GEORGE R. TRIMBLE, JR.

Computer Usage Communiqué

As CUC completed its sixth year, it became increasingly evident that its continued growth would require adjustment to its method of operating. Although we have been incorporated since 1955, we have functioned, in principle, as a proprietorship. With more than one hundred employees, and with four bases of operation, it has become impractical to continue as in the past and we must now form more distinct areas of responsibility and operate in a manner which more closely resembles a corporate enterprise. It is my sincere wish that this can be achieved without unduly formalizing our method of operation and with continuance of the esprit de corps which has been developed over the years. We must form an organization structure with proper and clear lines of responsibility, without undue loss of those freedoms and privileges associated with a small organization.

Unless we make this transition smoothly and rapidly, CUC will suffer as well as you as individuals. In order to give adequate attention to such things as training, marketing, personnel, organization and dissemination of technical information, exploration of new areas of service, etc., we must reorganize. This will make us more effective, more efficient and more responsive to the needs of our clients.

Last December at a dinner meeting, I outlined a plan for accomplishing this purpose. It is my pleasure that I can now say that this plan has been implemented. I would like to outline this organization in order to describe clearly the functions involved so that each of you will have a better feel for your own responsibilities and so that each of you may have a better understanding of where to look for assistance in particular required areas. Basically, the overall organization of the company can be described by the following chart:
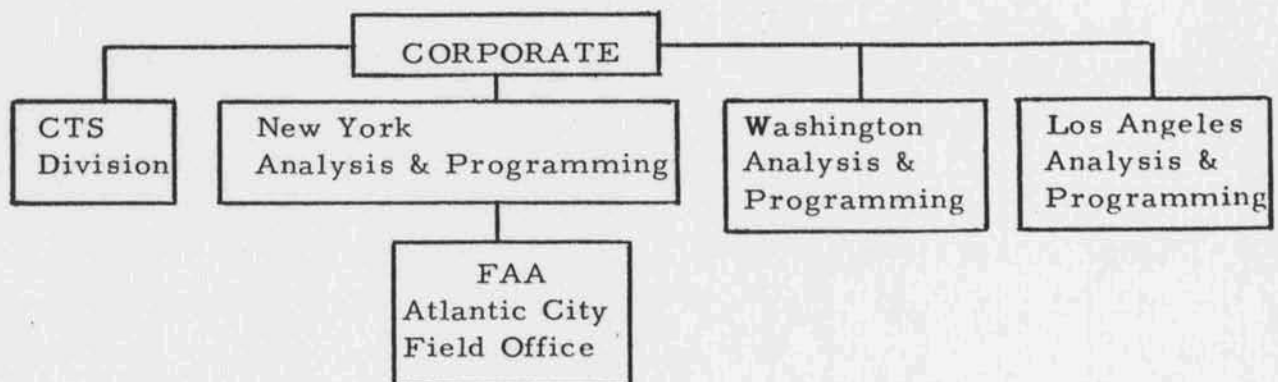
The Corporate Staff is concerned with the coordination of activities on a company-wide basis. It is the intent that the corporate staff coordinate, assist and control the activities of the local offices as well as plan for expansion of these offices and others.

Each office shall be expected to operate independently. The manager of each office will be responsible for the performance of that office from both a technical and a business standpoint. I realize that for many of you who have been with CUC a long time, this represents a substantial change but it is necessary for the company's good as well as your own.

Several of you in the recent past may have come to me with some problem either personal or concerning the work you were doing. I regret that I can no longer give such problems the kind of consideration they deserve, for I have not been close enough to such situations, and I cannot devote the time required to become familiar with them. It is therefore to your advantage that responsibility be delegated in a manner which permits decisions to be made promptly by someone close to each situation.

The Corporate staff consists of Liston Tatum, Louise Greene, and myself. Liston Tatum has been elected Vice President responsible for marketing. He will be responsible for public relations and sales. He will assist each office in preparation of major proposals and will coordinate the sales efforts of each office. He will concern himself with such things as preparation of promotional material, standardization of proposal formats, releases of information to the press and trade magazines, advertising, etc. Louise Greene as Secretary-Controller will continue to be concerned with the financial integrity of the company. Although she has no operating responsibility in any of our areas of activity, it is she who will audit the financial performances of these activities. Emanuel Chafets will continue as Director of the CTS Division assisted by Dick Ketover. Walter Nelson has been elected Vice President responsible for our Washington operation and will continue to concern himself with the growth and development of that activity. George Vosatka has been named manager of our Los Angeles office. George comes to us from Bendix Computer Division where he was manager of their Western Region. Neither the Washington office nor the Los Angeles office is large enough at this time for us to be concerned with their internal organization. The New York office, however, has grown to a point where this is of vital concern and I would, therefore, like to outline, in detail, its organization.

