and Regional Meetings of the ACM, and assist other Special Interest Committees and Special Interest Groups and Organizations affiliated with ACM in preparing and producing programs in the field of the Group's interest.

c. Preparing proposed position papers for the Association on topics within the area of interest of the Group.

d. Providing a group within the Association to interface with other organizations that are concerned with topics in the field of the Group's interests.

e. Upon request of the Council, appearing before or filing a statement with an organization which is not affiliated with ACM, setting forth the position of the Association with respect to topics within the area of interest of the Group.

f. Publishing a Newsletter containing information of interest to this Group.

g. Other appropriate means which fulfill the educational and scientific pruposes of the Group. No addition may contradict the main purpose, as stated in Article II, Paragraph 1.

3. a. Without prior authorization of the Council, this Group shall not purport to speak for the Association in any way.

b. Without prior authorization of the Chairman of this Group, no person or group of persons shall purport to speak for this Special Interest Group.

Article III - Membership

Membership is open to any member of the ACM. Non-ACM members may belong to SIGCAS provided their major professional allegiance is not in the field of computing or information processing. No person who is not a Member, or associate member, or student member, in good standing of the Association may hold office in SIGCAS. Non-ACM members may vote within SIGCAS and must pay required dues and assessment.

Article IV - Officers and Their Duties

1. The officers of the Group shall be:
   - a. Chairman
   - b. Vice-Chairman
   - c. Secretary
   - d. Treasurer

e. Editor of the Newsletter

The same person may hold the offices of Secretary and Treasurer. Each officer shall normally serve for a two year term beginning July 1 of odd-numbered years.

2. The duties of the Chairman shall include presiding at all meetings, the appointment of all standing and ad hoc committees, and such other duties as normally fall to this office.

3. The duties of the Vice-Chairman shall be to plan the program for all meetings and to assume any duties delegated by the Chairman.

4. The duties of the Secretary shall include:

a. Maintaing the roster of Group members; this may be delegated to ACM Headquarters.

b. Keeping minutes of business meetings of the Group, sending a copy to the Excutive Director of ACM and to the Chairman of the Committee on Special Interest Groups and Committee.

c. Maintaining records and correspondence of the Group.

d. Sending official notification (2 copies) to the Chairman of the Committee on Special Interest Groups and Committees of changes in the elected officers of the Group.

e. Filing such other reports as are required by the ACM.

5. The duties of the Treasurer include:

a. Supervising the financial affairs of the Group.

b. Preparing proposed budgets as required.

c. Receiving, holding, and disbursing SIGCAS funds.

d. Maintaining and reporting financial records of the Group.

e. Reporting the Group's finances annually as required by the Treasurer of the ACM.

The responsibility for Items (c) and (d) may be delegated to ACM Headquarters.

Article V - Appointment of Officers

1. The President of ACM will appoint the Chairman of the Group.

The Chairman will serve for a period of two years, commencing July 1 of odd-numbered years, unless removed by the President for just cause.

2. The Chairman of the Group will appoint the other officers to serve at his discretion.

3. At any time, 10% of the members of the Group can petition the Council of ACM for an election of officers. The method and mechanics of this elction will be presented for approval with the petition. The council of ACM can call for this election as it sees fit.

Article VI - Advisors

1. The President may appoint one or more members of the Association to serve as advisors to the officers.

2. The officers shall refer proposed position papers and statements to be made on behalf of the Association to the advisors for comment before such documents are generally distributed within the Group.

3. The officers may request comment from the advisors on any aspect of the operations of the Group.

Article VII - Meetings

1. An annual business meeting will be held in conjunction with the annual National Conference of the A. C. M.

2. Additional meetings of National or Regional character will be convened by the Chairman as he sees fit in order to serve the needs of the Group.

3. The Group may hold meetings only in places that are open to all classes of members of the ACM.

Article VIII - Dues

Dues will be assessed each member subject to a maximum of $10 for ACM members. The exact amount will be determined by the four officers of the Group. These dues will be collected by the National ACM and will be disbursed to the Group as warranted to meet its financial obligations.

Article IX - Amendments

1. a. A resolution of the majority of the officers of the Group shall be sufficient to cause a By-law amendment to be voted on by the Group members.

b. Any member of the Group may submit an amendment to the Group Chairman; the Group Secretary shall determine whether a majority of the officers of the Group are in favor of proposing the amendment, and shall announce this determination.

c. A petition of 10% of the Group members shall be sufficient to cause a By-law amendment to be voted on by the Group members. The right to petition shall be independent of any decisions taken with respect to the procedures provided in paragraphs (a) and (b) in Article IX, Paragraph 1.

2. The proposed amendment shall be reviewed prior to the distribution referred to in Section 3, below, by the Chairman of the ACM Committee on Special Interest Groups and Committees and by the Chairman of the ACM Constitution and By-laws Committee.

3. The proposed amendment shall be voted on by the following mail balloting procedure:

a. The ballots shall be mailed out first-class mail from and returned to ACM Headquarters, unless the Group Secretary specifies an alternative mailing procedure. The ballot shall include (i) a copy of the proposed amendment including a specification of the date on which it will become effective; (ii) a copy of the article(s) in the existing By-laws that is (are) being proposed for amendment.

b. No ballot received at ACM Headquarters (or at an alternative address - if specified by the Group Secretary) postmarked later than thirty calendar days after the postmark of the last ballot mailed out shall be valid.

4. The amendment shall become effective if and only if the following two conditions are satisfied:

a. The number of valid ballots returned is greater than or equal to 25% of the total number of Group members in good standing at the time the last ballot mailed out is postmarked.

b. A majority of valid ballots returned approve the proposed amendment.

Article X - Dissolution

In the event of dissolution of the Group, all assets of the Group will be transferred to the ACM.

FJCC
1970

SICCAS Meetings

SICCAS Meetings	Date
PANEL DISCUSSION South Chapparral Room	NOV. 17 8 to 12 p. m.
BUSINESS MEETING Room F	NOV. 18 5 to 7 p. m.

Marriott Motor Hotel

SOMETHING IS WRONG THAT THERE IS SO MUCH UNEMPLOYMENT.
WHAT CAN WE DO TO PREVENT SUCH INHUMAN USE OF HUMANS ?

ed.

COMPUTERS AND SOCIETY is an informational and educational newsletter of the A. C. M. Special Interest Committee on Computers and Society. We solicit your contributions of articles, book-reviews, letters and so forth. Please keep copies. Submit material to the editor or the chairman.

The opinions expressed in signed articles and letters are those of the writer and do not necessarily express the position of the A. C. M. or SICCAS about the issues. If you don't like what you read, then write something you would like to, dammit!

Editor: Grenville R S Bingham
MIT Project MAC,
545 Technology Square, Cambridge Ma.02139
Graphics: Jane Lister

CONFERENCE REPORT

ACM '70

ALAN R. KAPLAN • Assoc. Editor

I. THE SESSIONS AND MEETINGS

Billed as "the Unconventional Convention," this September's ACM meeting in N.Y.C. brought together approximately 2000 professional registrants and an equal number of the lay public for a "dialog" on the social consequences of an increasingly computerized society. General Chairman Sam Matsa voiced the mood of the ACM steering committee by stating that this 25th conference of the Association for Computer Machinery would break with tradition by addressing itself as much to the problems of the man on the street as to those of the computer professional. Matsa then introduced keynote speaker Ralph Nader, whose familiar presence on behalf of the consumer probably did more to focus public attention on ACM '70 than either Mayor Lindsay's proclaiming the week of the conference as "New York Computer Week," or any of the meetings and sessions which followed. Nader's enormous popular appeal had the Hilton's Grand Ballroom packed to the lobby.

NADER'S ADDRESS

Nader argued that since buyer knowledge is essential to a free market, we should insist that product information generated by government procurement programs be released to the public. Computer professionals should also attempt to utilize the accident statistics compiled by insurance companies to develop "a major new mechanism of restraint on the technological pornography that is coming out of Detroit these days." The keynote speaker stressed that intrusion as well as secrecy was a common characteristic of government agencies and therefore required an "Information Bill of Rights" to guarantee individuals the right to examine government-maintained records on their personal matters. Nader stated that an adjudicatory mechanism, perhaps along ombudsman lines, was vital to enforce such an ethical code. Similar channels of redress, he said, should be made applicable to the private sector. Nader concluded his remarks with an invitation to persons interested in developing a consumer product information utility to gather materials and meet with him for further discussion.

PRIVACY A MAJOR ISSUE

The points made by Nader were developed further in the technical sessions as well as in the public "town hall" sessions which were held in the evenings. This was especially true of the data bank/privacy issue. A technical session on the FBI's National Crime Information Center (NCIC) drew several queries from the floor on safeguards to insure against misappropriation of information. The NCIC processes over 5 thousand requests daily and is interfaced directly with computers in every state except Alaska. Special agent Donald R. Broderick described the data as consisting only of warrants and "documented evidence." The system's 2 million records are continually updated, he said, and the fact that NCIC is averaging 600 "hits per day" is a significant measure of its success.

Heated and sometimes emotionally-charged questions to panel members during the evening "town hall" sessions reflected the concern of the general public for privacy considerations and giant data banks. Members of the audience rose to describe their past experiences with "the machine," and to express their fear of eventual enslavement to data bank manipulators. Panelist Dr. Herbert Grosch of the National Bureau of Standards assumed his familiar "devil's advocate" position by addressing himself to the more extreme arguments from the floor. Grosch illustrated several advantages that could result from intelligent use of data banks. Regarding their use by the Federal Government, he suggested that perhaps one carefully-watched central file would be better than the disorganized social spying that prevails at present.

Grosch's comments were generally approved by both the pro- and anti-databankers. An elderly lady who described herself to MODERN DATA as "not a programmer, but worried about what they (programmers) can do to us," summed up

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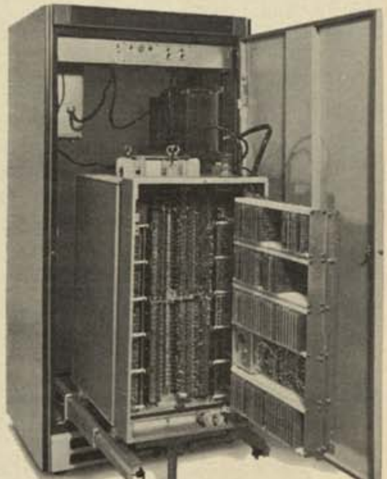

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"The impact of ACM '70 was what it accomplished in bringing the computer closer to the general public that it affects."— **Sam Matsa, ACM '70 General Chairman**

her reaction to Grosch: "I can't tell from how he talks whether he's on their side or ours — but I like what he says."

OTHER ISSUES

Privacy was far from being the only social issue to come under discussion. A meeting of the Special Interest Committee on Computers and the Physically Handicapped raised the interesting prospect that managers unwilling to consider hiring the physically handicapped may be handicapping themselves economically.

A "town hall" meeting heard several incensed individuals protest their alleged victimization by private data processing schools to Dr. Carl Hammer, head of the ACM's accreditation committee. The speakers complained that they had paid, in some cases, thousands of dollars for "education" and the promise that this would insure their immediate employment as programmers and operators.

ACM president Walter Carlson, a prime mover in shaping the convention into a forum for dissenters, ironically became a focal point for their grievances. Carlson admitted the shortcomings of the ACM (lack of effective enforcement policies, need for better communication, etc.), but described the work in progress that he hoped would correct these shortcomings. Such work, he said, included the development of standards for licensing companies which used computers to maintain credit and personnel records, and the development of a strong and enforceable code of ethics. Carlson, aware that his position made him subject to all criticisms directed at the ACM in general ("I realize I must necessarily be a catcher rather than a pitcher!"), fielded all of the fast balls thrown to him, dodged most of those thrown at him, and never lost his cool.

THE TECHNICAL SESSIONS

The scheduled technical sessions varied widely in fulfilling general chairman Sam Matsa's desire to have them "provide a forum for defining and expressing the known and expected user needs of the 'Seventies." This variance was no better illustrated than by the Medical Sector, which met in two sessions. The first session, "Computers and the Practice of Medicine," consisted of discussions on "what we have," and "what we are doing." None of the three panelists made any effort to suggest how the non-medical, commercial community could contribute in developing needed equipment or software. Prodded, one representative of the medical profession commented privately, "they (the manufacturers) are only in it (the medical area) like flies in honey."

The second medical session, "Computers and Medical Research," consisted of discussions on "what we've done" and "what we need." Each of the three panelists, Dr. A. W. Pratt of N.I.H., H. W. Shipton of the State Univ. of Iowa, and Dr. B. M. McCormick of the Univ. of Iowa, ended his presentation by outlining what he believed the industry was capable of developing for his research. The medical researchers were also impressive in that they all were obviously experienced managers, well-grounded in computer technology, and result-oriented.

Following the discussion, MODERN DATA asked one of the second group of panelists if he could suggest any reasons for the marked difference in attitude between his panel and the previous one. His answer was inconclusive but significant: "I've found from experience that if I want something done, it's first necessary to get rid of all the M.D.'s." Without trying to imply some fundamental reason for why this may be so, we hope this seeming inability on the part of M.D.'s to work hand-in-hand with the outside world will heal itself soon.

The technical session on Computer Graphics in the 'Seventies had experts from five countries plumbing the reasons for the slow growth in graphic applications. High development costs were cited as the greatest factor in the failure of graphics to realize their predicted potential.

Transportation Sector Chm. R.M. Curry of the Assoc. of American Railroads sparked his formal presentation with some well-attended remarks on how computers fit into the Penn Central picture.

Those attending the Urban Sector meetings heard a number of interesting and relevant papers including one by Henry Bruck of the M.I.T. Urban Systems Laboratory entitled "He That Filches From Me My Good Name Makes Me Poor Indeed." Mr. Bruck discussed the "technology of oppression" and spoke against the creation of elaborate systems for keeping track of "social undesirables."

A major thrust of the Earth Resources Sector was directed at the use of satellites to gather terrestrial data. Current and future applications for this data range from directing fishermen to schools of shrimp in the Gulf of Mexico to predicting ground water levels. A very real problem is that the raw data recovered from satellites exceeds presently-available processing capabilities.

"UNCONVENTIONAL?"

How successful a convention ACM '70 actually was will depend on how aggressively it follows up on its plans and resolutions. Professional conventions don't usually solicit public involvement, however, and in the sense that this one did, it was certainly unconventional. The invited "public" was present, was heard, and was involved. And if this wasn't made apparent by the fact that over 2,000 non-ACM members each paid $2.00 to visit the convention exhibits, the computer art gallery, and the computer vs. computer chess tournament, it was by the crowds that showed up for Nader and the "town hall" meetings.

ACM '70 represented, in the words of Pres. Walter Carlson, "a giant step." In a closing statement to the press, Carlson said, "ACM has succeeded in being the technical conscience of our industry. It is now engaged in becoming its social conscience as well."

LOUIS J. BROCK • Assoc. Editor

II. ISSUES CONFRONTING THE COMPUTER PROFESSIONAL

Can a specialized elite collectively wield sufficient strength to uphold its members in transcending financial pressures and maintaining a high standard of integrity? Or, has professionalism been corrupted? Is it now a dessicated ideal; a desecrated banner, abused by venal careerists and manipulated by corporate power brokers? In his brilliant keynote address Ralph Nader posed these questions to ACM '70 this year's convention of the Association for Computing Machinery when he stated: ". . . . the issue is whether employees . . . perform within the professional society as independent professionals . . . or as employers."

At the New York Hilton from Sept. 1-3 the ACM was blasted with the usual gamut of "hot" social issues—peace, poverty, environment, consumerism, and above all invasion of privacy by the computer. For the most part response was tepid. The ACM membership like the rest of American society is so polarized, demoralized, and numbed about these controversies that meaningful dialogue is virtually impossible. Moreover, the abrupt interjection of social issues at a professional convention is sufficiently unconventional that members feel their reticence is justified.

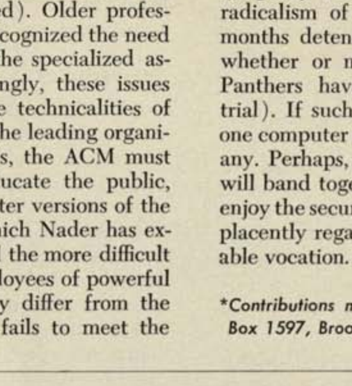
Nonetheless, suppression has its limits. The ACM is a professional organization bound together largely because each member cherishes his identity as a professional and is nurturing that identity by associating with his colleagues. An attack upon the professionalism of the group is an attack upon the rationale behind the convention to say nothing of the sponsoring organization. Such a challenge was, of course, implicit in Nader's address. However, it erupted with even greater resonance from dissidents directly involved in the convention—particularly the youthful splinter group which disclaimed a professional identity for itself by changing its name from "Computer Professionals for Peace" to "Computer People for Peace."

Against the ensuing drama the drone of the ACM technical sessions served merely a choral function. In the opinion of this observer the climax came in the Hilton Grand Ballroom when the issue was met head-on in a special panel session titled: "The Computer Professional in the 'Seventies: Responsibility and/or Dissent?" Here the panelists assailed much of what computer professionals are doing. Professor Stanley Miller of the University of Michigan spoke for a strong code of ethics to be socially-oriented rather than boss-oriented. He, also, scored professionals who would work on an improper data bank or credit file. Another panelist advocated transgression of security barriers to expose military-industrial misconduct. In addition, he attacked a pending ACM by-law which would lead to automatic expulsion of draft-resisters from ACM. Stan Robinson a CPP drop-out from the military-industrial complex admonished the group that it was better to be blackballed by the Establishment — or more topically, data banked by the Army and the FBI — than to participate in immoral military research.

Of course, the military-industrial constituents could not and did not passively absorb the onslaught. A man on the left side of the room stood up and rejoined "What right do you have to undermine National Policy?" A midwesterner cited prior conferences and discussion groups where military employees had conscientiously pondered the human consequences of their work. Finally, seizing the offensive from the critics a militant, middle-aged lady with a slight Southern drawl attacked the panelists' professionalism as being that of the World's Oldest Profession. Unquestionably, the convention participants' concern for professionalism is commendable. Yet ACM faces a real crisis. To be sure, it does not have to solve the world's problems, take an ideological position, or even provide a political forum (as CPP appears to want). Its public responsibility, however, goes beyond purging itself of unreconstructed felons (as one of its study groups proposed). Older professional groups have in the past recognized the need to offer educated comment on the specialized aspects of public issues. Increasingly, these issues are becoming involved with the technicalities of computer science, therefore, as the leading organization of computer professionals, the ACM must awaken to its obligation to educate the public, and, above all, to protest computer versions of the "technological pornography" which Nader has exposed in Detroit. This will be all the more difficult because ACM members are employees of powerful companies, whose interests may differ from the public's. Nonetheless, if ACM fails to meet the challenge it will decline from a professional organization to a trade organization.

Moreover, the ACM members may have been prodded to wonder about their responsibilities to themselves as well as to the public. Again the CPP brought the point home with its poignant plea for Clark Squire who, CPP informs us, is a former $17,000-a-year programmer, a Black Panther, and a victim of seventeen months pre-trial detention. Unfortunately, CPP's penchant for radical sloganeering (they "demanded" $50,000) greatly undermined its effectiveness in Squire's behalf because it tended to make radical sympathy a prerequisite for sympathy with Squire. Yet not withstanding the radicalism of CPP and the Panthers, seventeen months detention without a trial is inexcusable* whether or not constitutional (and even if the Panthers have been intentionally delaying the trial). If such an injustice can be perpetrated on one computer professional it can be perpetrated on any. Perhaps, someday all computer professionals will band together to assure that they actually do enjoy the security and dignity which they once complacently regarded as concomitants of their estimable vocation.

**Contributions may be sent to Squire Committee, C.P.P., Box 1597, Brooklyn, N.Y. 11202*



A SMALL COMPANY AND A BIG SYSTEM

Computer Operations, Inc. is undertaking the stiff challenge of launching a new company to develop and market large-scale systems at a time when the financial tide is at its lowest and IBM is in the process of giving birth to a new series.

Bucking the trend didn't do much for the midi-hemline. But, trend-bucking has also been the label attached to what later turned out to be among history's most creative and successful enterprises. Computer Operations, Inc. of Costa Mesa, Cal. feels it will fall into the latter category.

HISTORY OF THE COMPANY

MODERN DATA contacted Peter Warkenton, the president who explained the company's development as follows: "I had been founder and president of Information Development Co. We packaged that up in late '68 and sold it to Leasco. So I found myself at loose ends. I was with Leasco very briefly – only over the period of time that it took to transfer the business."

"I got together [with several other COI founders] and started talking about a viable way to attack the computer market – specifically the hardware market, over the next decade or so. Between us all, we thought we had a lot of ideas on what should not be done and what should probably be done. So, in January of '69 we incorporated and got started completely from our own resources. As you might expect, that didn't last an awful long time. In the Fall of '69 we did a round of private placement money that was negotiated to come in two stages of which the second has just been finalized."