Robert Glaser, as manager, comes to us from International Telephone and Telegraph. He will be concerned with all the administrative and personnel matters for the New York staff. He will be assisted by Shiela Shiren who will concern herself with recruiting, contract control, purchasing, and all matters concerning our physical office and equipment. George Trimble will continue to direct our FAA activity at Atlantic City.

Anthony Penta is now free to devote full time toward his responsibility as Director of Data Processing Applications Development. He will oversee all projects we are working on in this area and he will also act as a consultant for the other offices where his assistance is desired on creation of large complex systems.
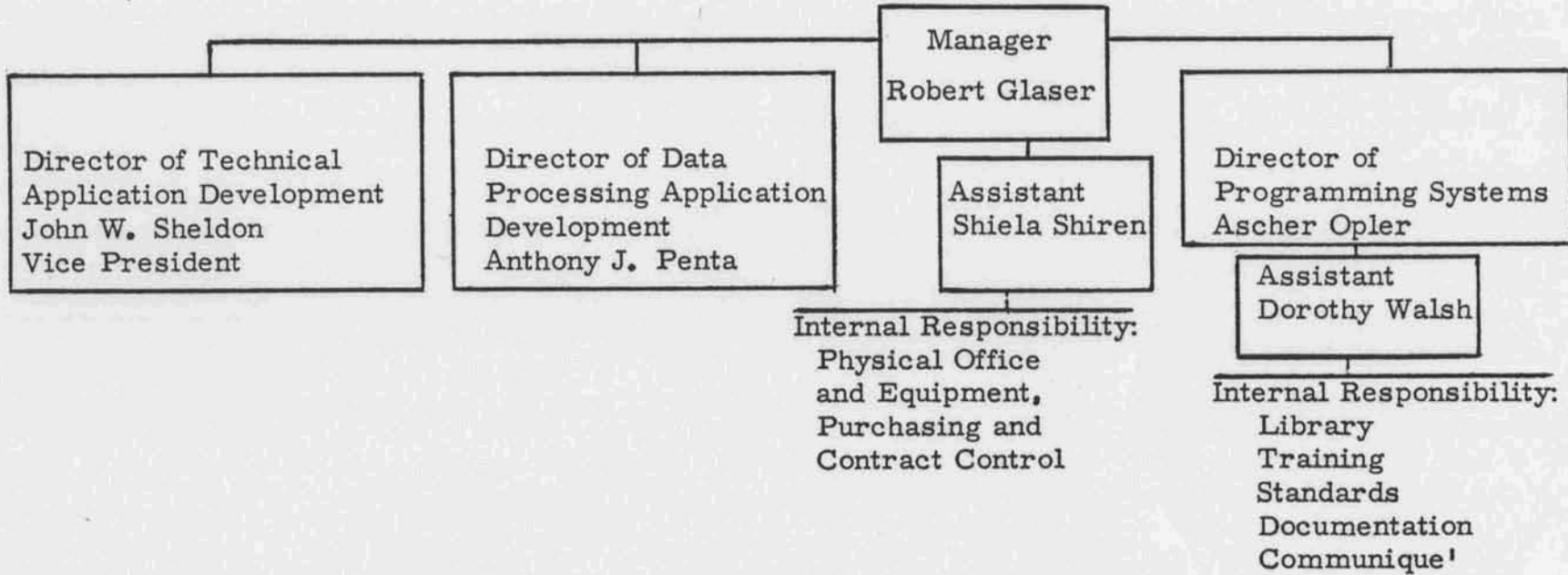
John W. Sheldon, Vice President and Director of Technical Application Development, will oversee all projects of a scientific or engineering nature. He will consult with each office on work of this nature.

Ascher Opler, Director of Programming Systems, will oversee all work we are doing in system programming and be responsible for those internal services which are primarily concerned with programming systems. Specifically, this will include training, library, standards and documentation. Because of the growing need for these internal services, he will be assisted by Dorothy Walsh. In addition to concerning herself with the library, training, standards and documentation, Dorothy is responsible for the "Communique."

In documentation, we have gradually improved our technique resulting in better appearance in reports and more efficient means for producing them. Carmine Dieli is now coordinating this work and all New York program documentation should now be turned over to him rather than any of the secretaries.