"Last spring we had a design review of the system to which we invited a group of what we felt to be knowledgeable people from the user community. We invited the supplier representative principally to validate the technology, and we retained a group of outside consultants to sit in with us and look over our shoulder. The design review lasted for a week, eight hours a day, and we were, I guess it's fair to say, more than gratified at the results. The consultants were very impressed. We got some nice feedback from them. And we decided that they wanted and we wanted to continue some formal association. So we formed a Technical Advisory Board and these people were members of that board. In addition, we had retained a consulting firm out of Boston [Corporate-Tech Planning]."

The Technical Advisory Board consists of five members: Mr. Lowell Amdahl, President, Compata, Inc.; Dr. Robert L. Asheuhurst, University of Chicago; Dr. Sidney Fernback, Lawrence Radiation Lab; Dr. Martin Graham, University of California; and Mr. J. B. Wyatt, University of Texas.

THE PRODUCT

Out of COI's group think emerged Gemini Systems, a new series of large-scale computers. These systems are true multiprocessors in that they incorporate a single, large homogeneous memory subsystem which is shared by three to six independent processors. The name "Gemini" is derived from the fact that communication, peripheral, and central processors are all duplexed in the maximum configuration. Prices start at $3 million for a system with 2 million bytes of core memory. A configuration consisting of 8 million bytes of core memory, duplexed communication and peripheral subsystems, and two central processors capable of executing 12 million additions and over 3-½ million multiplications per second sells for just over $6 million – exclusive of peripherals. Larger Gemini systems with more than 1,000 simultaneously active communication lines and 16 million bytes of memory are available.

MARKETING STRATEGY

COI plans to sell $100 million annually in 1974. To meet that objective marketing is aimed at the sophisticated IBM user. President Warkenton says that the customers will be "knowledgeable individuals . . . probably in a research type of organization . . . who won't insist on tires to be kicked." COI is offering the capability to handle IBM software to aid transition and a defiant orientation toward IBM is one of the hallmarks of COI strategy. Again, Mr. Warkenton comments: "We think it's logical because seventy per cent of the world looks like IBM – [on the other hand] I don't think any of the other manufacturers are competing with IBM. They're competing with each other. I suspect that some of the reasons [that other manufacturers don't] are that they are emotionally unable to make that agonizing decision, simply to say, that we're going to scrap the way we're going [especially if they] have in place installations that are revenue bases." ▲

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FIRST MAN ON THE MOON
UNITED STATES

AIR MAIL

Mr. R. W. Bemer
Program Chairman
ACM 70 Year and Conference
General Electric Company
Mail Drop M-2
13430 N Black Canyon Highway
Phoenix, Arizona 85029

TH[illegible] WHITE HOUSE

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UNITED STATES 6c

Mr. R. W. Bemer
% General Electric Company
13430 Black Canyon Highway
Mail Drop M-2
Phoenix, Arizona 85029

116

1969 May 22

Mr. Ernest Baynard
Rayburn House Office Bldg.
Room B350-B
Washington, D.C. 20515

Dear Ernest:

Here is the first version of a proposal for the 1970 ACM Conference, not yet officially adopted. Even so, I thought you would be particularly interested in the structure and the ambition of what many knowledgeable people tell me is the first departure in computer conference design.

Notice that I have taken Government as a very important end-user, and that my first movement in this direction is to you and Congressman Brooks. In order to make this a success or, more importantly, to be useful, notice that momentum and enthusiasm must come from a large number of competent people who see this as a hope to get our planning done before the juggernaut overtakes us. I do not feel it can succeed at any lesser level; that is, for only a portion of the major end-users or professions.

I will be writing exploratory letters to the various societies and typical user representatives to test their willingness to participate in a venture of this magnitude. I would certainly appreciate having your suggestions before I do this. One of the major fears of the ACM people concerned was the possibility of an inordinate amount of expense for a year in which ACM will still be covered with fiscal embarrassment. J. A. Gosden (Vice Chairman of the Program Committee) and I did not see this as a major problem, once attention is focused sharply on the possible benefit. It seems to us that the other interested societies and possibly some Government agencies could give the necessary support in place of some of the local and less directed efforts they would undertake otherwise. What is your opinion?

I know that the full vision is somewhat difficult to get from what appears here, but it was a rush job. Gosden and I will be working to improve and clarify it, and will keep you informed.

Sincerely yours,

R. W. Bemer

po

cc: J. A. Gosden, MITRE

bcc: L. B. Cowles

1969 July 7

Mr. Ernest Baynard
Rayburn House Office Bldg.
Room B350-B
Washington, D.C. 20515

Dear Ernest:

Herb Grosch speculated on what might be the content of a letter that I, as any citizen, would write to the Secretary of Commerce on the matter of straightening out programming languages. The idea intrigued me, and I tried. Here is the result, in hopes that this point of view may be useful to you in preparing your plans for this and associated areas.

The $6 billion figure, derived in a different way, is 100% consistent with Mr. Staat's figures as given in the hearing on HR-404.

Sincerely,

R. W. Bemer

po

cc: H.R.J. Grosch
    J. W. Haanstra

Hon. Maurice H. Stans
U.S. Secretary of Commerce

DRAFT

I wish to bring to your attention a problem involving many billions of dollars of national resources which perhaps can be solved only at a national level. This problem is outlined, and a technical solution proposed, in the attached speech. Mr. Joseph F. Cunningham, Deputy Director, General Government Management Division in the Bureau of the Budget, was in attendance and is cognizant of the problem.

Summarizing this talk in the context of your interests, there is an existing inventory of over $36 billion in computer-recorded data and programs which operate upon that data. This inventory is being augmented at a rate of more than $6 billion this year, and this increment increases every year by 10% or more. Quite apart from considerations of national data banks and privacy, there is a legitimate and urgent need for these programs and data to work upon different computing equipments, from one or several manufacturers. Most of it will not, and must be redone at nearly the original cost.

One would hope that this would not be the case with new computer programs being developed, and some standardization work has been attempted to this end. As done presently, it will not be effective. A major difficulty is that the voluntary work of the U.S.A. Standards Institute can occur only after development, which has been erratic because there is no developmental body for computers which has national scope and purpose. In this void, for example, a computer manufacturer developed and promoted his own programming language, now widely used, even though it conflicted with two other U.S.A. standard programming languages. This new language was then offered as another U.S.A. standard.

Well over $4 billion of this annual $6 billion investment will be unusable on other and future equipment because of these conflicts. Resolution has been attempted via professional societies, voluntary organizations, the computer manufacturers themselves, and the U.S.A. Standards Institute. We have not succeeded. More people are beginning to think that only the U.S. Government has the capability of resolving these difficulties. It certainly has an interest, for it is said that twenty percent of the losses we speak of are sustained by Government agencies.

A National Software (computer programming) Institute, proposed unsuccessfully many times, could be a vehicle for this unifying work. The Center for Computing Science and Technology at the National Bureau of Standards could be a suitable home for such an activity, as the Commerce Department is structured, but it has neither the funds nor the direct charter.

It is interesting to note that these dollar losses, preventable with a low fractional investment, are nearly equal to the $6 billion which could not be found last year to avoid the income surtax. Because of this, I hope that this proposal will be given serious consideration.

R. W. Bemer

po

1133 AVENUE OF THE AMERICAS
NEW YORK, N.Y. 10036
(212) 265-6300

ACM Association for Computing Machinery

1969 July 17

Reply: General Electric Company
13430 North Black Canyon Highway
Phoenix, Arizona 85029

Mr. Leonard Garment, Director
National Goals Research Staff
The White House
Washington, D.C. 20500

8+272-4011
456-1414

Dear Mr. Garment:

The announcement of your appointment and of your activity was of extreme interest to me, in light of my assignment for the next eighteen months. Material is enclosed which describes a proposal for a National Computer Year, a project which appears to me to be entirely consistent as a subset of your program of work.

The letter was sent to the heads of the various organizations listed. The response so far has been almost universally favorable or else definitely interested pending further and specific elaboration.

The National Program Committee of the Association for Computing Machinery meets in Washington on July 23, and next on August 26. Before our plans mature, however, I should like to explore with you any possibilities for closer integration with your organization. I have advised your secretary that I shall call from New York on the 24th to see if there is any possibility of meeting with you the next day in Washington. Of course, I consider this matter of such importance that I would be responsive entirely to your own schedule, at any time.

RBemer

R. W. Bemer
Program Chairman
ACM 70 Conference

(602) 941-2569

/mh

enc.

CHARLES WILLIAMS x2617
MEETING 69 AUG 21 0930-1015
@ EXEC. OFFICES 17. & PA. AVE, ROOM 190

GENERAL ELECTRIC
Communicator
Information Systems Sales & Service
Vol. 1, No. 11 Information Systems Sales & Service Deputy Division August 13, 1969

Satisfied Customers Help Add New Name Account

Satisfied customers played a significant role in helping Sales Rep Lee Beeler add the City of Buffalo (New York) to GE's growing list of New Name Accounts.

According to Beeler, references from Buffalo firms, Marine Midland Services Corp (a Division of Marine Midland Bank) and by Graphic Control Corp, convinced city officials and a citizens advisory committee to the mayor that GE equipment was best for their needs.

Buffalo's order is for a 32k GE-415 tape/disc system which will utilize a DRD200 optical reader and a direct entry system for processing the city's bills. The city has purchased the equipment.

"Our system will save the city over one-and-a-half million punched cards a year," Beeler said. "The GE-415 will serve as the city's main central processing facility and we expect it to eventually assume the workload now being performed by three competitive computers."

Beeler reports he competed against "all of the major computer firms" in winning the order. The contract was signed July 31 and the equipment will be installed in September.

Bemer Suggests Computer Year For Industry

A "National Computer Year" has been called for by the Association for Computing Machinery (ACM).

The announcement was made by Bob Bemer, GE's Manager-Systems and Software Engineering Integration in the Advanced Development and Resources Services Division, in his role as program chairman for the ACM's 1970 National Conference. Bemer works with ISED people in Phoenix.

The project, Bemer says, would "look at current computer uses and then plan for development and proper application of computer systems in the '70's."

This fall, groups will be formed to study the present and potential uses of computers in specific areas. These groups will present final reports at the 1970 ACM National Conference.

Another GE man, Don Young of ISS&S Press Relations, will work with Bemer on this project, assisting with publicity.

Bemer has been a programmer for over 20 years. He has published 45 technical publications on the computer industry. He is a Fellow of the British Computer Society, was a member of the ACM Council from 1960 until 1966, and is chairman of the Subcommittee on Programming Languages for the International Standards Organization.

Young served on the Public Relations committees of both the ACM and American Federation of Information Processing Societies a year ago. He is a past editor of Business Automation and the Journal of Data Management, is author of two of the best-selling textbooks in the EDP field and is a long-standing "PR advisor" to the Data Processing Management Association.

Salary Range Upped 6%For Exempt, FERs

The Company's exempt salary structure was adjusted upward by 6 percent at all levels effective August 1, 1969. Also increased upward by 6 percent were the ranges of all FED Field Engineering Representative positions.

These moves reflect the Company's action in response to its continuing evaluation of the factors affecting the market values for managerial, professional and other positions.

Under the provisions of the affected Salary Plans, employees' salaries are accorded individual treatment based on performance. The new salary ranges provide a higher base against which individual salary determinations will be made.

SUGGESTION AWARDS have brought almost $1,500 to two ISS&S people. Bob Self, Field Engineering Rep at the Internal Revenue Service site in Austin, Texas receives a Suggestion award of $966.75 from Jim Davies (at right in top photo), Field Service Manager. Self's award was for an idea on cleaning switch contacts in DATANET*770 keyboards. Leona Davidson, statistical clerk in Sales Administration, Sales Programs Operation, receives a $500 Suggestion Award from George Garant in the bottom photo. The presentation was highly timed --- on the eve of her leaving Phoenix for Colorado on vacation. The $500 award was the largest ever received by a female employee of ISS&S. Self's award was the fourth largest ever awarded in FED.

*DATANET, Reg. Trade Mark of General Electric Co.

GENERAL ELECTRIC
Communicator

The COMMUNICATOR is published weekly for the information of people in General Electric Company's Information Systems Sales & Service Deputy Division. Photographs and information concerning individual and group activities, sales and service successes and other business-related events are solicited. Send material to B. Don Johnson, Mail Drop G-18, General Electric Co., 13430 N. Black Canyon Hwy., Phoenix, Az. 85029 or call Dial Comm 8*433-4722.

Annual Manpower Review Underway Within ISS&S

The 1969 Annual Manpower Review is underway within ISS&S and all managers have received Manager's Guides to assist them in completing the review.

All exempt employees and Field Engineering Representatives in ISS&S will be included in this year's review.

Purpose of the review is to assist in identifying potential managers as well as participants for various development opportunities. Another of the review's major strengths is that it allows individuals and managers to work together in developing career planning steps for individuals.

Participants in the Annual Manpower Review will be asked to complete Individual Talent Sheets during August and September. This will form the basis for a later career discussion with their managers.

READYING SECOND IRS INSTALLATION---The second of seven General Electric Direct Data Entry Systems to be installed at Internal Revenue Service regions across the nation has been accepted at Chamblee, Ga. Photo shows General Electric Field Engineers (left to right) Charles Robinson, Bill Wells and Don Gentry installing system.

SOUTHERN FED REGION ROUND TABLE---First of a series of round table meetings to be held in the Southern Region, Field Engineering Department, is shown. At head of table is Region Manager Jim Summerville who coordinated the session at Atlanta.

ISS&S People To Address AMA Seminars

ISS&S people will address participants of two American Management Association seminars next month and another ISS&S man spoke at an AMA seminar in July.

Frank Veith, Systems Analyst in the Cincinnati District, will speak at an AMA seminar on Production and Inventory Control in Chicago, Ill., September 3 to 5. Veith will speak on "Designing EDP and Management Information Systems for Production and Inventory Control."

During AMA seminars on Cost Accounting and Accounts Receivable in Houston, Texas, September 15-19, Carl Schroeder, Small Scale Computer Sales Development, will speak on "GE-Small Systems Development."

On July 24, Dick Coupe, Systems Analyst in the Atlantic District, spoke on "Data Base Handling Languages" at an AMA seminar on Computer Data Base for Management Information Systems in New York City.

Lee Cier, Manufacturing Industry Development, has suggested sales people in those cities involved attend the upcoming meetings to take advantage of contacts with manufacturing people from diverse companies.

Creative Response Booklet Selected For College List

The booklet, "The Creative Response," prepared by ISS&S's Marketing Communication Section to accompany our exhibit at the Spring Joint Computer Conference, has been selected for GE's "Publication List for Universities."

The publication list is sent to all major universities in the country from which GE recruits. Through the publications, GE exposes faculty members and students to GE's operations and also provides classroom aids.

July Stock, Fund Price

Here is the average GE "Stock Price" and the average "Fund Unit Price" used in the crediting of participants' accounts for the month of July under the amended Savings and Security Program.

Stock Price -	$86.554
Fund Unit Price -	$26.380

GE, IUE Begin Negotiations On Contract

Contract negotiations between General Electric and IUE got underway Tuesday with a statement by the Company noting the concern of most GE employees about inflation and rising living cost and about the future.

Commenting on indications that the economy is beginning to cool down as steps are taken to dampen inflation, GE's chief negotiator, John R. Baldwin, said, "These are basic considerations which all of us in General Electric have to face with realistic concern.

"We are all seeing a fixed pattern of cutbacks and customer caution that is still difficult to translate right now into realistic decisions about the business outlook for the next couple of years across the whole economy," Baldwin said.

The challenge facing the negotiators over the next few weeks, according to Baldwin, "is to narrow our general deliberation from what might be a level of broad expectations to a level of immediate realism as to what can be done in the next few years."

He said the Company was hopeful for a sound settlement "well ahead of any crisis deadline." (The IUE contract expires on October 26.)

Negotiations with the UE, which entered the third week on Tuesday, have been devoted to discussions on proposed contract language changes in the GE-UE National Agreement.

Military Academy Awards Contract

WEST POINT, N.Y.---The United States Military Academy has awarded a contract to the General Electric Company to upgrade its present educational computer system by the addition of a GE-635 and a DATANET-30 .

The newly added GE-635 will be the heart of a system serving approximately 4,000 West Point students who use the computer facility to acquire "hands-on" experience in daily classroom training. In addition, the Government proposes a tie-in of seven War Colleges to the Academy system, thereby providing a computer capability for military officer training throughout the United States.

The Academy first installed three GE-225 computer systems and a DATANET-30 in 1962, upgrading the system three years later to accommodate an annual 40 percent growth in the number of programs being used.

69 Sep 5

Proposed group would plan computer uses

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* * *

Exercise scheduled for firefighters; be there

Drill exercise for firefighters will be held on Wednesday from 1 to 3 p.m. for the first shift, 4:30 to 6:30 p.m. for the second shift and Thursday from 12:01 to 2 a.m. for the third shift. Volunteers are urged to attend.

DISCUSS PLANS--Donald F. Gamma, center, Manager of Systems and Research at the Zellerbach Corporation, discussed the implementation, current status, and future plans for his company's GE-400 Direct Access Programming Systems (DAPS) with Medium Systems people last week. Zellerbach now has three remote distribution points on-line with a central site GE-400 located in San Francisco. Each remote location contains a GE-115 and a teletypewriter. The presentation was made to DAPS Development and Support people in MSD. With Mr. Gamma are Hank van Dorsten, Manager - GE-400 Project, left, and Dick Mondlock, ISS&S Sales rep at Zellerbach.

* * *

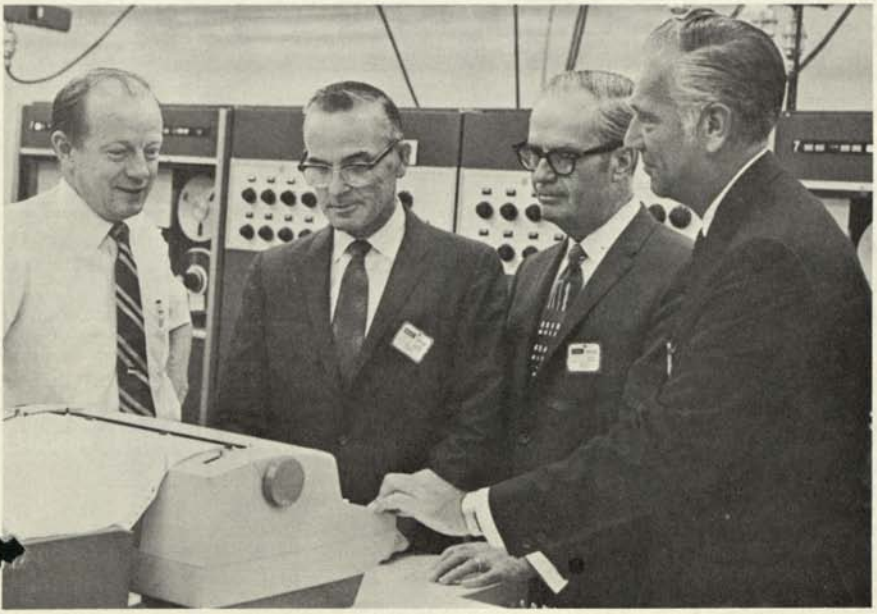
Compu-Time orders GE-430

Compu-Time, Inc., a computer time-sharing business headquartered in Fort Lauderdale and serving the state of Florida, has ordered a GE-43 Time-Sharing System from th General Electric Company.

Compu-Time, Inc., recent upgraded its GE-420 Time-Shar ing System, installed in ear 1968, to a more powerful GE 430. The second GE-430 scheduled for installation ear next year.

The GE-430 includes a Dire Access Programming Syste (DAPS) for collection, accumul tion and processing of source da from distant facilities.

* * *



IRS VISITORS--Internal Revenue Service officials visited the Camelback Road Facility recently to observe testing of equipment earmarked for one of seven IRS installations across the country. From left, John E. Magsam, IRS Project Manager for Special Systems; Ervin Osborn, IRS Director, Southwest Service Center; B. Frank White, Regional Commissioner, Southwest Service Center; and Richard B. Cranfill, National Account Manager, IRS.

TRADAR workshop in Los Angeles

TRADAR*, GE's compute ized information system f retail department stores, will the subject of a workshop Los Angeles tomorrow during t National Retail Merchan Association's annual Electron Data Processing Conference.

The workshop will examine t increasing problems of the re tail industry and the solutio envisioned through the TRADA System. Following a review current system concepts will an in-depth discussion of co justification, implementation o tions and future TRADA Systems expansion.

*TRADAR, Trademark General Electric Company.

CLASSIFIED ADS

Buy... Sell... Trade...

Ride Wanted

To Camelback Road Plant, 7-3:30 shift, from 4632 N. 48th Ave. (one block south of Camelback), immediately please. 939-7289

From N. 7th Ave. between Glendale & Northern to Camelback, 8-4:45 shift. Call Carol, ext. 5766 or 943-3001

Vicinity Tri-City Mall/Mesa, University & Dobson to DVP, office hours. Call Richard, ext. 2843 or 969-9017

Vicinity of 40th St. & Indian School, 8-4:45 shift. Call Lela, ext. 3278 or 956-4294

For Sale--Transportation

'61 CHEVY Belair, '68 high performance 327 engine, 390+hp, close ratio, 4 speed Hurst linkage, 456 positraction axle, stereo hookup. 943-0383

'65 CUTE LUV BUG, wired for stereo, new tires, must sell now. Call 944-5293

'68 FORD Cortina Wagon, air conditioning, radio, $1895. 266-3583

'65 DATSUN Pickup, very good shape, $775. 934-8026

'68 HONDA Super-Hawk, 305cc, plus helmet & shield, excellent condition, $440. 277-1346 after 4 p.m., ask for Ray, Apt. 21

'57 CHEVY, 4 door sedan, V-8, automatic, radio/heater, new rebuilt motor, $395 or will trade or best cash offer, terms. 934-6734

'65 PONTIAC Grand Prix, full power, $1500 or take over payments of $78.48. See at 7612 N. 27th Avenue

'66 CHEVY Impala, 4 door hardtop, excellent condition, radio/heater, power steering, factor air, plus new tape deck, $1950. 997-0241

'67 PONTIAC Catalina Station Wagon, power steering, power brakes, air conditioning, excellent condition. 947-4885

'66 VW, red, radio, good condition, $1150. 942-3412

'67 AUSTIN HEALEY Sprite, low mileage, radio, excellent condition, $1300. 942-6202

'66 VOLKSWAGEN, must sell, son going in service, very clean, $1225 or best offer. 275-1967

'61 VW with radio, sunroof, heater, great shape, runs & looks good, $550 or best offer. 272-5848

'64 El Camino, new engine, tires, excellent condition, full power. 936-3471

'64 TRIUMPH Spitfire, excellent condition, new paint job. 274-6377

'59 PLYMOUTH Wagon, 9 passenger, full power, factory air, auto. trans new 48 mos battery, $125. AM5-7262 or 6337 N. 31st Ave. after 6 p.m.

'53 FORD 6 Dune Buggy, shortened, roll bar, auto & dual wheels. Call 942-5985

MINI-BIKE, good condition, $65. 943-7665

For Sale--Housewares

GE built-in DISHWASHER, top loading, $25; double box spring, $15; electric KNIFE SHARPENER, $2; FLOOR POLISHER, $5; new bathroom WINDOW, $10. 274-2039

BUNK BEDS w/bookcase headboard, inner spring mattresses; Boy's 10 speed BICYCLE, excellent condition, $30. 997-0805

2 red 9x12 Oriental RUGS; early American console TV, needs repair, make offer. 939-1580

Perfect for the den, naugahyde lounge CHAIR w/matching OTTOMAN, neutral color, excellent condition. 997-0191

'68 model 800 Kenmore ELECTRIC DRYER w/service policy. 279-8654

Single BED, maple finish, mattress, box spring, $20; child's DESK & CHAIR, $8. 949-0566

Portable TV w/stand, good condition, $20. 944-3107

Beige 4-piece, sectional LIVING ROOM SUITE; Whirlpool wringer-type WASHER, almost new; Kenmore IRONER. 277-1629

Portable DISHWASHER, Kenmore, 2½ years old, used 1 year, $75. Call 997-8780

BUNK BEDS, sturdy, maple, rail, ladder, mattresses if desired; matching 4 drawer CHEST; rollaway BED, twin size; LOVE SEAT, dark wood, green upholstery. 943-2724

PLAYPEN, round, nylon net, $10. 274-7581

General Electric SWEEPER w/attachments. 274-2909

Strolee STROLLER, $14; Cosco PLAYPEN w/pad, $12; Cosco HIGH CHAIR, $6 adjustable GATE, for doorway, $1; bed GUARD RAIL, $1. 948-1972

RCA STEREO; SOFA and matching CHAIR; twin size box spring & mattress; double size walnut HEADBOARD; double size MATTRESS; cocktail TABLE w/two matching END TABLES; LAMPS. 934-2828

Green brocade, velvet trim 9' COUCH; nice student DESK; single BED; Kitchenette Set and miscellaneous items. 939-2253

BABY BUGGY; child's PEDAL CAR, reasonable 944-7697

Sears Kenmore FLOOR POLISHER/SCRUBBER/WAXER, complete with buffing & brushing wheels, excellent condition, $15. 277-6917

2 large, comfortable easy CHAIRS, $15 each. 944-9253

For Sale--Miscellaneous

Webcor RECORD PLAYER, needs needle & knobs, $10. 942-1964

Teen's and Women's CLOTHING, sizes 5-7, some larger, reasonable. 955-0147

Used sting-ray BICYCLE, good condition, $20. 937-7225

21" Penncraft rotary LAWN MOWER, 1 year old, excellent condition, $45. 942-6634

4hp Eska OUTBOARD MOTOR, Tecunseh engine, good running condition, $50. 6060 N. 7th Street

Three 15" split rim and two 15" drop center WHEELS for Jeep or Scout $40. 997-0122 Monday

Skid PLATES for '61 Scout, $15. 997-0122 Monday

Model 70 30-06 w/Redfield 4x scope, $185. 939-9837

Webster ENCYCLOPEDIA, 22 vol., '67 edition, includes two giant dictionaries, attractive white/black cover w/gold lettering, cost over $200, asking $95. 278-7957

Extra heavy American FENCING, chain link, 6' high, 100' long, 14' wide, with gate and posts, used for dog run. 942-3368

CAMPER, 10½' overhead, 20 gal. water, 75 lb. ice box, lots of storag must sell, best reasonable offer, 2 years old. 967-2169

GE HAIRSETTER, brand new, $12. 942-5418

Portable STEREO, 4 speed, 4 speakers, cost $160 new, sell for $60. 944-0721

5" oscilloscope, $55; Sine wave signal generator, $20; Triplett 310 vom, $20. 266-1017

Healthways 110 lbs BARBELL and DUMBELL set, $15. 942-3412

Rifle, 300 Savage scope, case & ammo, $75. 265-7852

Pick up TRAILER, 5'x8', good condition w/good tires. 948-0236

TRICYCLES, 20", $5; 16", $3. 274-2633

Four (4) eight inch wide SS WHEELS, $65. 944-2700

PIANO, Baldwin console, excellent, $550; Martin CORNET, $75; wood CLARINET, $55; Royal standard TYPEWRITER, $40; GUITAR, $8; FISH TANK 939-8595

Wilson Sam Snead GOLF CLUBS, 2,3,4, woods w/2-9 irons and wedge, $[illegible] 942-4927 after 4 p.m.

CAMPER TRAILER, sleeps 5, stove, ice box, lots of storage, Al condition. 265-7852

Two (2) #389 Amal CARBURETORS, will fit most British bikes and 2 cycle engines, rebuilt. 272-5229

PUPPIES, 15¢ each or two for 25¢, part Terrier, part Bissingie. Call 948-0417, will deliver

BIKE, Schwinn 26" Boy's 2 speed automatic, $35. 944-9724

King CORNET, sterling silver bell, like new, $300 horn will sell for $125. 939-5962

Electronic CAMERA, Fotron cost $415, will sell for $250 complete; FENCING FOILS, $8; STEREO Pre-amp, $8; 8mm MOVIE CAMERA, $5.939-2156

Cheap flying, '41 Aeronca Chief, 220 SMOH, new license, beautiful shape, includes spare-parts engine and I'll teach you to fly on the deal at no charge, $1800. 274-0096

For sale or trade, auto AIR CONDITIONING UNIT, complete, good condition, $45, came out of 6 cyl. Chevy, 12 volts. 934-0780

ELECTRIC MOTOR, 3/4 hp, 220 volts, single phase, 1725 rpm, GE, like new, used less than 100 hours, $25. 959-6694

Winchester lever action rifle, .22 cal w/3x-7x zoom scope, new sling case, sell all together or separately, model 150 rifle. 939-2156

Siamallese (Siamese-Alley) kittens, 6 weeks old, trained. 959-5428

Bunde CLARINET, good condition, $50. 997-0122

Six blade 2½hp reel LAWN MOWER, $30. 942-1838

Doberman Pinscher female, 5 months, champion sired, shots, ears are cropped, housebroken. 948-2953

McIntosh MR71 FM Stereo tuner, $300 form. 941-5691

Four Cragar MAGS for Ford, $80. 279-8644

FISHING BOAT, 14' aluminum car top boat and 12 hp outboard motor, excellent condition. 959-3047

Three 8:25-15 Uniroyal orig. equipment TIRES, new, $12 each; '69 Fleetside pickup CHROME BUMPER, $17. 942-2259

COOLER BLOWER MOTOR, 3/4 horsepower. 942-1542

Collins 32V-3 transmitter (32V-2 plus the 35C1 low-pass filter) 80 thru 10 meters, 150 watts CW, 120 watts phone, $100. 944-9253

TENT, 9x11, 1 window, mosquito tight, canopies, floor, $20. 944-[illegible]

WINDMILL, used working condition. 277-8712

US STAMP COLLECTION, mints, cancels, etc. most never hinged, good buy at $15. 277-6917

Electric GUITAR, excellent condition, good buy at $60. 277-7812

Alto SAXAPHONE, Conn, with case, purchased new for $200, three years old, excellent condition, sell for $175. 959-6694

Imported wood CLARINET, $25, needs minor repair. 948-2786

Concord Casset TAPE RECORDER, AC-DC or battery, w/mick, remote control, carry case & patch cords, 25 cassets included, will record 2 hours per casset, cost $175, asking $75. 944-2817

GENERAL ELECTRIC

Information Systems
Advanced Systems and Technology Operation

DIAL COMM • 8**223-1871
DATE • November 21, 1969
DEPT. • ASTO- Bridgeport
ADDRESS • 28-EE
SUBJECT •

RECEIVED
1969 NOV 24
R. W. BEMER
COPIES •

R.W. Bemer
EMIO- Phoenix
M-2

Dear Bob:

Sorry I missed your presentation to the Engineering Council on Monday. I have, however, been given a copy of the packet of information you distributed concerning the ACM National Convention.

I am very impressed by the amount of work you have done and the scope and imagination of the planning. Keep up the good work!

For your interest, I am now a regular member of COSATI Panel No. 7 on "Legal Aspects of Information Systems" which is concerned with a variety of subjects centering around various forms of rights of access, privacy and protection. This group meets monthly and consists of a series of representatives from various government agencies, plus some university legal personnel. At present, I am the only full-time technical member.

You may or may not wish to take account of the activities of this panel in your planning, recognizing that it reports upward (eventually) to Lee Du Bridge, whom you have involved through your letters.

In any case, I thought you should know what I was up to and would be very happy to have your inputs or thoughts.

Best regards,

John

John W. Weil

P.S. At the Panel meeting yesterday (November 20), the Panel chairman (John Farmakides of NASA) said he had been contacted from several sources and would like to talk over COSATI involvement. He will probably call you, but feel free to call him.

JWW

THE WHITE HOUSE
WASHINGTON

November 21, 1969

Dear Mr. Bemer:

Your letter of November 12 is much appreciated, and I have given careful consideration to your suggestion for a Presidential proclamation of a National Computer Year. The goals, scope of activities and output which you propose are excellent in concept. I favor all of the goals you list, and see much potential benefit to be gained through the activities and output. I wish to encourage you and the A. C. M. and offer you the cooperation of the Office of Science and Technology in pursuit of these benefits.

While I thus endorse the operational aspects of your proposal, I feel that it would not be desirable to include any formal Presidential statement or proclamation designating a National Computer Year. The reasons why I take this position are:

1. The President's Office as a matter of policy is not normally associated with programs which may generate controversial action and recommendations where prior endorsement of the program implies endorsement of all the actions and recommendations.

2. While several of the goals you list (3, 4 and 7) include recognition of national needs, they are much broader in principle and application than computer systems, and should not be presented within the constraints of a computer-year context.

3. Certain other goals (1, 2, 5 and 8) seem to me to be a natural part of the computer user-producer relationship which includes development of more efficient services, customer education, market planning and public relations and should not be related to a Presidential proclamation.

4. The Federal Government would be reluctant to declare national interest in a specific technological area, and then to turn primary leadership responsibility over to a single industrial association, even one as broadly representative as the A. C. M. It would be far better to have all interested components of the private sector -- associations, user groups,

professional societies, the academic community and industry--take common initiative in the activities and outputs you propose, and thereby demonstrate a national concern, then to have all of the stimulation and initiative come from a single organization.

Although my reaction to a formal proclamation is negative, my interest in your plans is both positive and approving. I hope that even without a Presidential proclamation you and your associates can make progress where it is certainly needed. We will be glad to work with you, and to encourage individual Federal agencies to do the same.

Please keep me informed of your plans.

Sincerely,

Lee A. DuBridge
Science Adviser

Mr. R. W. Bemer
Program Chairman
ACM 70 Year and Conference
General Electric Company
Mail Drop M-2
13430 N Black Canyon Highway
Phoenix, Arizona 85029

ACM70/P/59
70 Jan 16

THE NEW YORK
HILTON HOTEL

SEPTEMBER
1-3, 1970

SAM MATSA
GENERAL CHAIRMAN

IBM CORPORATION
N.Y. Scientific Center
410 East 62nd Street
New York, New York 10021
212/PLaza 3-1900

25TH NATIONAL CONFERENCE · ASSOCIATION FOR COMPUTING MACHINERY

Return To:

General Electric Company
Mail Drop M-2
13430 N Black Canyon Hwy
Phoenix, Arizona 85029

1970 January 16

TO: The Sector Chairmen

FROM: R. W. Bemer

This mailing contains documents P/53, P/54, P/55 (obsolete and superseded), P/56, P/57 and P/58. It also contains the updated register, P/43 and the updated roster P/46, which reflects:

1. Removal of Dr. Middleton for Science, due to difficulties with his management support. The position has been offered to Professor Harry Huskey, and is under serious consideration. His decision should be known by January 26.

2. Confirmation of Professor Kriebel for Management.

3. A still empty position for Data and Programs, but this problem is being attacked by John Gosden.

Also included is a report on Railway Cybernetics, courtesy of Bob Curry. I asked if it could be distributed because it is an excellent example of data collection in a specific subsector, and because it is real and visual. Corresponding data collections will be a vital part of all the work. As stated before, such data exists but needs to be collected and homogenized.

The very cautious tone of DuBridge's position on a Presidential proclamation should not be taken as indicating an irrevocable position. It is known unofficially that a broad base of support is the chief requirement, and this we are presently trying to effect via the Coordinating Committee.

The agenda for the January 26 meeting, P/60, is also attached in draft. The early starting time is vital for the required amount of work.

RBemer

po

ACM 70 Year Receives Enthusiastic Response

Sam Matsa, general chairman for ACM 70, reports that the Program Committee, under Bob Bemer, has been organized. Its structure reflects the meeting plan which has been adopted by ACM 70. The main objective is to plan for the best utilization of computers during the next decade by assessing how computer professionals will meet the challenges of the 70's. The ACM 70 Year, an activity which is national in scope, has received a very favorable response from many organizations covering the sectors that ACM 70 is focusing on. These sectors span the broad range of end users, professions, and DP resources.

The Program Committee consists mainly of the Sector Chairmen. They have the responsibility of organizing the ACM 70 Year activities for their respective sectors and preparing the Conference technical program. The Sector Chairmen are:

	END-USE SECTORS
Government	Joseph F. Cunningham, Bureau of the Budget
Cities	William L. Garrison, University of Pittsburgh
Health & Welfare	Ruth M. Davis, National Library of Medicine
Transportation	Robert B. Curry, Association of American Railroads
Education	Robert M. Hayes, Institute of Library Research
Earth Resources	Thomas L. Brener, General Electric Company
Finance	Gerald M. Lowrie, The American Bankers Association
Industry	Steven F. Furth, IBM Corporation
Utilities	E. E. David, Bell Telephone Laboratories
	PROFESSIONAL SECTORS
Engineering	H. Burke Horton, Univac Division of Sperry Rand
Law	Michael Duggan, University of Texas
Medicine	Michael G. Saunders, University of Manitoba
Science	Marshall Middleton, Computer Applications, Inc.
	DP RESOURCES SECTORS
People	Vico Henriques, Arthur Young & Co.

Each Sector Chairman is forming Working Sector Committees. Anyone interested in participating should contact the appropriate Sector Chairman.

The work of planning and organizing other activities of this innovative ACM 70 Year and Conference is the responsibility of a Steering Committee. Its committee chairmen and officers are:

Advisory, Noel Zakin, AICPA
Exhibits, Walter Carlson, IBM Corporation
Local Arrangements, Paul Oyer, Oyer Professional Computer Services, Inc.
Program, Bob Bemer, General Electric Company
Publications, Sieglinde Kress, Chase Manhattan Bank
Publicity, Sheila Howard, IBM Corporation
Registration, Arthur Hutt, Bowery Savings Bank
Secretary, Cecilie Smolen, First National City Bank
Treasurer, Ed Kahn, Chase Manhattan Bank
Vice Chairman-Coordination, Myrna Gershenson, Chase Manhattan Bank

ACM has contracted with AFIPS to manage the exhibits of ACM 70. Questions concerning exhibits should be directed to Don Cruzen at AFIPS Headquarters.

Wegner, Timlake New CACM Editors

Stuart Lynn has announced two new department editors for *Communications of the ACM*. Peter Wegner has been appointed editor for Education to succeed Peter Calingaert. William P. Timlake [illegible] succeed J. F. Traub as the editor for Numerical Analysis.

Peter Wegner, chairman of SIGPLAN, is presently at Brown University, on leave from Cornell. Dr. Timlake is located at the IBM Houston Scientific Center. Active in SIGNUM, his primary area of interest is research in the numerical solution of integral equations.

Dr. Traub has served as numerical analysis editor since 1965, evolving the department into a recognized source of n. a. contributions. Dr. Calingaert has steered the education department through a three-year period when education in computer science was in the foreground of ACM's considerations.

Letters

Financing Publication of Mathematical Research

EDITOR:

The Commission on a National Information System in Mathematics, with members representing 11 professional societies, has been studying the problems of communication in an increasingly productive mathematical community. In January, 1969, the Commission established a Committee on Publication Costs, which is now working on the specific question of how to meet the growing costs of journal publication.

At present, the committee is *not* primarily concerned with proposals to eliminate any mathematics from publication, nor with more radical schemes that would relegate some papers to more limited and less expensive distribution. Rather, assuming that mathematics will follow the history of other disciplines, with more mathematicians publishing more mathematics in more journals, we are asking how this should be paid for.

Present devices include subscriptions; subsidies by universities, societies, or government agencies; and page charges. This last has been the target of much criticism and has recently proven unreliable in the face of government expenditure limitations. The concept of page charges originated in the philosophy that publication is an integral part of the research process and the costs of setting forth the results of research (the production costs of the journal) might well be borne by the sponsor of the research. (The presswork, binding, and distribution costs are still charged to the journal subscribers.) Page charges are generally borne by the author's institution or a government granting agency; in cases of unsupported research, they are virtually never collected, and in accordance with a decision of the Federal Council for Science and Technology, nonpayment of page charges does not influence the acceptance (and, in mathematics, any other aspect of publication) of the manuscript.

On behalf of the Committee on Publication Costs, I would like to solicit comments and concrete suggestions on present or future methods for paying for journal publication.

DANIEL ZELINSKY
Northwestern University
Department of Mathematics
Evanston, IL 60201

OREST HILLS NY 11375

COMPUTERWORLD

THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY

Weekly Newspaper – Second-class postage paid at Chicago, Illinois

Vol. IV No. 6

February 11, 1970

Price: $9/year

Groundwork Readied for Computer Year

CW New York Bureau

NEW YORK – Representatives of between 50 and 75 professional societies will meet within two months to lay the groundwork for a national or international computer year.

The effort, suggested last July, is seen as a program to define the role that computers can play in helping to solve national problems in such areas as medicine, law, transportation, urban affairs, education, and communications.

Early organizers of the proposed project say they are hopeful that President .Nixon will proclaim a national computer year, after their initial plans are formulated, and say that there is interest in the United Nations to give the project an international scope.

Background Outlined

The computer year idea was proposed last July by Robert W. Bemer, program chairman for the ACM's 1970 National Conference, to "take present inventory and then formulate an integrated plan for the development and proper application of computer-based systems in the '70s."

In order to fulfill the idea, ACM contacted 170 professional societies "that are impacted by computer technology" asking for their participation. Almost 75 of these groups agreed to participate and have appointed representatives to a coordinating committee that will meet in March or April, CW was told last week.

The representatives of the various groups, which run the gamut from the American Medical Association to the National Research Council, will try to tell the computer profession "what it must do" to be of the greatest aid in each professional area.

ACM Seen As Catalyst

Sam Matsa, general chairman of the 1970 ACM conference, stressed that ACM would be just a catalyst for the proposed computer year.

"We hope that the 1970 ACM conference can serve as a kick-off point for this national effort since it will be devoted to many of the issues that will be discussed during the year, and will draw participants from many of the societies involved in the coordinating effort. But we can't

(Continued to Page 4)

Groundwork Readied For Computer Year

(Continued from Page 1)

dictate to the coordinating committee, since we only have one vote on the committee," Masta added.

Interest in the project has already been expressed by the National Goals Research Staff in the White House, Matsa stated. This group was established last July by President Nixon to forecast future developments and assess "the longer-range consequences of present social trends."

In addition, Matsa said that members of the White House staff had indicated that it would be appropriate for President Nixon to announce and proclaim a computer year after the national effort was underway.

In addition, Matsa told CW that there is presently a great deal of interest in the project among members of the Congress. The response from Capitol Hill, he said, has been good, and promises of support are expected from several Congressman.