CUC
New York

Analysis & Programming

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                          ┌──────────────────┐
                          │     Manager      │
                          │  Robert Glaser   │
                          └──────────────────┘
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Director of Technical Application Development
John W. Sheldon
Vice President

Director of Data Processing Application Development
Anthony J. Penta

Assistant
Shiela Shiren

Internal Responsibility:
Physical Office
and Equipment,
Purchasing and
Contract Control

Director of Programming Systems
Ascher Opler

Assistant
Dorothy Walsh

Internal Responsibility:
Library
Training
Standards
Documentation
Communique'

The following chart is a recapitulation of the organization of the New York office.

- 4 -

On the last pages of this "Communique" appears a full roster of CUC's staff.

I am sure that you will continue to give those responsible for the different phases of our operation full cooperation and it is hoped that this reorganization will result in continued improvement both in your performance and in your working conditions.

E. C. Kubie

PERSONNEL NOTES

Walter Nelson has been named Vice President for Washington Operations. Liston Tatum has been named Vice President in charge of Marketing. Mr. Robert Glaser has joined CUC as Manager of our New York Operations. Bob most recently was senior Project Engineer in charge of Data Processing Analysis with International Telephone and Telegraph, Federal Laboratories. Previously he was an Engineering Analyst in the Light Military and Electronics Department's Computer Applications Group at General Electric in Utica, New York. Mr. George Vosatka has joined CUC as manager of our West Coast Operations. George was formerly Western Regional Manager of Bendix Computer Division. Prior to that he served respectively as Regional Manager, Head of Component Sales and Assistant to the Director of Marketing for Electrodata. Both Bob and George come to CUC with strong administrative, sales and technical experience. John Duffy is Field Representative in the New York Area and, as such, will serve CUC and CTS. His experience has been varied. He has been registrar of La Salle, President of the Barnard Independent Service Bureau and President of the Stenotype Institute. David Fried and Dolores Kaplan have joined CUC as senior programmers in the New York office. David has programmed the 705 for Bache and the 501 for R. C. A. Dolores was with the 7070 group of IBM Applied Programming. Richard Auerbach, Richard Etzi and Richard Frey have all joined the New York programming staff. Rosalind White has been added to the secretarial staff in New York. Larry Walowitz, an analyst, and Elaine Veneziano, a secretary, have returned to CUC for the summer. Joanne King is another summer only secretary. Rita Zymet will work in the Documentation Group for the summer. James Mauchly, a technician, and James Wood, an operator, have been added to the CTS staff. James Mauchly got his data processing experience with the Army, operating a 704. James Wood has been with the NSA operating a 709 and will be console operator on the 704 in Philadelphia. Mrs. Elizabeth Eply, an accountant, has recently joined the Washington office. "Liz" rounds out the D. C. administrative staff and insures efficient handling of CUC's growing list of government and business accounts handled from Washington.

PROJECT REPORTS

UNSUNG HEROES

This note, in the NEW YORK TIMES of June 4, was of particular interest to Ascher Opler, Norma Baird, Sigmund Israel and Lee Ridgeway. They produced the program which makes this system possible.

SCIENCE NOTES: COMPUTER

COMPUTER INDEX—

Scientific documents are being swiftly and automatically indexed according to important words in their titles by an electronic digital computer at the Bell Telephone Laboratories. The titles are fed to an IBM 7090 computer on punched cards, along with other cards containing the names of authors and identification numbers. The computer is programmed to scan these cards, recognize the information and print out a subject index. In addition, the computer can be instructed to produce an alphabetical author index, a bibliographical list of all the indexed documents, and other indexes according to date, language, project, and other classifications.

Considerable time and effort is saved by this method of mechanized indexing, the Bell Laboratories report states. It takes a clerk only about two minutes to punch the title, author and project number on standard punched cards. The machine took only twelve minutes to index 1,700 documents according to title, author, number and project.
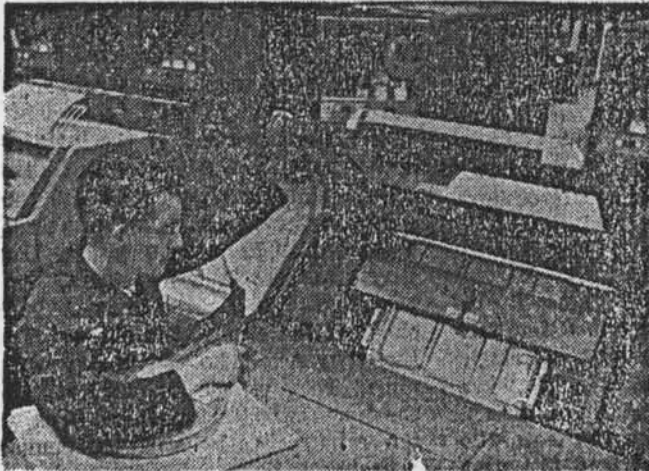
At 600 lines per minute, printer idexes documents.