An international scope could be given to the computer year if more interest develops in the United Nations, Matsa said. He noted that the U.N.'s office for Science and Technology will be presenting a report in June on the "Impact and Role of Computers in Underdeveloped Nations."

Dr. Benjamin Barg, who is preparing the U.N. report, will be participating in the 1970 ACM conference, Matsa said, and the possibility of U.N. participation in, or sponsorship of, an international computer year is being actively explored.

At present there is no set program for the proposed computer year and the coordinating committee is expected to establish the policy direction at its upcoming meeting, Matsa said, but the general goals of the year are evident from conversations with some of the early supporters.

The project would, for one, be a national effort at crosstalk between the various sponsoring professions and the computer profession. Or as one of the early proponents put it:

"The data processing industry, like so many other American industries has not been responsive to the real needs of people. It has been an industry that speaks mainly to itself. ... We believe that the time when our industry can afford to continue to speak only to itself has passed.

"Instead we must identify the needs of our planet, and by creating a dialogue with leaders from every sector of society, find out in what specific areas we must apply our knowledge and resources."

Another spokesman said that the computer year should be utilized to get a "real plan" on how computers should be utilized to best meet national goals and priorities.

It should be used to identify not only new technologies that are expected in the next decade, but also how those technologies as well as present technology can best serve the population of the U.S. and the world, he said.

GOVERNMENT CLOSEUP

Somebody Up There Doesn't Like Computers

BY JACK ROBERTSON

WASHINGTON. — THE NEWEST WHIPPING BOY for Government is shaping up: Computers.

Surprisingly, the nanosecond, megabit storage marvels are coming under increasing attack from many levels. Just as space capsules, military aircraft, and now aircraft carriers are taking their lumps, computers are threatened next.

The General Accounting Office claims many Federal agencies are rushing out to buy new computers—when they haven't fully used the machines they already have. The Watchdog charges that Federal customers are bedazzled by the computer fashions—they jump to buy next generation systems, when last year's model will wear just as well.

The House Government Operations Committee has a running battle to force agencies to share computer capacity — rather than each running out to buy its own machine. Now GAO and Congress threaten to put some teeth into the committee recommendations.

The Senate Defense Appropriations Panel cut back Pentagon money for new computers — and said it is going to take an even harder look this year on whether the military needs all the new data systems it requests.

Of course, the Government's voracious appetite for data calls for a steady diet of new computers. But need alone is no guarantee that the computer joyride will spin merrily along uninterrupted.

SINCE UNCLE BUYS $2.2 BILLION WORTH of data systems a year, his computer "accentricities" bear watching.

Even more ominous storm clouds loom on the horizon. A new elite — including such notables as Ford Foundation's McGeorge Bundy and former Chief Justice Warren — are warning that computers threaten to get out of control.

They fear growing inter-connected data banks will invade citizen privacy, invite Government and business coercion of individuals. Trouble-shooter Ralph Nader charges that an Atlanta credit bureau has files on 50 million Americans, which is being used by some Government agencies.

Computer firms can point to elaborate code locks and safeguards on data memories to prevent unscrupulous use by unauthorized sources. But this is likely to satisfy the Middle American no more than the Army's fail-safe nuclear ABM convinced him to put Sentinel bases in his urban backyard.

There is a growing public fear of computers. John Doe jokes about the automated society—but humor is often psychological relief for anxiety he cannot put into words.

Similarly data bank invasion of privacy becomes a cause celebre —a handy scapegoat for all the inner worries about runaway computers.

CRITICS PROMISE CONGRESSIONAL INQUIRIES, law suits, Government regulation of data banks — and this may be only the beginning.

Computer firms have been slow to adjust to the new challenge. In too many cases, manufacturers have been too concerned with getting 10 nanoseconds faster switching time to worry about how their machines are used.

They should take a printout page from space firms. Some NASA contractors became so enchanted with their circuit wizardry they forgot about the man in the street. But the proverbial Kansas City milkman could not understand — much less appreciate — the electronic masterpieces.

When the space chips were down, industry had little grassroots support.

It's hard when you're riding the top of the heap to envision ever a turn in fortune. But political and bureaucratic winds are fickle. And already enough governmental rumbles are heard to concern computer people.

Stafford Beer, professor of cybernetics at Manchester University, sounds the warning: Sell mega-benefits, not mega-bits.

The Association of Computer Machinery is talking about an 18-month Computer Year as its interdisciplinary search on how to use computers for national goals. Such industry-initiated drives may help head off trouble at the pass.

National Computer Year Planning Hurt by Afips and IEEE Apathy

NEW YORK – It appears that a squabble is growing among the various computer-related associations and organizations over the Association for Computing Machinery's proposal for a National Computer Year, and the split could possibly torpedo the effort before it is fully launched.

The National, possibly International, Computer Year was originally proposed in July by Robert Bemer, program chairman for ACM's 1970 National Conference. It has received support from between 50 to 75 professional societies, according to ACM [CW, Feb. 11].

However, CW has learned that two influential societies in the computer field, the American Federation of Information Processing Societies and the IEEE Computer Group, are withholding their support from the project and will not take part in the planned computer year coordinating conference, which will be held in either late March or early April.

The ACM organizers of the project told CW that Afips was one of the first organizations contacted for support of the project when it was formulated last July. The group, however, rebuffed the ACM effort at a meeting of its executive committee in August.

An Afips spokesman told CW that the executive committee rejected the idea because it felt that there was not enough time to implement the idea by 1970, which was originally proposed for the start of the National Computer Year. However, ACM sources indicate that Afips has not shown any interest in the idea even after it was made an open-ended project without any set starting or ending date.

ACM sources said that Afips was welcome to participate, even at this late date, and that if it joined the coordinating committee it could ask for delays in the project for more time to plan, if that is its real objection.

Some ACM sources, in fact, see the time factor as a dodge on the part of Afips, and accuse the society of wanting to take over the project.

"Afips really likes the idea," one source told CW, "but they want to run it and have everyone follow after them. They don't want to participate now because they wouldn't be able to run it. they would have only one vote like the other societies."

The attitude of the IEEE Computer Group seems to support this last contention of the ACM. The group, in correspondence with ACM, announced that it would not support the project, unless it was run by Afips.

While the overall IEEE group will not support the project at the present time, the organization's New York City chapter does plan to send a representative to the coordinating committee meeting this spring in conflict with the national policy of the group, CW learned.

In answer to the charge that it was blocking the project because it could not run the show, an Afips spokesman told CW that "Afips has not taken that position.

"Afips is not against anything that will promote computers or peoples' understanding of them. But any computer year will need more planning and sufficient organization before it can receive Afips support," he said.

While Afips as an association will not participate in the initial planning sessions for the proposed computer year, some of the constituent societies of the association do plan to send representatives, CW discovered.

Of course, ACM, which is an Afips member, plans to participate in the planning, since the computer year was basically its idea. In addition, the American Institute of Certified Public Accountants and the Society for Information Display, both Afips members, will send representatives to the computer year planning sessions.

In referring to the Afips position, a source at ACM told CW, "If they really believe that this is a good idea that just needs more planning, you would think that they would offer their services and resources to help the initial planning effort."

However, the ACM source added, "I think that Afips will come around and eventually support the project."

COMPUTERWORLD
70 FEB 18

Editorials

Computer Year Deserves Support

The idea of a National or International Computer Year, designed to focus attention on how computers can help solve man's problems and contribute to improving the quality of life for all, deserves the support of all members of the computer community.

The negative reaction of Afips and the IEEE Computer Group to the ACM proposal is unfortunate.

If these two powerful influences in the computer community choose to "drop out" and "not become involved" because they do not think there is enough time to plan for the proposed year, the computer community, the nation, and ultimately the world are the real losers.

Perhaps there is not enough time to plan sufficiently and still begin the computer year in 1970. After all, the planning for the International Geophysical Year went on for more than three years.

But if we are to have rational planning for a computer year, everyone in the computer field should start thinking and planning now. Only by coordinated planning will we ever be able to run and support a project of this importance and magnitude.

We believe that the direction laid down by ACM – to bring in noncomputer societies whose members are affected by computer technology – is the right path to follow on such a project.

It is time, we feel, that the computer community stopped talking to itself.

By asking other societies to participate in a computer year, and by interacting with them and attempting to understand their problems and needs during that year, the computer community can show its maturity, and hopefully its commitment to upgrading the quality of life.

THE FORD FOUNDATION
320 EAST 43RD STREET
NEW YORK, NEW YORK 10017

February 25, 1970

Mr. R. W. Bemer
General Electric Company
Mail Drop M-2
13430 N. Black Canyon Hwy.
Phoenix, Arizona 85029

Dear Mr. Bemer:

Mr. Dressner's office has forwarded your letter of January 27 to me for reply.

The Foundation is currently involved in several on-going, funded, programs relating to the computer and information-processing fields. Thus we would be interested, both for our own information and for our grantees, in cooperating with you as you develop your plans for the National Computer Year. I would be happy to talk with you, at your convenience, the next time you are in New York.

At the present time I do not have any specific means of cooperation in mind, but would hope certain ones might be forth coming after our initial meeting. If, at the moment, you have in mind the possibility of the Foundation providing funds for part of the work, I would appreciate your letting me know in advance so that I could invite one of our appropriate Program officers to sit in on our first conference.

Sincerely yours,

Robert V. Williams

Robert V. Williams
Records Manager

RVW:br

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ACM
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THE NEW YORK
HILTON HOTEL

SEPTEMBER
1-3, 1970

SAM MATSA
GENERAL CHAIRMAN

IBM CORPORATION
N.Y. Scientific Center
410 East 62nd Street
New York, New York 10021
212/PLaza 3-1900

25TH NATIONAL CONFERENCE • ASSOCIATION FOR COMPUTING MACHINERY

Return To:

General Electric Company
Mail Drop M-2
13430 N Black Canyon Hwy
Phoenix, Arizona 85029

1970 January 27

PROGRAM
R. W. Bemer
General Electric Co.

SECRETARY
Cecilie Smolen
First National City Bank

TREASURER
Edward Kahn
Chase Manhattan Bank, N.A.

EXHIBITS
Walter M. Carlson
IBM Corporation

LOCAL ARRANGEMENTS
Paul Oyer
Oyer Prof. Comp. Svcs.

PUBLICITY
Sheila Howard
IBM Corporation

REGISTRATION
A. E. Hutt
Bowery Savings Bank

PUBLICATIONS
Sieglinde Kress
Chase Manhattan Bank, N.A.

ADVISOR
Noel Zakin
AICPA

Mr. Howard R. Dressner, Secretary
The Ford Foundation
320 East 43rd Street
New York, N.Y.

212-573-5000

Dear Mr. Dressner:

In a telephone conversation, Mr. William Nims of your office suggested providing you with some material on a proposed National Computer Year, an effort presently underway to put computers in service to society by projecting best utilization for the next decade.

This project has been started by the Association for Computing Machinery, which will work on the lines of the proposed model until 1970 September, laying the groundwork and proving the model for a following year that we hope the President will proclaim to be National Computer Year.

I wish to make you aware of this work at an early date so that you may assess the possible value to and impact upon the projects of the Ford Foundation. I would ask that you direct particular attention to the proposed goals, as outlined on the third page of the proposal to Dr. DuBridge. I assure you that there is a climate in the data processing industry favorable to relinquishing the computer as a toy and goal in itself, and to recognizing it as a powerful tool which if applied concertedly in the national interest can aid substantially in alleviating some problems of society, even those brought about by the computer itself.

I have included documents

- P/49 Proposal to Dr. DuBridge
- P/56 (indicating liaison with the United Nations study)
- P/57 Answer to Dr. DuBridge

Following study of these documents by some appropriate member of your staff, I should be glad to provide further information to specific points in a personal visit. This would be no inconvenience, as the New York basing of the conference demands my frequent presence there.

Sincerely,

RBemer/p

R. W. Bemer
Program Chairman
ACM 70 Year and Conference

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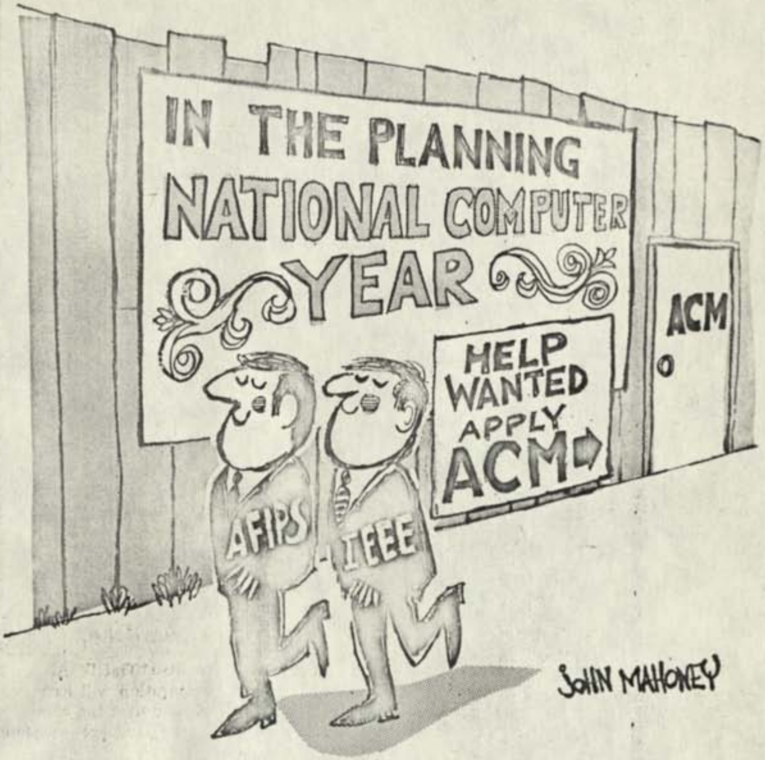
The Unconcerned



Letters to the Editor

Data Bank Restriction Suggestions Requested

Congress needs help from experts in the computer technology field on data security.

Let me frame the problem in this way. Two large national individual-file data banks are proposed in legislation before Congress in the form of the Job and Welfare Data Banks. The purposes they are designed to serve have my support. But, no restrictions or controls on their operation are contained in the legislation under consideration.

If you were a congressman, what restraints on the content, organization, and security would you recommend be spelled-out in the statutes creating these data centers?

Suggestions and any reference materials provided will be shared with my colleagues working on

unorthodox behavior, but also because he would not kowtow to Whitey.

And you of all people should know the garbage-in-garbage-out law. The only argument the "fight" settled was who the "experts" think is the all-time champion, since they were polled to provide the input. But there has never been any argument over whose side they have been on since before the Clay-Liston fight. And they were wrong then too.

Mark Albertson

166 West Brookline St.
Boston, Mass.

Non-College Programmers Have Fewer Choices

In regard to the article "Noncollege Programmers Show Better Loyalty" printed February 11,

Information Week

Groups withhold Computer Year support

by Laton McCartney

NEW YORK — If the Assn. for Computing Machinery is to mount its proposed National Computer Year in 1970, it apparently will have to do so without the support of such computer-related organizations as BEMA, AFIPS, IEEE Computer Group and possibly DPMA, it was learned here recently.

None of these societies and associations plan to participate in the project, which was originally put forth by Robert W. Bemer, program chairman for ACM's 1970 National Conference. Bemer's plan called for an overall inventory of the data processing industry and a subsequent formulation of an integrated plan for the development and proper application of the computer-based systems in the '70's.

Almost immediately, ACM adopted the project and proposed it be initiated at ACM '70 in September. That ACM should use its own exposition as a launching pad for the proposal, apparently irritated some people. A DPMA source explained that originally he thought the computer year was not to have been bound so tightly to one organization's exposition. "Initially," he said, "all the various organizations would have endorsed the project and then go their separate ways. The ACM effort would have merely been its contribution, and that way there would have been no problem."

The criticism voiced most frequently against the project is that it has been launched too hastily.. The DPMA source suggests a stronger appeal for President Nixon to officially designate 1970 as National Computer Year could have been made if the project plans had been set into motion early enough.

BEMA liked the idea, but rejected it because it felt there simply wasn't sufficient time to mount it properly. "Our committee turned down the request because we felt it would be foolhardy at this late date," a BEMA spokesman said. "They asked us to tie our 1970 exposition into the theme. We'd love to have done it, but you can't just jump into something like this."

AFIPS voiced similar feelings. "It's a damn good idea," an AFIPS spokesman said, "but if an effort of this scope is going to be launched, it has to bear proper fruit."

ACM counters these criticisms by emphasizing that the computer year isn't really getting underway until September, and may well run into or through 1971. By September, it feels, most organizations could make the necessary preparations. One ACM source suggests AFIPS, particularly, is using the lack of sufficient time argument as an excuse and would like to take over the project itself. AFIPS strongly denies this.

With or without the support of other computer-related organizations, ACM seems determined to go ahead with its plans. According to Sam Matsa, general chairman of the ACM conference, the project has received favorable reaction from approximately 50 organizations, and 35-40 groups, including the Society for Information Display, the American Medical Assn. and the American Institute of Certified Public Accountants, will send representatives to a coordinating conference to be held in the next few months. In addition,, committees have been drawn up to investigate the part that data processing can play in alleviating problems in government, education, earth resources, medicine and other fields, and ACM still feels there's a good chance the idea.

3/2/70 page 6

U.S. DEPARTMENT OF COMMERCE
National Bureau of Standards
Washington, D.C. 20234

March 4, 1970

Mr. Robert W. Bemer
General Electric Company
13430 N. Black Canyon Highway
Phoenix, Arizona 85029

Dear Bob:

I must say, your letter for Ed David was a wowzer! Doesn't look to me as if such an ambitious workshop could be put together by April. However, I still offer house room at NBS or Commerce if you go ahead, either on the scale shown or on a reduced one. The exact dates will of course be needed, and I can't approach Tribus until I have 'em.

Somewhat separate subject: I wasn't happy with p. 3, ACM 70 Newsletter 4. Both the David workshop and the Duggan classification writeups looked, ah, overconfident.

Back at the ranch, your proposed news release--how do you propose to restrict attendance? If that hits *Electronics News*, *Computerworld* *et* *al*, most manufacturers will send two or three guys, and you're up to 500 before you can say "Ouch!" So I think the general verbiage ought to somehow say "one to a company" or "write for an invitation."

Sincerely,

Herb

H.R.J. Grosch
Director
Center for Computer Sciences
and Technology

Bell Telephone Laboratories
Mountain Avenue, Murray Hill, N. J. 07974
Telephone 201 582-4025

E. E. DAVID, JR.
Executive Director, Research
Communications Systems Division

March 6, 1970

Mr. R. W. Bemer
General Electric Company
Phoenix, Arizona 85029

Dear Bob:

I appreciate your initiative in preparing the letter to Herb Grosch about the proposed workshop on terminals and communications for my signature. I have spoken with Herb about this matter, and I understand he is writing to you about his situation. In any case, we both agree that proper preparation for such a workshop will require a major effort to set up an appropriate program. That is particularly crucial because of the importance of the subject and its controversial nature. I do not have the necessary time to spend on this between now and April.

More generally, as I know you have noticed even from a distance, I have not made any progress as Chairman of the Communications Sector, ACM 70. There are several reasons for this. First of all, my own time is essentially fully occupied. In accepting the chairmanship of the Communications Sector, I had counted on help from a number of people here and elsewhere. None of this has materialized. You remember that we discussed the matter of Dick Hamming early. He is out of the picture completely, as are my other nominees.

Secondly, I have been somewhat mystified by the deluge of paper from your headquarters. Maybe it is just that I don't like to read masses of paper, but somehow I have been unable to get the gist of the plan and outlook.

Thirdly, because of my lack of understanding, I have not been able to formulate a course of action compatible with your objectives.

So, you see it is not that I have been lazy but rather thoroughly puzzled as to what to do. The lack of time and assistance seems to me to preclude my taking an effective part in the ACM 70 activities. I would be glad to solicit a few papers on the subject of computers in communications. These might be presented at the Fall ACM meeting. However, I cannot do anything beyond this. I am sorry to be so bearish, and I hope I have not caused you any great inconvenience. Let me know if you would like me to solicit a few papers.

Yours truly,

Ed David

MEETING

ASSOCIATION FOR
ACM
COMPUTING MACHINERIES

RECEIVED
1970 MAR 9
R. W. BEMER

ENGINEERING CENTER G-202
WED. MARCH 11, 1970
8:00 P.M.
~1 hr + Q

R. W. BEMER

1970 CONFERENCE PROGRAM CHAIRMAN FOR
ASSOCIATION FOR COMPUTING MACHINERIES

A FIRST LOOK AT NATIONAL COMPUTER YEAR

A VENTURE ON THE LINES OF THE NATIONAL GEOPHYSICAL YEAR WHEREIN COMPUTERS ARE DEDICATED TO THE GOALS OF SOCIETY.

IF YOU HAVE ANY
OTHER QUESTIONS
GIVE ME A CALL.

Mike Jordan
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of Sciences has begun an investigation into the extent of computer data banks and their impact on individual freedom and due process of law.

A panel of 23 businessmen, scholars, government officials, lawyers, and computer professionals will act as advisors to the study. Among them are Nicholas Katzenbach, former U.S. attorney general and now a vice-president of IBM; lawyer Ralph Nader, and Anthony G. Oettinger of the National Academy and professor of applied mathematics at Harvard.

The principal investigator is Dr. Alan F. Westin, professor of public law and government at Columbia University, who has put together a research staff to conduct the two-and-a-half year study.

The Russell Sage Foundation is financing the project's $149,500 budget.

Plan of Action

Westin said that one problem concerning regulation of data banks is that "no one has systematic information" on their extent or effect. Though the study is without any official power, it will for the first time provide information to "describe the legal, judicial, administrative, technological, and organizational measures that might be taken to assure the proper balance" between efficient data use and individual rights.

The advisory panel will meet with Westin and his staff late this month to discuss a questionnaire Westin will send to organizations across the country with data banks.

Westin and his staff will then follow up this questionnaire with on-site visits and meetings with the panel to discuss the results.

Later the study group will prepare a draft report to submit to the committee in June, 1971.

One of the purposes of the study will be to

Unregulated and unsupervised use of data banks may make individual privacy and due process virtually meaningless, Westin said in an interview. He asserted that unless safeguards are established within the next five years, the situation may be impossible to regulate.

There are no laws or precedents to support an individual's right to see, contest, change, or eliminate any fact about him in a data bank, Westin noted.

The study will cover hundreds of public and private computerized dossier files, including the FBI's National Crime Information Center, police intelligence files, the Army Intelligence System, credit investigating firms, hospitals, unions, churches, motor vehicle bureaus, and universities.

Westin said: "Almost inevitably, transferring information from a manual file to a computer triggers a threat to civil liberties and privacy, to a man's very humanity, because access is so simple."

Computer Professionals

Of the 23 advisors, only two are computer professionals, speaking strictly. They are Roy Nutt, vice-president of Computer Sciences Corp., and Dr. John R. Pierce, executive director of the research communication sciences division of Bell Telephone Laboratories. There are two scholars with computer credentials–Oettinger, who is also chairman of the computer science and engineering board of the National Academy of Sciences, and Robert M. Fano, Ford Professor of Engineering at MIT, and chairman of the Institute's Committee on Privacy of Information.

Fano said that no matter how strict the technical or legal safeguards, all computer data banks were

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CW 70 MAR 16

ell Agrees to Withdraw Isal Plan

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Bell levied increased charges to selected time-share firms including Com-Share, Inc. and GE, under state special assemblage tariff provisions.

These companies together with the Computer Time-Sharing Services Section (CTSS) of Adapso, the U.S. Department of Defense, and other affected companies, objected before the utilities commission and officially intervened to block the rate increase request.

Since the Isal proposal was part of the overall rate increase package, Ohio Bell was unable to collect any of the increased revenue until the entire rate package won commission approval. This approval was contingent on resolving the Isal question to the satisfaction of all parties.

The agreement to withdraw, as filed last week with the commission, included provisions to "delete any reference to Information System Access Lines and . . . "to delete any reference to exchange reclassifications."

The agreement further stated "No party hereto will appeal to the Supreme Court of Ohio or directly or indirectly try to procure a review, rehearing, or reconsideration . . . [of the decision].

In refering to the decision as a victory, John Duffendack, communications manager of Com-Share and chairman of the CTSS communications group, said: "Although this was a local issue, the action by Ohio Bell cannot but help influence future decisions by Bell companies in other states."

He added that the effect of the decision will be to eliminate the

(Continued to Page 4)

Afips Changes Mind, Will Work for Computer Year

By Drake Lundell
CW New York Bureau

NEW YORK – The major computer organizations now appear to be joining with ACM over the issue of a National Computer Year, despite earlier indications of non-support for the idea.

Although Afips earlier told CW [CW, Feb. 11, 18] that it did not plan to send a representative to the initial coordinating conference for the proposed National Computer Year, the organization now "will definitely be represented" at the meeting, a spokesman told CW recently.

Whether the Afips participation would be active or merely on an observer status could not be learned. A meeting of the Afips board at the Spring Joint Computer Conference will probably discuss the issue and decide whether its representative would be official or not.

The Afips spokesman also said that constituent members of Afips would be "encouraged" to participate in the planning for the year. These include the

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partment of public affairs, University of Minnesota and former mayor of Minneapolis.

Rep. Ogden R. Reid, (R–West-

William Spencer, executive vice-president, First National City Bank.

Roderick O. Symmes, director of the political science department of MIT and director of the Joint Center for Urban Studies, Harvard University and MIT.

Adapso Predicting Bell Conflict

LOS ANGELES – "The next major issue to come to a head quickly is telephone company entry into the service bureau industry. Our position is that we do not believe it should be permitted for any constitutional monopoly to enter into a competitive business," predicted J. L. Roy, president of Randolph Data Services Inc., and president of the Association of Data Processing Service Org. (Adapso), at a recent meeting here.

On March 3, Adapso won a round in a battle to stop banks from competitive service bureau operations when the Supreme Court upheld its right to sue the U.S. Comptroller of the Currency for permitting national banks to enter the data processing service field. This was a reversal of a lower court decision and clears the way for the suit. Also in the works is legislation to prohibit specifically one-bank holding companies from entering into this activity. It has successfully passed the House and is now before the Senate Banking and Currency Committee.

The case was instituted by Adapso and Data Systems, Inc., of Minneapolis, against the American National Bank and Trust Co. of St. Paul and the Comptroller of the Currency.

On the telephone company issue, Roy said that Adapso's original position was that if telephone companies set up subsidiaries for the work similar to IBM's SBC, this would not violate competitive principles. It has since concluded that as service bureaus, particularly those in the time-share field, are so dependent upon lines, they would be in the position of competing with their supplier.

He said that Adapso supplied a position paper to the Canadian Government group that was studying the telephone company-service bureau relationship, and in part based upon its information, Canada ruled two years ago that telephone companies would not be able to enter the business.

Roy also observed that the Bank of America, for example, has formed subsidiaries for leasing, facilities management, and software services and is just waiting for a one-bank holding company ruling before moving ahead. He said this is a familiar pattern throughout the country and it is only a matter of time before it is into the time-share business.

Members of Adapso were not particularly concerned about the tight money problem. They felt that service bureaus were favored in a recession, that the rate of new entrants might decline a little and the rate of undercapitalized entries will decline, but otherwise the industry will weather it well. They predict a continuation of the 20%-30% growth rate in volume of business for service bureaus and a 60%-80% growth rate in volume of time-share business.

Officers of Adapso concluded that one of the greatest needs of the data processing industry is a separate data communications network.

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Afips to Work for Computer Year

(Continued from Page 1)

IEEE, which had earlier indicated that it would not support the project unless sponsored by Afips.

Plans Still Hazy

The plans for the National Computer Year are still up in the air for the year and no definite agenda–or even a starting date–will be made until the initial meeting of the coordinating committee. No definite date has been set for this meeting, but it should be sometime in the early part of April.

The originator of the idea, Robert Bemer of GE, still hopes that the on-going National Computer Year program will draw heavily on the data generated for the ACM 1970 conference. This data will attempt to define some of the problems facing the participating disciplines–medicine, law, urban affairs, etc.–and attempt to set guidelines on how the computer community can help solve them.

Support for Year Growing

The potential support for the National Computer Year is on the up-swing, according to proponents of the idea. Dr. Lee Dubridge, President Nixon's science advisor, recently indicated that the idea of a National Computer Year is of "much potential benefit" and promised cooperation of his office in implementing the plans, according to Bemer.

Dubridge, Bemer said, has named Col. Andy Aines of his office as a representative to the planning sessions and as the contact point between the executive branch of government and the computer year planners.

The planners hope to receive foundation support of the projects undertaken during the year. Bemer said that the Ford Foundation has already shown some interest and that discussions were underway with other foundations on the possibilties of support.

Other support is expected from the Computer Science Board of the National Academy of Sciences/National Academy of Engineering, the Planners said. Another quasi-governmental body, the National Research Council, will be represented during the planning phases of the project.

The coordinating committee for the year must set definite dates and plan the future direction of the year, Bemer said. Although ACM initiated the idea, he said, it is now just one member of the coordinating committee and "will do anything to get the year started," even if it has to be postponed for a while.

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News Editor.
n, Circulation

Ohio Bell Agrees to Isal Withdrawal

(Continued from Page 1)

special assemblage charges with respect to Isal lines and in addition cause an "immediate roll- apparently is so."

When asked whether the Isal concept could be proposed again at a later date by Ohio Bell, the which is expected to be approved by the Public Utilities Commission, the rate increases will go into effect April 1.

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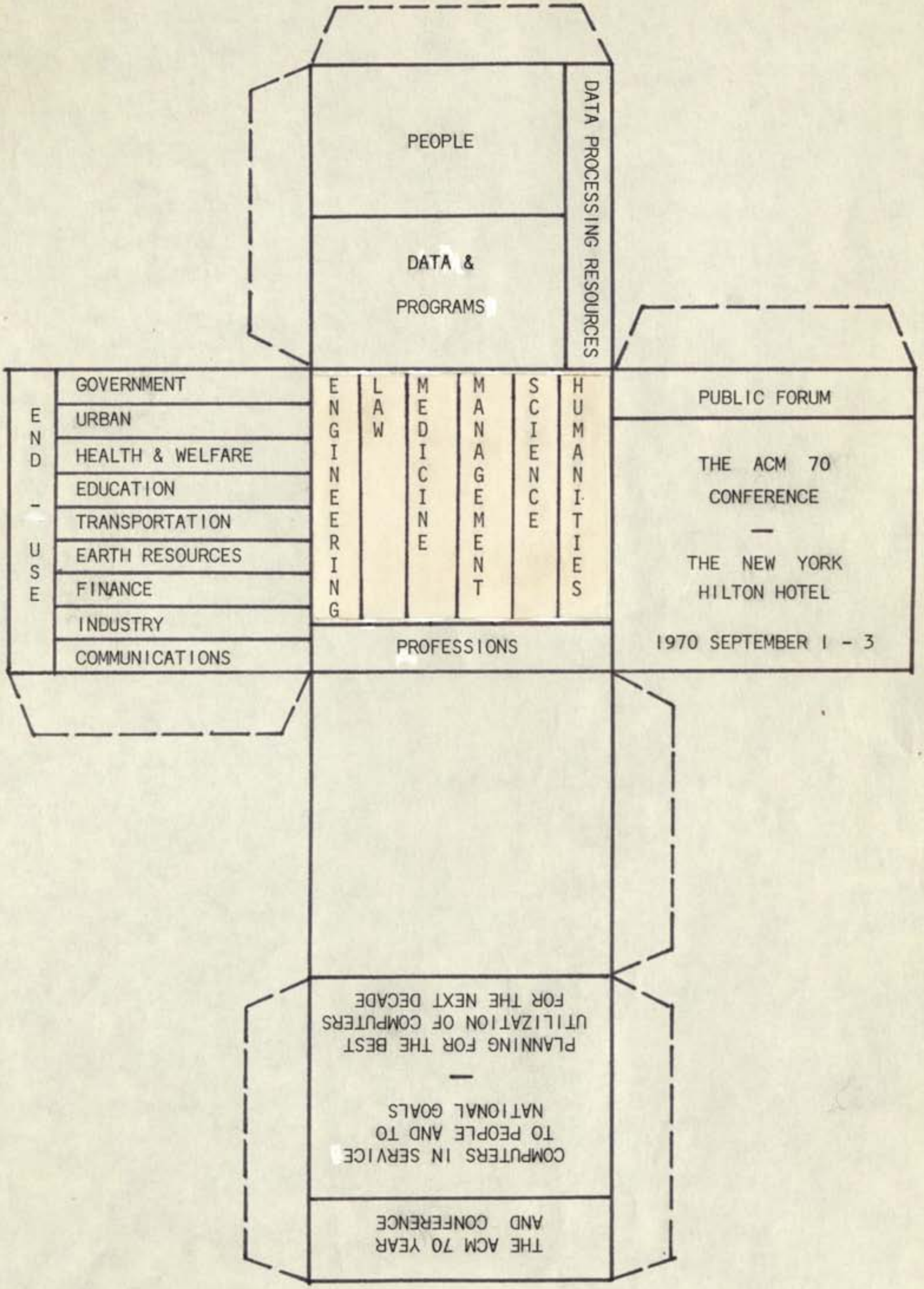

Held Meeting Of Computer Year Group

WASINGTON. — Proponents of a National Computer Year had their first organizational meeting here last week and appointed an ad hoc committee to draw up specific plans and programs.

Some 40 professional organizations attended the meeting, including the American Federation of Information Processing Societies. IEEE and Business Equipment Manufacturers Association were not represented.

Spokesmen for the Association for Computing Machinery, which first proposed the idea for the computer year, said several of those organizations have expressed their support both in public statements and privately, however. Afips participation was seen as particularly encouraging.

A seven-member ad hoc committee, includes John J. Alexander, Jr., New York Stock Exchange; Barry W. Boehm, American Institute of Aeronautics and Astronautics; Alec Bumsted, Association of Education Data Sy[illegible]; John Jacka, National Lea[illegible] of Cities; John H. McLeod, Jr., Simulation Councils, Inc., and Noel K. Zakin, American Institute of Certified Public Accountants. No chairman was designated. A seventh member is expected to be named soon.

The committee will meet next Monday in Atlantic City, prior to the spring Joint Computer Conference. ACM spokesmen said various funding organizations, which have been approached, such as the Ford Foundation, have expressed interest in the concept and are waiting for a specific plan to make decisions on whether to support it financially.

ACM hopes to have the National Computer Year takeoff program at the ACM '70 conference, which will be held at the New York Hilton Sept. 1-3.

IBM Corp.'s Sam Matsa, chairman of ACM '70, described the initial objectives of the year as a way to "maximize the use of computers in serving national goals, deepen public understanding of the role and potential of the computer, and enhance the decision-making ability of Government, education and private enterprise."

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70 APR 27

NCY EGG HATCHES: AD HOC CTEE TO WATCH OVER CHICK

At 10 am April 23rd, the COORDINATING COMMITTEE FOR NATIONAL COMPUTER YEAR chaired by SAM MATSA convened in the Board Room at the National Academy of Sciences in Washington, D.C. Over 40 professional societies from the fields of science, engineering, finance, medicine, law, government and education, all with a stake in the wonderful world of computers, had representatives at the meeting.

After introductions all around, Walter Carlson, ACM vice president, was called upon to state ACM's position in the National Computer Year concept. By way of background, Carlson outlined the goals and planning under way for the ACM 70 conference and detailed the origins of the NCY plan. As for ACM's specific involvement in NCY, Carlson made the following statement: "Within ACM, we recognize the timeliness and the inherent merit of the idea of a National Computer Year. As yet, however, ACM has neither officially endorsed nor funded any activity whatsoever that is directed toward the designation of some finite time period as the National Computer Year. This cannot be and will not be an ACM project....I know of no formal organizational endorsement of a National Computer Year. That endorsement, the timing, and the funding are what the Coordinating Committee will decide." The assembled group requested that it be given some idea of what kinds of goals could be accomplished by a national computer year. In response to this request, a Jan. 17 memo drafted by the ACM Program Chairman Bob Bemer was distributed, outlining possible goals and scope of activities.

The floor was then open for discussion, and discussion there was, at times, heated. The major problem in everyone's mind was "How does NCY relate to the sphere of interest I represent?" and "What will NCY accomplish in our area of interest to justify the expenditure of time, effort and money?" Carl Frey, Executive Director of the Engineers Joint Council best answered those questions in words to the effect that at this point in technical development, no one individual or group of individuals can afford to just tend to his own briar patch and that it's too costly by far to go on inventing the wheel over and over again. What's needed is a cross-pollination of ideas, a sharing of technical know-how across formal professional lines, and a National Computer Year would serve to advance these goals.

The point was then raised that the Computer Science and Engineering Board of the National Academy of Science already exists and represents national interests and shouldn't that be the body to sponsor a National Computer Year. The upshot was the following motion moved by A. H. Taub of the American Mathematical Society and seconded by John McLeod of Simulation Councils Inc.:

> It is moved that the chairman appoint an ad hoc committee of seven members to:
>
> 1) Formulate a program for the computer year by, in part, soliciting comment from represented organizations on the eight goals listed. The program is to be submitted to the Provisional Coordinating Committee for review and approval.
>
> 2) To propose to the Computer Science Engineering Board that they sponsor the NCY with the program endorsed. If this proposal is accepted, the Provisional Coordinating Committee would disband.
>
> 3) If the Computer Science Engineering Board does not accept the proposal, the ad hoc committee would come to the Coordinating Committee looking for authorization to form a body to carry out the National Computer Year."

The motion was accepted unanimously and the following members volunteered for the ad hoc committee:

- John J. Alexander, Jr., New York Stock Exchange
- Barry W. Boehm, American Institute of Aeronautical and Astronautical Engineers.
- Alec Bumsted, Association of Educational Data Systems
- John Jacka, National League of Cities
- John H. McLeod, Jr., Simulation Councils, Inc.
- Noel K. Zakin, American Institute of Certified Public Accountants

A seventh member is to be named.

Judy Liersch
Time, Inc. Room 909
Time-Life Building
1271 Avenue of the Americas
Rockefeller Center
New York, New York 10020

JL/fep

per cent over the next 12 months. Another 21 per cent will maintain spending at the past year's level. The report is due to be released June 1.

• • •

Turnover among data processing personnel is much higher than in any other occupation in 500 companies surveyed, The Diebold Research Program said last year. More thar
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at Carte Blanche headquarters here until the RCA computer is in full operatoin, scheduled for
y 1.

Mr. Swinden emphasized his firm "has the best of relations with Honeywell, but our expanding needs required a change." Carte Blanche currently processes about 30,000 customer charges a day, he said.

Carte Blanche's parent firm,

TOK O. — Fujitsu, Ltd., has introduced its Facom 230-15 icomputer, described as a competitor of the IBM S /3, but it won't be available for a year.

T. puter, said to do two jobs simultaneously, lease -$5500 a month, or sells for $55,500-$166,-600.

Exhibit 1-1

Fairchild Business Newspapers
Electronic News
NEW YORK, N. Y., MONDAY, APRIL 27, 1970
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Vol. 15 WHOLE No. 761

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Fujitsu also provides a 262-kilobyte magnetic drum auxiliary memory.

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ne Spectra/70/55 initially
be an all-tape-oriented, ac-
unts receivable-accounts pay-
ble system, he said.

An average of 50,000 customer bills will be prepared daily by two RCA high-speed printers included in the system. Carte Blanche is studying the possibility of using optical character reader units later in place of key punching for computer input, according to Lorne L. Fonteyne, executive vice-president of the firm.

Mr. Fonteyne said his company plans to employ RCA video data terminals tied in over phone lines to a Spectra/70/47 time-sharing computer at RCA's Western Regional Systems Center to assist in writing and debugging the new programs for Carte Blanche's Spectra/-70/55.

Watkins Profits Gain As Quarter Sales Fall

PALO ALTO, Calif.—Watkins-Johnson Co. had a 14.2 per cent gain in first quarter profits, but sales fell 4.8 per cent for the period ended April 3.

Net income advanced to $654,-177, or 22 cents a share, from $572,393, or 20 cents, but sales were off to $7,676,869 from $8,064,307.

Hold Meeting Of Computer Year Group

WASINGTON. — Proponents of a National Computer Year had their first organizational meeting here last week and appointed an ad hoc committee to draw up specific plans and programs.

Some 40 professional organizations attended the meeting, including the American Federation of Information Processing Societies. IEEE and Business Equipment Manufacturers Association were not represented.

Spokesmen for the Association for Computing Machinery, which first proposed the idea for the computer year, said several of those organizations have expressed their support both in public statements and privately, however. Afips participation was seen as particularly encouraging.

A seven-member ad hoc committee, includes John J. Alexander, Jr., New York Stock Exchange; Barry W. Boehm, American Institute of Aeronautics and Astronautics; Alec Bumsted, Association of Education Data Systems; John Jacka, National League of Cities; John H. McLeod, Jr., Simulation Councils, Inc., and Noel K. Zakin, American Institute of Certified Public Accountants. No chairman was designated. A seventh member is expected to be named soon.

The committee will meet next Monday in Atlantic City, prior to the spring Joint Computer Conference. ACM spokesmen said various funding organizations, which have been approached, such as the Ford Foundation, have expressed interest in the concept and are waiting for a specific plan to make decisions on whether to support it financially.

ACM hopes to have the National Computer Year takeoff program at the ACM '70 conference, which will be held at the New York Hilton Sept. 1-3.

IBM Corp.'s Sam Matsa, chairman of ACM '70, described the initial objectives of the year as a way to "maximize the use of computers in serving national goals, deepen public understanding of the role and potential of the computer, and enhance the decision-making ability of Government, education and private enterprise."

per cent of the copier market should be able to shrug off the new IBM machine, but not if it signals a whole new family of copiers. And smaller manufacturers—lacking the IBM sales punch—could have problems wi the new machine itself.

The immediate threat to Xerox is IBM's challenge of its patents. After Xerox filed suit, IBM commented that it had "made a careful review of the patents held by Xerox and determined that this product does not infringe any valid Xerox patent or use any Xerox confidential information."

The computer giant added that it would oppose the suit with all its resources.