THE CRITICS RAVE...

The response to the CUC 1401 Memory Print Routine developed by Washington staff members continues strong and highly favorable. To date, over 500 requests for card decks have been processed, and the end is not yet in sight.

Numerous letters have been received testifying to the print routine's usefulness and to the recipients' favorable impression of CUC. A few examples follow:

"Our staff has had nothing but praise for this program...".
Southern Railway System
"Most useful..."
Rolls-Royce Ltd.
"...an improvement over IBM's."
North American Aviation, Inc.
"The best 1401 Memory Print configuration we have seen...".
The Martin Co.
"We used the program on our 1401 first installed in Japan and found it most excellent and satisfactory."
IBM Japan, Ltd.
"Many thanks.... Very helpful in debugging...."
Campbell Soup Co.
"Superior...."
Canadian Pacific Railway Co.

SIMULATING THE SIMULATOR

Final reports are being completed on the Assembly and Simulation program prepared for a major engineering firm. This job constitutes a major testing system and as such spans three machines. A computer has been built to simulate the control panel used in firing the Polaris Missile as a means of training Navy personnel. Programs for this computer, the FBM computer, are assembled on the 704. The assembly program itself provides debugging features not usually associated with the assembly process. After making the standard format and validity checks, the TAP (Trainer Assembly Program) system makes logical operating checks based on the characteristics of the FBM computer. Further testing of programs is done on the IBM 7090 which simulates the action of the FBM computer in performing a given sequence of commands. Thus a simulation of a simulator is set up. Should the simulation process indicate a need for revision of the program, modifications can be made immediately

by means of an updating of the TAP output. The updated program can
then be put through the simulation again for further debugging. After
satisfactory results have been achieved by the simulation process, a
final pass of the Assembly puts the data into proper machine format
for acceptance by the FBM. The 7090 portions of this task have been
prepared in the SOS system to facilitate client operation and have
been in production for some months. In the course of their prepara-
tion, CUC once again found itself in a pioneering position on a new
system and was able to benefit IBM by suggesting several useful
modifications. The Assembly program indicated areas where re-
definition of FBM characteristics would result in better performance.
These changes have been made and the TAP system extensively mod-
ified and rewritten to provide maximum information. Kathleen Beisty
has been responsible for the Assembly program. With her on this
were: Jane Mutaf, Hank Nintzel, Ed O'Connor, Bob Schneider, Reena
Trunk, Dorothy Walsh, and Susan Weiss. Doris Cohen directed the
Simulator group which included Wilma Bernabei and Gail Brunstein.
The Update program was done by Dorothy Walsh.

VITAL STATISTICS

IBM has announced the 1301 Disk Storage Unit to provide additional random access on-line storage capacity to such major systems as the 1410, 7070, 7080, and 7090. As many as 280,000,000 characters may be added to a given system. These disks are a new concept in disk storage devices. They are stacked in cylindrical form, each disk having its own read-write head. All heads move simultaneously so all disks in a given stack are accessed at once.

An Abstract Index to SHARE distributed programs as of June, 1961, is now in all CUC libraries.

The SHARE Write-Up on Linear Programming for the 704 with test problems is in the New York Library.

New 7090 Fortran Manuals, form number C28-6054-2 and 704 Fortran Manuals, form number C28-6106 have been received by the library. THESE OBSOLETE ALL OTHERS. Any one using these systems should check his materials carefully. Obsolete manuals are to be discarded.

The Honeywell H-800 library has been growing rapidly. It now includes the following manuals:

> Algebraic Compiler (written by CUC)
> ARGUS Assembly Language (new manual)
> Sort and Collate
> Executive System
> Programmers Reference
> Notes on Equipment Changes
> Programming Notes
> FACT

> There is also the H-400 General Information Manual.

A major revision has been made to the 1401 manual. Any manual numbered earlier than A 24-1403-2 is obsolete. Cards have been printed showing required configurations for 1401 systems and 1401 timings. These have been combined on a single page for easy reference. The current 1401 publications are also listed on a single page for convenience. There is one change to note. Bulletin J 24-1434 has been reprinted in June of this year and is now numbered J 24-1434-0. Auto Coder II has been received.