Xerox says IBM was licensed to use its patents and trade secrets to manufacture computers and for xerographic plates and powders (developer constituents) for use in data processing apparatus.

But Xerox says it twice refused to license IBM to use the patents to make copying machines. The suit accuses IBM of misusing confidential information provided under the other licensing agreements to produce its copier.

Discussions.

According to the complai filed in Federal Court here, th

Unbundling I

Continued f

Honeywell will operate the firm's computer installation with a leased Model 3200, valued at about $3 million.

"The 3200 is not necessarily a better system than IBM's," Mr. Boynton said. "Economy was the most important factor involved in our decision. This move will save us money."

IBM declined to comment on the shift.

IBM's decision last year to unbundle (separate costs for hardware and services) is said to have pushed up prices for IBM customers. On the other hand, Honeywell elected to remain bundled in an effort to pick up more business, ostensibly at the expense of IBM.

IBM had been operating Security Insurances computer installation for several years.

Honeywell had bid on the installation just 2 or 3 years ago, but lost out to IBM, informed sources said. Unbundling by IBM apparently was all that was needed for Honeywell to land the contract.

It was reported reliably also that the insurance firm was unhappy with high IBM charges for hiring its systems engineers. Prior to unbundling, the IBM engineers were included in the over-all IBM contract.

Data Bank Detailed.

In Wellesley Hills, Mass., a spokesman for Honeywell's Electronic Data Processing division said that the 3200 system to be installed will include a data bank with 1.68 billion characters of information by using six disk pack drives—each storing 280 million characters.

The system also will include

Exhibit 1-2

APRIL 29, 70

33,000 Bit/In. Possible Through Codi

By Frank Piasta
CW Staffwriter

ROCHESTER, N.Y. – A proprietary coding technique developed by General Dynamics is said to make possible packing densities as high as 33,000 bit/in. on magnetic tape.

Based on a technique developed by General Dynamics' anti-submarine warfare products group for the U.S. Navy, the Unidar system initially will be used with an IBM 360 for data acquisition.

Initial tests in this scientific instrumentation application, according to GD, have demonstrated that the amount of ma tape required can be re 97%, as compared to co tional tape systems.

Packing Density

The techniques develope Unidar have succeeded in a ing a packing density of bit/sq. in. This places it be that of the latest tape devi 288K bit/sq in. and the exotic techniques, such as graphy at 100 million bit, now being explored.

However, if the price Unidar devices is not proh ly high, interest may ret tape-oriented product ment.

A prior attempt at us packing densities an standard tapes in the IB pertape achieved only success. Customers seem resist both the one-in. compatible storage medi well as the higher ($1,310/mo compare $1,020/mo for the IBM 24

This would seem to i that the course of fut search with Unidar might concentrated on the d ment of a competitively 1/2-in. tape compatible dr

The Unidar system of ing can be applied to a va data formats and vehic cluding 9-track 1/2-in. fa cording to a company man. The highest pack sity commonly used t 1,600 bit/in. This co with a tape speed of 200 gives a potential data 320K bit/sec.

Meeting of Supporters Launches National Computer Year Plans

WASHINGTON, D.C. – Plans for the National Computer Year are finally getting off the ground.

A meeting here of the provisional coordinating committee for the National Computer Year last week established a seven-member ad hoc committee to formulate definite goals and an administrative organization for the National Computer Year.

The ad hoc committee is gathering comments on the proposals from the groups represented at the initial meeting of the coordinating committee and from other organizations which want to participate in the project.

The 50-member group *seemed* in general agreement with the broad objectives and the need for a National Computer Year, but felt more time was needed to formulate a definite set of priorities for the year.

As a result, no program for the year was adopted.

The major discussion at the planning meeting concerned the possible role of the Computer Science and Engineering Board of the National Academy of Sciences (NAS) in administering the National Computer Year.

Some, not a majority, felt that the board should be held responsible for planning and administering the effort. However, most representatives felt that there was a need for a National Computer Year regardless of whether this board had the resources or staff to plan and administer it.

As a result, the ad hoc committee will submit its plan of action to the 50-member provisional coordinating committee for approval and then will formally ask the Computer Science and Engineering Board of NAS to undertake the project within those guidelines.

If the plan is accepted, the ad hoc committee will disband and the project will fall under the province of the quasi-governmental Science and Engineering Board.

If not, the ad hoc committee will then be responsible for proposing an administrative structure for the National Computer Year to the coordinating committee.

Levin Files $750 Million Antitrust Suit

(Continued from Page 1)

may not stand.

All references to the 1956 decree, and an earlier consent decree, were ordered stricken from the combined suit in November [CW, Nov. 26].

All four plaintiffs had sought to base a major portion of their suit on alleged consent decree violations.

Judge Phillip Neville ruled that, since they were not part of the class intended to benefit from the decree at the time it was signed, the four plaintiffs were prohibited by law from attempting to enforce it.

Debt to IBM Is Overdue

The Levin-Towsend Corp. is currently in deep financial troubles, partly because of an $11.2 million overdue debt to IBM. Levin contends that the required temporarily, or would become obsolete, and that requiring their purchase for the "when-new price" is unreasonable.

Levin claims that his company has been required to purchase features and memory units from IBM ammounting to $17.5 million. He claims that this put an undue burden on the capital resources of Levin-Townsend and artificially inflated its indebtedness to IBM.

The suit also alleges that IBM's former "bundled" pricing of hardware and software and services constituted "illegal restraints and tie-in practices," and he seeks retroactive reappraisal of all contracts.

He also seeks to prevent IBM from collecting any money from Levin-Townsend under the "bundled" pricing structure, terms and in the same manner as such features are rented to lessees of such equipment from IBM."

Both the Greyhound and Levin suits allege that the "intent" behind IBM's unbundling, IBM's 3% price reduction, and IBM's "unreasonably high" purchase prices for some equipment is to destroy competition in the lease marketplace.

Greyhound went so far as to say that unbundling destroyed its business.

Levin is apparently seeking the avoidance of such a situation.

He charges that IBM, "in the guise of a creditor concerned about the lateness of payments," suggested reorganization under Chapter Ten of bankruptcy laws, and that this suggestion was made to "disparage the company's solvency and to destroy

City Lose Attaches

(Continued from Pa

transactions.

The money was there. "they just didn't know prove it in the audit."

GE-115

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the winningest driver in A.C's brief history.

Most of these trainers will be grooming their top two year olds for the early closing events for which there were 340 nominations.

Last year, Truluck, the two year old pacer of the year and Victory Star, the Juvenile trotting champ of 1969 launched their careers during the two year old series.

In addition, Columbia George who engaged in classic battles with Truluck later in the season and became the season champion over a half mile track with w world record mark of 158.4 made his racing debut here as did Wire to Wire which set a world record for two year old trotting geldings over a 5/8 mile oval with a recording of 206.4 at the A.C. strip, and Nevele Rascal (2:05.3) season trotting champion on a half miler.

With Dexter Hanover, the highest price yearling of all time at $125,000 and six others who went for $45,000 or more among the nominees for the early closing events this year, the chances are that other future champions will be unveiled when A.C. opens its gates for its thrid season on May 11th.

Disabled Vets Installation Saturday May 2

The members of Chapter 10, Disabled American Veterans met recently in the All Wars Memorial Building with Commander Clarence Beisel conducting the meeting.

Plans for the Installation of Officers for 1970-71, on Saturday 2nd of May

Robert Bemer Program Head For Conference

In Atlantic City this week is Robert W. Bemer, of the General Electric Company's Information Systems Group, Phoenix, Arizona. Bemer is Program Chairman for the 1970 Conference of the Association for Computing Machinery, one of the sponsors of this week's Spring Joint Computer Conference. His Program Committee is meeting here as one of the many associated activities.

In contrast to the computer meetings of the last 25 years, the ACM Conference is not designed for computer people talking to other computer people. It is aimed at the users of computers--who are asked to make their needs and expectations known to the computer builders and programmers. The meeting will be aimed at planning for the best usage of computers in the next decade. Particular emphasis will be given to the computer as man's servant.

The Conference will be held on September 1-3 at the New York Hilton Hotel. Sessions are allocated to end-users of computers such as government, urban, education, health and welfare, communications,transportation, earth resources, etc. Other sessions are allocated to professions that use computers, such as law, medicine, engineering, science, etc. In every case the topic is the information processing requirements of that group, and how computers can provide the best assistance.

Bemer hopes that this conference will be the start of a continuing effort to bring the power of the computer to man's assistance in meeting his social and environmental problems. In support of his concept are many people influential in national affairs, including Dr. Lee DuBridge, Scientific Advisor to the President, and Mrs. Virginia Knauer, the President's Special Assistant for Consumer Affairs.

While here, Bemer will visit with local friends, the George Herlichs.

THE DISCARD

The fellow who is satisfied to take things as they come had better not expect very much.

'Henry VIII' Film At The Charles Theatre

One of the greatest epic dramas, and most honored film in recent years, Hal Wallis' production for Universal, "Anne of the Thousand Days". Now at the Charles Theatre, brings to the screen the colorful pageantry and romantic drama of Henry VIII's reign in England. The Technicolor and Panavision production stars Richard Burton, Genevieve Bujold, and co-stars Irene Papas, Anthony Quayle and John Colicos. Among many plaudits given the production, it has been nominated for 10 Academy Awards, more than any other picture in 1969.

In the historical drama based on Maxwell Anderson's Broadway play, Burton portrays Henry VIII, who defies the Pope, challenges the Emperor of Spain and destroys a ruling caste in England for the love of Anne Boleyn. Once again Burton demonstrates the great versatility that has marked his memorable performances in such pictures as "My Cousin Rachel," "The Robe," "The Spy Who Came in From the Cold," "Who's Afraid of Virginia Woolf?" and "Becket," which also was thei first of the cycle of serious historical films made by producer Wallis. He has been nominated as Best Actor for his work in "Anne of the Thousand Days."

Wallis brings another exciting discovery to the screen in "Anne of the Thousand Days." Miss Bujold. A renowned discoverer and developer of talent, Wallis includes among his more famous finds Elvis Presley, Burt Lancaster, Dean Martin and Jerry Lewis, Kirk Douglas, Charlton Heston, Anna Magnani, Errol Flynn and Humphrey Bogart. One of the most influential

Anthony Quayle portrays Cardinal Wolsey, whose failure to obtain from the Pope an annulment of Henry's marriage of Katherine caused his downfall, and Cromwell, the audacious opportunist who engineered the break with Rome, is played by John Colicos. Quayle was nominated as Best Supporting Actor by the Academy for his portrayal.

Several years in preparation, "Anne of the Thousand Days," was shot entirely on location in England. To achieve authenticity Wallis and Director Charles Jarrott used actual historical locations, which included famous Hever Castle in Kent, once the home of the Boleyn Family, and Penshurst Place. Jarrott, making his first feature assignment on "Anne," gained national prominence as a British television director. His credits include the TV classics "Dr. Jekyll and Mr. Hyde," "The Young Elizabeth" and "The Male of the Species." Georges Delerue's musical score perfectly supports every visual mood.

"Anne of the Thousand Days" has been rated "GP-All ages admitted. Parental Guidance Suggested."

SHERIFF'S SALE

By virtue of a writ of execution, directed to the Sheriff of Atlantic County, issued out of the Superior Court of New Jersey, Chancery Division, Atlantic County (Docket No. F-[illegible]), will be sold at public vendue, on

THURSDAY, THE SEVENTH DAY OF MAY, NINETEEN HUNDRED AND SEVENTY,

at two o'clock (Daylight Saving Time) in the afternoon of said day, in Room [illegible], on the Seventh Floor, Guarantee Trust Building in the City of Atlantic City, County of Atlantic and State of New Jersey.

All the following tract or parcel of land and the premises hereinafter particularly described, situate, lying and being in the City of Atlantic City, in the County of Atlantic and State of New Jersey:

Beginning at a point in the Westerly line of Virginia Avenue, [illegible] feet Northwardly

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Malvern Club To Hold Annual 'Ladies Night'

The Malvern Club of Atlantic City which was organized on October 10, 1926 will hold their annual Ladies' Night dinner at Zaberers in McKee City, New Jersey.

Charles Zaberer, who is the general chairman of the affair has made the suggestion that in order to avoid the crowds on Mother's Day, May 10, we have our annual dinner on Wednesday evening, May 6. Charlie has a most satisfying surprise in store for all who attend. This surprise, of course, will involve the menu. Charles Gordon is the ticket chairman; Francis D. Kelly, Captain of the group, will extend cordial greetings to the old friends and mew

The Rev. J. Francis Flaherty of Holy Spirit Church will give the Invocation; Charles Pullman will give the Pledge of Allegiance to the Flag; the guest speaker of the evening will be Mr. Joseph A. Bonner, Chief Security Officer of Temple University.

Rev. John Casey of St. Monica's will give the Benediction; Toastmaster for the evening will be Frank Layton, Secretary of the Crescentville group.

All Men of Malvern are expected to attend along with their wives and mothers.

POLICE
348-3011
FIRE
345-4111

1970 July 17

ACTIVITIES - R. W. Bemer

1. In April of 1969 I was offered the post of Program Chairman for the 1970 Conference of the Association for Computing Machinery. Previous conferences had been weak, compared to the two Joint Computer Conferences. This was coincidental in time with planning for a new computer line. From my experience at IBM and UNIVAC I had concluded that GE required more design input from business planning than was available. In fact, the entire industry could benefit from a nationwide effort in business planning.

   This led to my conception of a national effort somewhat akin in magnitude and generality of scope to the International Geophysical Year, with the ACM Conference serving as one main focal point. A letter of invitation for participation waswritten to 160 major national organizations.

   Getting substantial positive response, the effort was planned, based upon a division into seventeen sectors that encompass end-users, professions, and data processing resources. When substantial work had been completed, a letter was written to the President's Science Advisor, Dr. DuBridge, asking for assistance and a Presidential Proclamation. The latter is delayed, but his office and the Office of Science and Technology approved of the effort and offered support. Col. Aines, Chairman of COSATI, was named liaison.

   The ACM Conference on September 1 - 3 was planned on a fixed time scale to demonstrate the model of activities for a National Computer Year. Meanwhile representatives of about fifty organizations met at the National Academy of Sciences at the end of April of 1970. A planning committee for National Computer Year was set up, chaired by John Alexander, V.P. New York Stock Exchange. Firm support has been obtained so far from Dr. DuBridge, the National Goals Research Staff (under Dr. Moynihan), Dr. Tribus (Assistant Secretary of Commerce), Mrs. Virginia Knauer, Congressman Brooks and Daddario, and others. One of the most enthusiastic organizational supporters is the American Medical Association.

   The organizational requirements for this effort necessitated at least fulltime work. Eric Clamons was hired from Univac to take on many of the standardization activities I had been engaged in.

   A copy of the preliminary program booklet for ACM 70 is attached, to give an idea of the goals. All papers are invitational, and the end-users are invited to tell the computing industry what their information processing needs will be in this decade. Expansion to international scope has been prepared for, and the top technical man in the U.N. Office of Science and Technology will report on a global study closely related to the theme of this work.

2. I have provided internal consulting and independent analysis to Information System Group management, serving as a main focal point for an infrastructure of technical competence in various parts of the total computer business. Personal contacts in the Government and the computing professional world have enabled bidirectional influencing of opinions and actions to company and industry benefit. Careful study of the trade news media has enabled me to forecast trends and alert management to specific actions. My output of speeches and papers remains relatively high, and it is hoped that this helps my employer's public image.

9/3/70

PROGRESS REPORT ON THE NATIONAL COMPUTER YEAR

Introduction

The concept of a National Computer Year, patterned after the International Geophysical Year of the 1950's, was a project conceived during the early planning phases of ACM '70. Sam Matsa and Bob Bemer OF ACM were the individuals primarily responsible for fostering and developing the concept.

Under the aegis of ACM, a convening conference was called on April 23 1970 in Washington, D.C. and forty organizations sent representatives. At that time, the forty attendees spent a full morning in a sometimes heated discussion as to the need for, the goals of, the structure of and the organization for a National Computer Year. It was apparent at that time that forty was too large a number to resolve the questions which were raised in that meeting. At the conclusion of the meeting, an Ad Hoc Committee was formed consisting of the following:

John J. Alexander, Jr.
Barry W. Boehm
Alec Bumsted
Carl Frey
John Jacka
Herbert R. Koller
John H. McLeod, Jr.
Noel K. Zakin.

The purpose of the Ad Hoc Committee was to:

1. Define the goals for a National Computer Year.

2. Develop specific projects which would be carried out during National Computer Year, and

3. Recommend an organizational structure which would sponsor

9/3/70

MEMBERS OF THE AD HOC COMMITTEE

	SOCIETY
John J. Alexander, Jr. New York Stock Exchange 11 Wall Street New York, New York 10005	NYSE
Barry W. Boehm The Rand Corporation 1700 Main Street Santa Monica, California	American Institute of Aera/Astro.
Alec Bumsted c/o SDC 5720 Columbia Pike Falls Church, Virginia 22041	Association of Educational Data Systems
Carl Frey Executive Director Engineers Joint Council 345 E. 47th Street New York, New York	Engineers Joint Council
John Jacka 1612 K Street, N.W. Washington, D. C.	National League of Cities
Herbert R. Koller, Executive Director American Society for Information Science 1140 Connecticut Ave., N.W. Suite 804 Washington, D. C. 20036	ASIS
Mr. John H. McLeod, Jr. Simulation Councils, Inc. P. O. Box 2228 La Jolla, California 92037	Simulation Councils, Inc.
Noel K. Zakin AICPA 666 Fifth Avenue New York, New York 10019	American Institute of Certified Public Accountants

the National Computer Year.

The Ad Hoc Committee was given a two month Charter which was optimistically believed to be a reasonable time period for resolving the goals, identifying the projects and structuring the organization.

Progress

Progress to date has been mixed. The Ad Hoc Committee has been organized into three Sub-Committees corresponding to the goals, projects and organization sponsorship questions which were posed to the group.

Progress on goals and organization has been more substantial than that on projects. Unfortunately the work on projects has been delayed by the time required to clarify the goals for the National Computer Year.

Many goals have been posed for the National Computer Year. The Sub-Committee on goals met to review and sift through those and of the many, seven broad areas were selected to be analyzed. These goals lay in the area of:

1. Educating the lay public regarding the values and limitations of computers.

2. Improving academic curricula for the teaching of computers and data processing.

3. To promote "lifelong learning" for computer professionals.

4. To upgrade the profession by establishing standards for hardware, software and personnel performance.

5. To compile industry statistics on manpower, salaries,

usage and cost effectiveness.

6. To develop and foster effective communication between the industry, government and the public.

7. To promote new uses for computers in underdeveloped countries, in disciplines and interdisciplinary areas, by the lay public and for modeling and simulation.

Each of these goals on its face has great merit, and the Sub-Committee was loathed to select on its own that goal or goals which should be given preeminence. To resolve the dilemma, the Delphi method PROPOSED BY JOHN McLEOD was chosen. As you may know, Delphi is an iteritive questionnaire technique which is used primarily in scientific fields to resolve differing opinions on the futures of technology. It has been effective on several occasions in converging opinion to a more common agreement.

In developing the Delphi questionnaire, the original section on goals was expanded to include questions on projects which should be covered, sponsorship of the Computer Year and financing for the Computer Year.

DROP ONE ¶

Over half of the sponsoring organizations have participated in the first round of the Delphi and preliminary results are now available.

The participants in the Delphi were asked to respond to some fifty questions and to indicate on each of the questions their degree of feeling about the desirability, feasibility and importance of each question. Further, the respondent was asked to indicate whether he believed himself to be well qualified on a given topic or to indicate no judgement.

Results of the Delphi

The first pair of questions under the Delphi dealt with the question of should a National or an International Computer Year be organized. The respondees indicated that a National Computer Year was preferred to an International Year but that the general concept that was very important, very desirable, but, some uncertainty was indicated as to the feasibility.

In responding to the goals for the National Computer Year, it was surprising, at least to me, that the most important goal indicated by the respondees was that of upgrading the profession by establishing standards for hardware, software and personnel performance.

It was not so surprising that the pair of goals which came in virtually tied for second in importance were:

1. Promoting new uses for computers in discipline and interdisciplinary areas where their potential is not fully utilized, and

2. To develop and foster effective communication between the computer industry, the government and the public.

Projects

Two projects were given primary importance by the respondees. One was the organization of a "kick-off" conference to publicize current state of the art and National Computer

Year objectives. From everything I can see, ACM '70 HAS provided an ideal vehicle for accomplishing that project. ~~In addition to the projects which were selected,~~ The other which received major importance was the development of a National Software Testing Center. The Ad Hoc Committee has not yet had a chance to pursue the development of this project but it will certainly be high on our priority list.

Sponsorship and Financing

The Delphi respondees strongly favored financing of the National Computer Year by the computer industry in favor of either government or other organizational financing. However, the respondees indicated some difference of opinion as to the sponsorship of the organization - finding themselves split between government, industry and various organizational groups which were proposed. Finally in looking at the feasibility of a National Computer Year, the respondees indicated some skepticism as to the likelihood of it ever getting off the launching pad.

In summary, the Delphi approach seems to have proved itself as a good vehicle for clarifying questions which the Ad Hoc Committee had on the importance of goals, projects and sponsorship for the National Computer Year. The first round of Delphi is now complete. Two more rounds are planned to probe more deeply into the areas which are indicated as important, desirable and feasible and will probably require until about Thanksgiving.

Sponsorship and Schedule for the National Computer Year

The Sub-Committee on Sponsorship and Schedule (HEADED BY BARRY BOEHM) for the National Computer Year met with Dr. Joseph Kaplan, Chairman of the International Geophysical Year, to discuss with him how that project was organized and based upon that conversation and input from other interested individuals has drafted a planning schedule for the National Computer Year. Amazingly the schedule requires three years and let me expand on the reasons why. We believe it will take the balance of this year to rough-out the specifications for the year and to present those to a Coordinating Committee and potential sponsoring groups. Based upon meeting schedules for those sponsoring groups, the first half of 1971 ~~will~~ MAY be required to reach a go -- no go decision point and to establish a formal and funded National Computer Year Steering Committee. The balance of 1971 should see a Chairman selected, working groups established, AND detailed plans prepared ~~and~~ FOR a major review by the sponsoring organization. In 1972, funding details should be arranged which might well lead to modifying certain detailed plans already proposed and preliminary symposia could be held on key topics such as the development of a National Software Testing facility.

If the Computer Year has the scope which the Ad Hoc Committee believes desirable, the year 1973 should be used to run small-scale pilot prototypes of program elements and thus refine the operations to a desired level of efficiency. ~~and~~ Thus, ~~that~~ ~~leads~~ ~~to~~ 1974 APPEARS TO BE as the target year for the National Computer Year.

LETTERS TO EDITOR

To the Editor:

In the 1970 October editorial, entitled "The New Science Advisor," wonderment was expressed about the extent of Dr. Edward E. David's competence in computers. This letter is intended to enlighten both your staff and your readers on this point.

In October 1968 the NATO Science Committee held the first conference on software engineering, at Garmisch, Germany. Attendance was limited to some 60 of the best known and most expert computer people in the world. I am sending a copy of the reports of this and the subsequent meeting to MODERN DATE for reference, for in my opinion they are classic documents, in content and style.

One of the major contributions to the first conference was Dr. David's "Some Thoughts about Production of Large Computer Systems." I have quoted from it more than once in my own papers. The quotation index is also illuminating. Using the count of quotations as a rough measure of influence, we find Prof. Alan Perlis was quoted most (26), Dr. David next (25), A. G. Fraser (20), Ken Kolence (17), the late Ascher Opler of IBM (15), and so forth. Certainly reading these quotations and talking with the conference attendees would be convincing proof of Dr. David's deep understanding of computers and, in particular, software.

On another point in the same paragraph, I insist that Bell Telephone Laboratories **are** a leading influence in the computer industry. Show me another computer manufacturer (they are, you know) that produces hardware and software which together do not have more than two hours downtime in 40 years!

One of Dr. David's responsibilities at Bell Labs was the Picturephone, and isn't that a computer terminal? I should mention also that he was the original Chairman of the Communications Sector for the ACM '70 Conference, at my request, and resigned only because of an overload of commitments, one of which may have been to prepare for this new assignment.

I think our industry should be grateful that Dr. David has been assigned to this most influential position, not because he has been in part a "computer expert," but because computer exposure has sharpened his insight for systems trade-offs. That's what you need when you are short on resources and time, as this Earth is.

R. W. Bemer
Honeywell

The Editor's Reply: *Mr. Bemer has made a valuable contribution to all of us by documenting Dr. David's credentials, which were, however, never in doubt. Also, I share the sentiments which Mr. Bemer expresses in the concluding paragraph of his letter.*

Books: Studies of Computers

THE INTELLIGENT MAN'S EASY GUIDE TO COMPUTERS. A. N. Feldzamen. David McKay Company, Inc. 263 pp. $7.95.

COMPUTERS AND CRISIS. R. W. Bemer, editor. Association for Computing Machinery. 401 pp. $7.50.

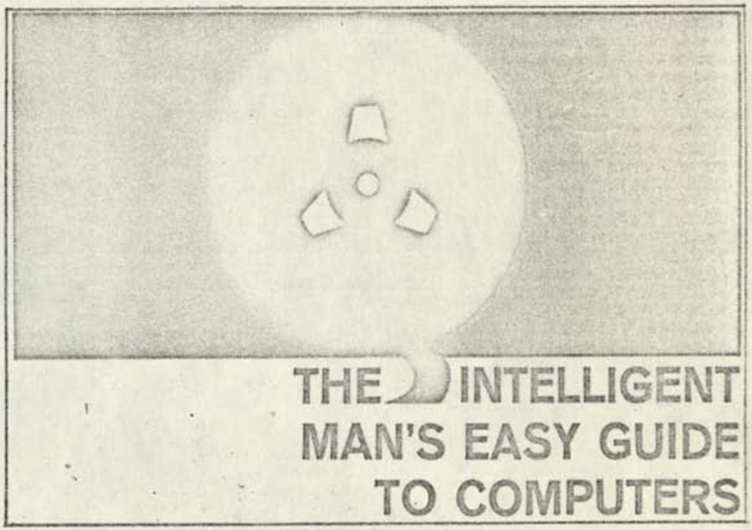
The electronic computer unfortunately has come to be considered by much of the general public as an Aladdin's Lamp—half magic, half science. The computer can perform near-magic feats, but the mumbo jumbo associated with it is technical and scientific. As a result, many people who should know better have chosen to remain ignorant about one of man's greatest tools.

These two books should help clear away a lot of the myths and mist around the computer. Mr. Feldzamen's book is just what its title says—an intelligent man's quick, easy and enjoyable course in computers.

He puts it on the line right away, accusing many people who shy away from learning about computers of being intellectual cowards. He describes such a person in this way:

"He may slink away with a brave false face outside, but is fearful and timid within when computer talk begins. Like the bashful boy who has yet to learn about the birds and bees, he is reluctant to face up to the computer facts of life."

Having thus identified the syndrome, he sets out to cure the illness in a bright, painless fashion, taking the reader through computer concepts, uses, accomplishments, failures and anchoring the computer's potential in fact, not fancy. Through all this denouement, Mr. Feldzamen keeps it interesting and informative.



"Computers and Crisis" contains the condensed proceedings of the 1970 conference of the Society for Computing Machinery, the oldest association of computer professionals, and a pretty intellectual group.

Before this frightens anyone off, it should be noted that it is also one of the most eclectic professional societies in the world and the proceedings, which are devoted to studying the role of the computer in solving the various serious problems facing society, make lively reading.

There were no papers delivered at the conference but rather each topic was discussed in seminar fashion, giving a spontaneity to the book that might otherwise be lacking.

Take for instance a session on computing and the disadvantaged. The leadoff speaker commented:

"It may well be that Moses was indeed the first recorded handicapped person, for surely Exodus 4:10-16 indicates that he had a speech impediment."

To this a Unitarian minister on the panel replied:

"Let me take the prerogative of a theologian. . . . The first disadvantaged person was not Moses. It was Adam. He had an orthopedic problem, sustained in the process of liberating the first woman.

From this starting point the top experts in the field take off in exploration of how computers and the disadvantaged can be made to help each other.

Similar treatment is given to education, the communications industry, government, transportation, law, humanities, medicine, science and other disciplines and difficulties in the world.

The industry section covers such varied businesses as apparel, automotive, food distribution, petroleum, plant automation, power, printing, publishing and retailing. The securities, insurance and banking industries are covered in the finance section.

The social problems facing society are usually discussed by people who are into it with their hearts as well as their heads.

Some cant creeps in, and computer jargon is common but generally fathomable. Nonetheless, it is a valuable book for the doctor, lawyer, plumber and Indian chief who are interested in what directions man's greatest tool may be taking him.

WILLIAM D. SMITH

[illegible] Adams [illegible] ✓ [illegible]

Editorial: The Renaissance midwives are among us . . .

'What Mill realized . . . and what Wiener later emphasized, is that the sum total of human potentialities in any community is infinitely richer than the limited number that can be installed in a closed system—and all automatic systems are closed and limited—even those computers that are capable of learning through further use of the material already provided.'

Lewis Mumford 'The Pentagon of Power'

One of the participants in the 1970 conference of the Association for Computing Machinery, talking of the myth of the interdisciplinary team, stated that every successful development of a major system he had seen contained 'one of these Renaissance men, who knew enough about the various elements of the problem, pulled them together, and made it go.' The essential functions of such 'interface' men, he said, regardless of title, were 'problem diagnosis, a broad conceptualization of solution, the education of both sides, and assuming managerial responsibility for constructing a sensible solution'. That such Renaissance men are alive and well and working in the computer camp is more and more in evidence.

At least three pieces of evidence have arrived in this office during the past month. Two of them are printed in this issue. 'The Outer View' on page 71 gives the US background: the article on page 84 attempts to solve the difficulties inherent in constructing a soundly-based data-processing terminology which will root the present jargon firmly in the linguistic past.

But perhaps the most impressive is 'Computers and Crisis', a massively edited transcript of the ACM 70 conference from which the earlier quote is taken. The editor has spent two years planning the conference programme and editing what would have been 2,000 pages of proceedings down to a small 400-page book [1]. This volume is not readable in the sense that a novel or a single-subject treatise is readable but, more important, it is usable—and comprehensible, even to the layman. Even though the conference was held nearly eighteen months ago, the contents of this book bear no resemblance to those massive volumes which are often out-of-date when published and stand impressively on the shelf gathering dust.

Instead we have a source-book, a Renaissance computerman's bedside book which, opened at random, excites with its possibilities even the most disenchanted to a realisation of the potential for good we have created. No social tract or polemic this—half the book may deal with computers and education, health, urban problems, ecology and other interfaces with the public, but the usual areas of industry, finance and computer science and technology are not neglected.

One of the sessions at the conference was entitled 'Computation, Communication and Content—A Pregnant Union'. Ours has been a long gestation, but at last the midwives are among us.

Lewis Mumford has for forty years been predicting the catastrophe that the 'megamachine' will bring upon us. In his latest book [2] he epitomises this 'megamachine' by the computer. Perhaps we are now sufficiently aware to avert the catastrophe. DGW

The Computer Bulletin
Feb 72.

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1 R. W. Bemer (Editor). *Computers and Crisis.* ACM $15.00 ($7.50 paperback)

2 Lewis Mumford. *The Pentagon of Power.* Secker and Warburg £4·50

Robert W. Bemer, manager, systems and software integration, General Electric Co., Phoenix, Ariz.

In sunny Arizona, out near a typical swimming pool, there is an atypical computer terminal. In case Bob Bemer gets a sudden idea while swimming around, he can enter it in his handy teletypewriter. Bob has been getting ideas now for about twenty years in the computer field. He began as a programmer at Rand Corp. and has since managed programming groups on several levels for IBM, Univac and Lockheed. He was present at the birth of Cobol in 1959 as a member of Codasyl and belongs also to the U.S.A. Standards Institute, the International Federation of Information Processing and the British Computer Society to name a few. He specializes in computer system architecture and standardization and expanded character sets. Bob is the 1970 Conference Program Chairman for the Association for Computing Machinery and has contributed many articles to *Communications of the ACM* and other international publications. Bob has a degree in mathematics from Albion College and a certificate in aeronautical engineering from the Curtiss-Wright Technical Institute.

12th Annual

SOUTHWEST SYSTEMS CONFERENCE

PHOENIX, ARIZONA

MAY 21, 1971

■

DEL E. WEBB'S TOWNEHOUSE
100 West Clarendon
Phoenix, Arizona

10:15 A.M. "A" SESSIONS

A-1 "HIGHER EDUCATION FOR DATA PROCESSING AND COMPUTING"

Dr. R. Van Norton - Director
University of Arizona Computer Center

The encouragement of instruction following the broader view of data processing principals seems now to be discouragingly lagging the rapidly increasing enrollment in elementary data processing courses.

Dr. Van Norton will discuss many aspects of instruction in data processing. In his presentation, an effort will be made to identify certain varieties of ineffective data processing instruction, but also, to list some more palatable educational motives and some chapter headings of more acceptable syllabi. These observations may apply to appreciation or orientation courses and technical courses in undergraduate institutions and professional advancement or continuing education course work.

Dr. Van Norton received his Ph.D., from New York University in 1960. He has a broad range of experience, including associations with the University of Wisconsin, New York University, Nuclear Development Associates and many others. Since 1967 he has been Professor of Systems Engineering and Director of the University of Arizona Computer Center. He is a member of many professional societies and has authored many publications on atomic energy, industrial and applied mathematics.

A-2 "DATA COMMUNICATIONS - LINKING COMPUTERS & REMOTE TERMINALS"

Herbert C. Granger - Director of Communications, American Express, Credit Authorization Service, New York City.

Mr. Granger will classify the data communications users and will discuss typical current applications. His presentation will include discussions on channels and service, including voice grade data lines, dedicated lines, etc.; terminal devices such as teletypewriters, high speed printers, touch tone phones, audio response units, Video displays, facsimilies; Modems, including low and high speed, Reverse channel Simplex, half and full duplex; Communication system controllers, adapters and front end processors. He will also discuss interface and compatability problems, operational problems, isolation of trouble and restoration of service. Attention will also be devoted to future service offerings, including digital networks, competitive common carriers, Satellites and other media.

Herbert C. Granger was educated at the University of Pittsburgh in Business Administration and at the Rochester Business Institute. He is a Class II graduate of the Bell System Cooperstown Data Communications Training Course. H started his business career in 1951 with the Bell System. While on assignment at AT&T, he was an account manager responsible for large industrial accounts which included the recommendation and installation of three nationwide data teletypewriter systems. He was also the Corporate Communications Manager for PPG Industries (formerly Pittsburgh Plate Glass Company), and was responsible for the

B-4 "AN INTEGRATED MATERIALS MANAGEMENT SYSTEM"

Joseph J. Campanella - Director of Information Systems,
Sperry Rand Flight Systems Division, Phoenix Arizona

The presentation "An Integrated Materials Management System" describes the workings and advantages of an actual, advanced materials management system presently in use at the Sperry Flight Systems Division of the Sperry Rand Corporation, Phoenix, Arizona. The system uses an 1108 UNIVAC computer. The presentation covers the system philosophy used at Sperry Flight Systems, the objectives and scope of the material system, a review of the major master files and reports and how they are used. Use of the exception principle in the system and performance measurement reports are also discussed as well as some unique by-product sub-systems.

Joseph J. Campanella is Director of Information Systems for Sperry Rand Flight Systems Division, Phoenix, Arizona. Mr. Campanella received a B.S. degree in electrical engineering from Carnegie Institute of Technology. He has been with Sperry Corporation in a variety of positions, including Planning and Material Manager and Manager of Purchasing. He was instrumental in the design and implementation of the computerized material system described in his article "An Integrated Computer Materials Management System".

B-5 "USER INVOLVEMENT IN SYSTEMS DEVELOPMENT"

Dr. William D. Connor - Director of Management Systems
Motorola Government Electronics Division, Phoenix, Ariz.

Dr. Connor will discuss the importance of economic involvement in systems design and installation and approaches which have been utilized to achieve this involvement.

Dr. Connor is well known for his work in Industrial Engineering and Systems development and has been a frequent speaker at seminars and conferences. He previously held positions as Manager, Industrial Engineering; Manager, Business Systems and Programming; and Assistant Controller at Hughes Aircraft Company. He received his D.B.A. in Business Economics at the University of Southern California.

3:15 P.M. "C" SESSIONS

C-1 "FEDERAL DATA PROCESSING STANDARDS - HOPES AND REALIZATIONS"

R. W. Bemer, Honeywell Information Systems, Inc.,
Phoenix, Arizona

Public Law 89-306, sponsosred by Congressman Jack Brooks (Texas), was passed in late 1965. It set up a 3-way enabling mechanism for procurement and more effective utilization of computing equipment by the world's largest user, the U.S. Government. Involved are the General Services Administration, the (then) Bureau of the Budget, and the National Bureau of Standards.

At that time there were few recognized data processing standards, and little adherence to these. This paper notes the present status of these standards, some problems that still remain, and shows a method for reversal of what seems to be a negative rate of progress.

Mr. Bemer's computing career began at the RAND Corporation in early 1959. He was a developer of several early programming systems, and has been involved in standardization of languages, character sets (the ESCape and other aspects of the ISO Code are due to him), and vocabulary (IFIP/ICC). His 50 plus papers include histories of language development (i.e., ALGOL) and a 1957 March paper believed to be the first public description of timesharing. He addressed the BCS at the 1959 Annual General Meeting and is now a Fellow. He has advocated strongly the automation of software production, beginning with a labor distribution and costing system at UNIVAC in 1964. He pioneered software performance instrumentation on the GE 600 in 1966. Working mainly for major manufacturers (IBM, UNIVAC, Bull, General Electric), he is now a staff consultant at Honeywell Information Systems, Inc.

C-2 "CAREER PATHS AND TRAINING PROGRAMS FOR DP PERSONNEL"

George J. Ravazzolo - President, Advanced Systems, Inc.,
Mount Prospect, Illinois

Mr. Ravazzolo will primarily concentrate on the need for establishing career paths and the training programs required for data processing personnel.

In addition, he will review:

1. The status of unbundling of education to date, and
2. the use of training in order to avoid systems engineering costs.

George J. Ravazzolo is President of Advanced Systems Incorporated, Mount Prospect, Illinois. Advanced Systems is the largest producer of videotaped data processing training courses. He launched the firm in 1968 after serving IBM Corporation for 12 years in a variety of training, administrative and management capacities. He was manager of sales training at IBM's Sales Training Center in Poughkeepsie; manager of plans and measurements for education, Data Processing Division Headquarters, White Plains; and manager of supplemental education programs, Data Processing Division Headquarters, with responsibility for all of IBM's education programs for customers offered on a fee basis. He was a permanent guest lecturer on Financial Management at the IBM Management Development Center.

C-3 "PROCEDURES' FORMS AND RECORDS"

Dr. Gibbs Myers - Manager of Systems and Procedures,
Kearfott Division of Singer-General Precision, Inc.,
Wayne, New Jersey

Dr. Myers will provide some uncommon thoughts on the commonplaces of systems work.

Procedures: Why needed; picking the best format; how to prepare; the approval cycle; how to publish, distribute and

COMMENT FROM ACM MEMBERS REPLYING TO REQUEST FOR NOMINATIONS

(* indicates definite negative comment)

* Frederick P. Brooks, Jr. - "I admire your bravery and capacity for work. I don't, however, feel that an "Integrated functional specification for computer development and utilization for the next decade" is likely to be really useful, much less worth the tremendous effort proposed. Great ideas and even advances come from individuals, not committees, conferences, workshops. I believe the ferment and chaos is a cause, not an impediment, to the health of the profession. Hence my recommendation is against..."

David R. Brown - I have just read your memorandum ... and the conference description attached to it. I think it's great."

* Ned Chapin - "You have the cart before the horse, Bob. The reason the IGY could be successful was it provided a clear common point of focus, to which each specialty could apply its kit of tools. It was like the blind men who examined an elephant. But a NCY inherently lacks focus. It would be like a 'Motor Vehicle Year'. Diversity is a prime characteristic. It is like a TV hero who jumped on his horse and rode off rapidly in all directions.

Let us not have another fiasco like the ACM Washington affair which announced a grand theme and then royally ignored it in practice. Or is it your objective to follow in that tradition?"

A.A.Cohen - "My congratulations on your appointment ... In your capable hands, I know the conference is destined to be a success."

B.O.Evans - "I think your approach is good, and hope you get enough responses to accomplish its purpose."

Roy N. Freed - "...concerning your exciting plans for the National Computer Year. I would like very much to participate in this venture."

Malcolm H. Gotterer - "I have read the material ... with considerable interest. Of particular interest was the three dimensional matrix of uses, resources, and professions ...As I have indicated earlier I am willing to work with you in the major task you have undertaken."

Fred Gruenberger - "One of the other people on your list, Joe Weizenbaum, gave me this advice once: "Never take on a chore simply because it's far in the future". You don't even have that -- you offer hard work right away.

Your idea for having a National Computer Year is brilliant, and I hope you can get a lot of the societies to cooperate. It's a natural idea; the time is ripe for it; and they have obviously picked the right man to honcho it. The 70 convention should certainly stand out from the others."

Carl Hammer - "As you know, I am wholeheartedly in favor of invention and innovation."

Lowell H. Hattery - "Your proposal for the 1970 ACM Conference looks difficult but has the promise of real significance ...Congratulations on the program concept and best wishes for successful execution."

J. C. R. Licklider - "My reaction...is that there is not enough time between now and 1970 for the organization of such a thing as you appear to have in mind but that, if a substantial part of the computing community decides to try to bring off a National Computer Year, I would try to contribute to and support the project and would do my best to bring Project MAC and M.I.T. into line with it.

Perhaps I am not the one who should make the argument that there is not time enough, for I tend to want to do things in too big a hurry. However, I am quite concerned that the magnitude of the project you have in mind calls for very careful planning over a long period of time--not just planning but organization of people and ideas and motivations and money and all the rest.

I wish you great success with the venture if you decide to go ahead with it."

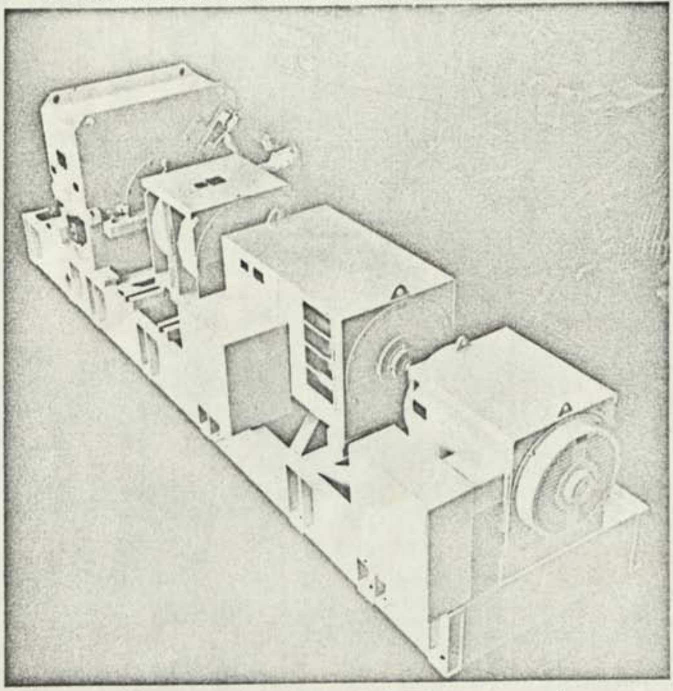
John A. Postley - "I would be delighted to serve as chairman of an ACM session at the 1970 Conference."

E. S. Savas (New York) - "I am impressed with the goals of the ACM 70 Conference as outlined by Bob Bemer."

A. E. Smith - "Your concept for the program for the 1970 ACM National Conference looks good to me....I volunteer my services."

Also replying, without special comment:

- I. L. Auerbach
- E. C. Berkeley
- J. F. Blackburn
- R. G. Canning
- E. F. Cooley
- R. B. Curry
- S. Gill
- J. A. Haddad
- R. W. Hamming
- G. M. Hopper
- J. C. McPherson
- J. Minker
- W. H. Ware



people . . .

R. Everett has been elected president and chief executive officer of The MITRE Corp. He was also named to the board of trustees and member of the board's executive committee. Everett has been with MITRE since it was founded in 1958. . . . Creative Computer Services, Inc., New York City, has announced the appointment of **Gerald O. Koop** as president and **John F. Phillips,** executive vp. They were formerly president and vice president, respectively, of Data Concepts, Inc., a subsidiary of United Data Centers. . . . **Anton J. Pros,** former vp and treasurer of the Midwest Stock Exchange Service Corp., has been named president and chief executive officer of Mid-America Computer Corp., a Chicago-based computer service organization. . . . Cambridge Computer Corp. has formed a new subsidiary, Cambridge Computer of New York, to provide a complete dp facilities management service for select major industries. **John Kehoe, Jr.,** has been named president and **Frank Triolo** exec vp. Both come from IBM. . . . **Jack N. Veale,** formerly exec vp, Systems Sciences Div., of Technical Operations Corp., has been appointed exec vp and elected a director of Optical Scanning Corp. Before joining Technical Operations, Veale was with Sperry Rand for 27 years in various executive positions, including vp-marketing of the Univac Div. . . . Delta Data Systems Corp. (formerly Computer Technology Inc.) has announced the appointment of **R. Barry Borden** as president. Previously, he was a founding officer of DENCO-DATA Engineering Co., manufacturers rep firm in the computer and computer peripheral equipment field. . . . **Bob Bemer,** manager of Systems and Software Engineering Integration at GE Phoenix, has been appointed Program Chairman of the 1970 ACM Conference and Exposition. . . . **Robert M. Whittington** has been appointed to the new post of director of management information services for Libbey-Owens-Ford Co. Formerly coordinator of corporate data processing and plant offices, he will be responsible for the direction, development and operation of the corporate-wide financial and production information systems involving the company's data centers for computer and data processing. . . . **William P. Dingsdale** has been elected president of Western Magnetics, Inc., Glendale, Calif.-based producer of magnetic tape heads. . . . **T. J. Watson, Jr.,** has been nominated as Citizen Regent of the Board of Regents of the Smithsonian Institution. . . . **Dr. Milton**

ACM '71 Call for Papers Will Continue '70 Dialog

NEW YORK – The dialog initiated at ACM '70 between the people being affected by computer technology and those responsible for the technology will be continued at ACM '71, the 1971 National Conference of the Association for Computing Machinery (ACM), according to Wa[illegible] M. Carlson, ACM preside[illegible]

His statement was echoed by Dr. Melvyn H. Schwartz, ACM '71 technical program chairman, as he issued a formal call for papers for the conference in Chicago, Aug. 3-5, 1971.

The theme of ACM '70 was "Computers Meeting the Challenge of Your Future" and the show was one of the first attempts on the part of the computer industry to make a conscious effort to reach the public.

Schwartz, of Northwestern University's Vogelback Computing Center, stressed that ACM '71 papers and presentations will emphasize solutions to problems of major interest to the computing world which were first formulated at last year's "Unconventional Convention" and other topics. Authors are challenged to describe theoretical and fundamental scientific and technical solutions to the constraints which slow down the design, installation and use of computer-based systems.

Schwartz pointed out that technical review of submitted papers and sponsorship of conference sessions will be provided by Special Interest Groups and Committees (SIGs/SICs) of the ACM. The SIGs/SICs represent the ACM's technical infrastructure.

Intentions to submit papers should be received by Dec. 7, 1970. Papers will be due on Feb. 15, 1971, and final drafts of papers should be in by June 1, 1971. Papers will be distributed to preregistrants to a maximum extent prior to the conference.

NEW YORK STOCK EXCHANGE
ELEVEN WALL STREET
NEW YORK, N. Y. 10005

JOHN J. ALEXANDER, JR.
VICE PRESIDENT & DIRECTOR
ELECTRONIC SYSTEMS CENTER

June 19, 1970

TO: National Computer Year Ad Hoc Committee

Re: DELPHI Questionnaire

John McLeod has completed the first draft of DELPHI questionnaire. I have attached the draft for your review.

I would like to ask you for your comments by the first of July. Please send a copy of your comments to both John McLeod and myself.

After reviewing all the comments, I hope that the finalized questionnaire may be distributed to the forty convening organizations by July 15, 1970.

Sincerely,

John J Alexander Jr

Attachment
cc: Mr. Robert W. Bemer ✓
Mr. Sam Matsa

1133 AVENUE OF THE AMERICAS
NEW YORK, N.Y. 10036
(212) 265-6300

ACM Association for Computing Machinery

RECEIVED
1970 OCT 12
R. W. BEMER

September 28, 1970

To: Members of ACM in the Mountain Region

From: J. L. Tischhauser, ACM Mountain Region Representative

Subject: Report on ACM 70 Meeting

ACM 70 has come and gone, but its effects hopefully will continue to be felt for some time. While not all of its lofty goals were attained, a dialogue was started and a number of follow-on conferences involving users and the computing community are developing in several sectors. The report of the conference will be available sometime in December. Thus, while the conference appeared to be a success professionally, it was not very successful financially. The registration fees were set based on an expected attendance of 2000 paid. The actual figure was about 350 short of that number, while the number of paid attendees of the $2.00 admission fee to the exhibits was far short of expectations. As a result, the conference ran at a deficit of about $85,000. If the conference results in making computing more relevant and responsive to the needs of the 70's, it is probably a worthwhile investment for a professional computing organization. This matter was one of the first items reported to the ACM council which held an evening session Thursday night and a session all day Friday. The remainder of this memo will report on some of the other highlights of the council meetings.

Eric Weiss was unanimously elected as the chairman of the editorial board replacing Aaron Finerman. This makes him an ex officio member of the ACM council. At an executive session, Gordon Smith was elected as the Executive Director of ACM replacing Don Madden. In his report, he outlined some of his organizational changes, indicating that the new structure was oriented toward being more responsive to individual members and their needs. Roger Mills, formerly chairman of the Los Angeles Chapter was appointed chairman of the Professional Standards and Practices Committee. Anyone who has suggestions in this area should contact Roger.

President Walter Carlson reported on the method of operation he plans for the ACM council. Essentially he expects it to function like a board of directors, and he will depend heavily on the well developed committee structure of ACM to process matters which are brought before the council.

Ralph Nader, the keynote speaker who was really the highlight of the conference, had generated great enthusiasm by his suggestion that ACM identify and award recognition to the member who makes the biggest contribution in the computer field to "consumer" applications. He agreed to help judge and present the award. President Carlson reported that this matter had been referred to Bill Lyons, chairman of the Awards Committee. It will be an action item for the Council in November.

A motion to make the chairman of the committee on SIG's and SIC's a member of Council was passed. The nominating committee will nominate two candidates to be elected by the SIG/SIC chairmen. This should occur before the November meeting.

A detailed policy on local SIG's and SIC's was passed after a few amendments. It is a modification of the policy which was put temporarily into effect last year changed somewhat to make it easier for non-ACM members to belong yet retaining control by ACM.

A motion to reduce the student dues to $7.50 per year so as to recover only the marginal cost of student members was referred to a committee to examine the proposal in relation to the overall dues structure.

The subject of ACM selling the use of its mailing list was discussed. A motion was passed that the Executive Director submit a plan that permits options by individual members on the use of their names for external mailings. This plan is to be ready for consideration at the November meeting.

The final report of the committee to examine and report on the appropriate structure for the publications enterprise was presented. It recommended a publications board which would have overall authority, subject to the council for ACM publishing activities. It would include publication as well as editorial content in its scope and would replace the editorial boards. It would include a chairman elected by the council and six members appointed by the chairman. The six will include two members of council, two editors of ACM publications, and two members knowledgeable on technical problems in the publishing industry. Since the report was not issued prior to the meeting to provide council members an opportunity to study it, action was delayed until the November meeting.

A motion was passed that all speed by employed by the council in the development and promulgation of a code of professional ethics and competence in ACM with provisions for administration and enforcement.

J. L. Tischhauser

JLT:mam

1133 AVENUE OF THE AMERICAS
NEW YORK, N.Y. 10036
(212) 265-6300

ACM Association for Computing Machinery

WALTER M. CARLSON, *President*

REPLY TO: IBM Corp.
Armonk, New York 10504

October 26, 1970

Mr. C. G. Westbury
Midtown Associates
New York, New York

Dear Mr. Westbury,

Your letter of October 5 raises a question that I have heard with increasing frequency over the past 10 years. The most recent opportunity I have had to explain my own views was in a recent interview with one of the trade magazines.

The questioner asked what I thought the odds are for a merger of ACM and DPMA. My answer was that I consider them zero for the 1970-1975 time frame and 100 percent by 1980. The reason is that DPMA and ACM have negligible common meeting ground at present; DPMA does not belong to AFIPS and has not taken an interest in the National Computer Year project started by Bob Bemer, for example. On the other hand, there is probably an increasing roster of individuals who belong to both, and there are relatively frequent joint meetings of chapters in some locations.

A positive sign of seeking more common grounds is the joint work of DPMA and ACM committees on curricula and accreditation for EDP trade schools. I confidently expect this type of interaction to grow during the next five years, and it is this anticipated trend that forms one basis of my prediction for the ultimate merger.

Another basis lies in forces external both to DPMA and ACM. Various public and private agencies have begun to raise questions about the need for insuring the competence of computer professionals whose activities directly affect private individuals or impact the public interest in some more general way. My personal prediction is that the necessary controls will be established and maintained by legislation at the state level; there is a long history reaching back into Anglo-Saxon common law that provides the most efficient mechanisms for such controls within the structures of our states' statutes.

None of the major computer technical and professional societies, who must be involved with such actions at the state level, are organized on a state-by-state basis. The IEEE people who design and build the machines; the ACM people who program them and organize the data for them; the DPMA people who operate and manage the installations - all are organized by national or by local chapter boundaries. Within 5 or 10 years, there will be enough activity in state legislatures to create enormous confusion among these three organizations (plus others) as the search starts for state-wide bodies of computer professionals to administer the control system being created by the legislatures. This kind of pressure will force a formal coalition - perhaps merger? - of the major professional organizations to remain responsive to their public charters.

I would be foolish to indicate that these are anything more than personal predictions based upon the facts available now. I am personally determined, however, to insure that the ACM leadership remains particularly sensitive to the question you have rasied and the trends that are working both toward and away from your desired goal of a merger between DPMA and ACM.

Thank you for your interest.

Sincerely,

Wm Carlson

W. M. Carlson

WMC:lb

cc: Mr. R. W. Bemer ✓
Mr. ~~E.~~ Calvin Elliott
Mr. W. L. Konigsford
Mr. G. Smith

1133 AVENUE OF THE AMERICAS
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ACM Association for Computing Machinery

WALTER M. CARLSON, *President*

REPLY TO: IBM Corp.
Armonk, New York 10504

December 17, 1970

Memorandum to: Distribution List

Subject: OST Request

The attached letter and attendance list provides you with some background on a meeting held yesterday in Washington. I have a favor to ask of you to help me respond to one request that came from the meeting. I need your help no later than December 29.

First of all, information about this meeting and the request is not for publication. Those of us involved are still quite unsure of the direction this meeting and its follow-on will take us. Premature speculation about such matters in the press can only insure that communication with OST will cease.

A report will go from Andy Aines to Ed David about January 1 on the key items distilled from our discussions yesterday and from any further submissions we make by December 30. As of now, my guess is that the report will have the following characteristics:

It will probably -:

- Focus on broad business trends in the computer and computer-related industries.
- Examine implications of international competition, both in the U.S. and abroad.
- Highlight requirements for education and training.
- Crystallize action needed on patent, copyright, and other matters affecting intellectual property rights.

- Probe the potentials for expediting major governmental programs in the civilian agencies (i.e., excl. DOD, AEC, NASA).

It will probably not -:

- Consider scientific advances in computers or applications.
- Appraise the status of research in computer and information science.
- Evaluate the coordination of computer technology in federal agencies.
- Identify specific projects, programs, or institutions deserving increased funding.

For those of you who have been following my President's letters, the emphasis will be on the areas of public concern defined in the November 1970 issue rather than on technical areas discussed in the September 1970 issue.

My President's letter in the December 1970 issue on the challenges of ACM 1970 was submitted for use in the OST report yesterday.

Now for the favor I am asking.

Please write, wire, or phone to me one or more paragraphs on topics that you believe deserve the attention of the President's Science Advisor, within the broad guidelines I have suggested in this memorandum and in Andy Aines' letter. The deadline is December 29. My phone number at the office is 914-765-4247 and at home is 203-322-9979.

I reserve the right to screen, condense, consolidate, or reject your suggestions as I assemble my own submission to Andy Aines. Thanks in advance for your interest and your help.

Sincerely,

Walt

W. M. Carlson

WMC:lb
Attachments

cc: Mr. A. A. Aines

Distribution List

Mr. P. Armer
Mr. R. W. Bemer
Mr. R. P. Bigelow
Mr. R. B. Blue, Sr.
Mr. C. L. Bradshaw
Mr. R. G. Canning
Dr. P. J. Denning
Dr. A. Finerman
Dr. B. A. Galler
Mr. G. Glaser
Dr. M. Greenberger
Mr. J. D. Madden
Dr. S. M. Matsa
Dr. A. G. Oettinger
Mr. D. B. Parker
Dr. A. Ralston
Dr. W. C. Sangren
Mr. G. Smith
Mr. E. A. Weiss

ATTENDANCE LIST -- 16 DECEMBER 1970

Mr. Charles P. Bourne
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1619 Santa Cruz Avenue
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President, Association for Computing Machinery
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[redacted]

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GENERAL ELECTRIC
COMPANY

P. O. BOX 8, SCHENECTADY, NEW YORK 12301 . . . TELEPHONE AREA CODE 518—346-8771

NEW YORK OFFICE
570 Lexington Avenue
July 18, 1969

Mr. R. W. Bemer, Program Chairman
ACM 70 Conference
c/o General Electric Company
13430 North Black Canyon Highway
Phoenix, Arizona 85029

Dear Mr. Bemer:

The enclosed clipping describes Tom McFee, who might well f
a couple of slots on your cube. I got to know him fairly well w
he was the full-time secretary for a bunch of us part-time consu
on a White House study, and I have a high regard for his common

Sincerely,

Dick

Richard C. Raymond
Consultant - Information Sc
Research & Development

RCR:deb
Enc.

MCFee Becomes Secretary For HEW Program Systems

WASHINGTON, D.C. – Secretary of Health, Education and Welfare Robert H. Finch has appointed Thomas S. McFee as deputy assistant secretary for planning and evaluation of program systems.

For the past two years, McFee, a 38-year-old native of Milwaukee, has been HEW's director of systems development. He was responsible for the design and implementation of the program systems to support planning, programming, and budgeting in the deparment.

In his new role he will be responsible for the coordination of long-range planning and the development of program information systems designed to measure the effects of HEW programs.

Prior to joining HEW, McFee served on the staff of the White House Office of Science and Technology and for four years was a member of the Department of Defense Weapons Systems Evaluation Group.

A graduate of the University of Maryland in 1953, McFee served as an officer in the Air Force

Thomas S. McFee

and taught in the Montgomery County, Md., schools before joining the government.

202-962-8354

ALSO BRYAN MITCHELL

√

National Computer Year Planning Hurt by Afips and IEEE Apathy

NEW YORK – It appears that a squabble is growing among the various computer-related associations and organizations over the Association for Computing Machinery's proposal for a National Computer Year, and the split could possibly torpedo the effort before it is fully launched.

The National, possibly International, Computer Year was originally proposed in July by Robert Bemer, program chairman for ACM's 1970 National Conference. It has received support from between 50 to 75 professional societies, according to ACM [CW, Feb. 11].

However, CW has learned that two influential societies in the computer field, the American Federation of Information Processing Societies and the IEEE Computer Group, are withholding their support from the project and will not take part in the planned computer year coordinating conference, which will be held in either late March or early April.

The ACM organizers of the project told CW that Afips was one of the first organizations contacted for support of the project when it was formulated last July. The group, however, rebuffed the ACM effort at a meeting of its executive committee in August.

An Afips spokesman told CW that the executive committee rejected the idea because it felt that there was not enough time to implement the idea by 1970, which was originally proposed for the start of the National Computer Year. However, ACM sources indicate that Afips has not shown any interest in the idea even after it was made an open-ended project without any set starting or ending date.

ACM sources said that Afips was welcome to participate, even at this late date, and that if it joined the coordinating committee it could ask for delays in the project for more time to plan, if that is its real objection.

Some ACM sources, in fact, see the time factor as a dodge on the part of Afips, and accuse the society of wanting to take over the project.

"Afips really likes the idea," one source told CW, "but they want to run it and have everyone follow after them. They don't want to participate now because they wouldn't be able to run it, they would have only one vote like the other societies."

The attitude of the IEEE Computer Group seems to support this last contention of the ACM. The group, in correspondence with ACM, announced that it would not support the project, unless it was run by Afips.

While the overall IEEE group will not support the project at the present time, the organization's New York City chapter does plan to send a representative to the coordinating committee meeting this spring in conflict with the national policy of the group, CW learned.

In answer to the charge that it was blocking the project because it could not run the show, an Afips spokesman told CW that "Afips has not taken that position.

"Afips is not against anything that will promote computers or peoples' understanding of them. But any computer year will need more planning and sufficient organization before it can receive Afips support," he said.

While Afips as an association will not participate in the initial planning sessions for the proposed computer year, some of the constituent societies of the association do plan to send representatives, CW discovered.

Of course, ACM, which is an Afips member, plans to participate in the planning, since the computer year was basically its idea. In addition, the American Institute of Certified Public Accountants and the Society for Information Display, both Afips members, will send representatives to the computer year planning sessions.

In referring to the Afips position, a source at ACM told CW, "If they really believe that this is a good idea that just needs more planning, you would think that they would offer their services and resources to help the initial planning effort."

However, the ACM source added, "I think that Afips will come around and eventually support the project."

COMPUTERWORLD

70 FEB 18

Editorials

Computer Year Deserves Support

The idea of a National or International Computer Year, designed to focus attention on how computers can help solve man's problems and contribute to improving the quality of life for all, deserves the support of all members of the computer community.

The negative reaction of Afips and the IEEE Computer Group to the ACM proposal is unfortunate.

If these two powerful influences in the computer community choose to "drop out" and "not become involved" because they do not think there is enough time to plan for the proposed year, the computer community, the nation, and ultimately the world-are the real losers.

Perhaps there is not enough time to plan sufficiently and still begin the computer year in 1970. After all, the planning for the International Geophysical Year went on for more than three years.

But if we are to have rational planning for a computer year, everyone in the computer field should start thinking and planning now. Only by coordinated planning will we ever be able to run and support a project of this importance and magnitude.

We believe that the direction laid down by ACM – to bring in noncomputer societies whose members are affected by computer technology – is the right path to follow on such a project.

It is time, we feel, that the computer community stopped talking to itself.

By asking other societies to participate in a computer year, and by interacting with them and attempting to understand their problems and needs during that year, the computer community can show its maturity, and hopefully its commitment to upgrading the quality of life.