The August 1960 major revision to the 7070 manual, Form Number
A 22-7003-2, has been amended by an ERRATA Sheet dated April 1961.
The form number is G 22-6588. This and the manual are the latest
information on this system. Other publications in the Library include:

> IBM 7070/7074 Compiler Systems: Operating procedure.
> Additions to the IBM Auto Coder Writing Macro-Generators
>   for the IBM 7070 Auto Coder.
> Library Abstracts: Distribution No. 1.

The following pages should be retained in appropriate sections of your
CUC notebook. Failure to comply with STANDARDS MEMO 1 will re-
sult in the return of flow charts.

Address all inquiries to: Miss Dorothy A. Walsh, Editor -
Computer Usage Company, Inc. - 18 East 41st Street - New York 17, N. Y.

PROCEDURE FOR LIBRARY USE

Materials published by IBM are indexed under three classifications:
Systems, Applications, Machines.

For information on an IBM product, the pertinent index should be con-
sulted and the applicable publication noted. All publications listed are
ordered as a matter of course for systems and machines. Special
application material is ordered on a request basis. If the desired
material is in the library, not stamped for reference only, it may
be borrowed. The borrower's name, the date and the material
taken should be entered on a card in the file according to topic or
machine. Reference material may be consulted in the library.
Should the desired material not be in the library the file should be
consulted to ascertain possible borrowers. If the publication has
never been part of the library this should be noted on the request
to order it. All requests should include form numbers and should
be placed in the request box. Ordering of library materials is done
by the library only. No individual requests should be made to li-
brary services by members of CUC.

Program abstracts distributed by SHARE are filed by SHARE number.
Each volume lists the limits of the included group and the numbers for
which no write-ups are present. All SHARE distributions are on
micro-film reels which are labeled to show content.

There should be no reason for a SHARE write-up to be removed
from the volume in which it is filed for more than a day. Materials
needed should be duplicated. A charge sheet has been inserted in
all volumes of SHARE write-ups and should be completed as in-
dicated. When papers are returned, they should be filed carefully
by number.

Programs missing from the write-up file may be found on film. If
the cards are in the library, a note has been made on the write-up.
Should further material or cards be desired, SHARE distribution
number, form of material (e.g. symbolic cards, listing) and iden-
tification should be put in the Library Request Box.

An extensive cataloguing of all other materials is in progress. A
data file has been made by machine, name and number, further sub-
divided into systems, machine information, applications and sub-
routines. The computer in question should be looked up by name
and the type of information sought. Where a particular form of

information is not found, a request should be filed in the Library Request Box. This should give the machine name and number as well as the desired type of information. When located, materials not marked for reference may be borrowed according to the above procedure.

Periodicals have been indexed by title. If a desired issue is not on the shelf, the catalogue card should be consulted. This will indicate which issues are available in basement storage.

Systems Tapes maintained by CTS are also indexed and the installation at which they are kept is noted. Anyone wishing to use a given system should consult the catalogue.

All standard systems are readily available. Special systems must be requested.

Materials to be returned to the library should be replaced neatly on the shelf from which they were taken. The charge card should then be removed from the file, the borrower's name crossed out and the card replaced in the charge card file at the back of the box.

Program Name	Minimum Storage Capacity	Minimum Tape Units	1402 Card Read-Punch	1403 Printer	140S Disk Storage	Additional Features
SPS-1	1400	--	x	x	--	--
SPS-2	4000	--	x	x	--	--
Autocoder	4000	4	x	x	--	Advanced Programming High-Low-Equal Compare
Input/Output Control System	4000	4	x	x	--	Advanced Programming High-Low-Equal Compare
FORTRAN	8000	--	x	x	--	Advanced Programming Multiply - Divide High-Low-Equal Compare
COBOL	4000 or 8000 12000 or 16000	6 4	x	x	--	Advanced Programming Multiply - Divide High-Low-Equal Compare
Card Report Program Generator	4000	--	x	--	--	--
Tape Report Program Generator	4000	1	x	--	--	--
RAMAC Report Program Generator	4000	1	x	--	x	--
Sort 1	4000	4	x	x	--	High-Low-Equal Compare
Sort 2	8000	4	x	x	--	Advanced Programming High-Low-Equal Compare
Merge 2	8000	3	x	x	--	Advanced Programming High-Low-Equal Compare
File Organization System	4000	--	x	--	x	--
Card Utility Programs	1400	--	x	x	--	--
Tape Utility Programs	4000	1	x	x	--	High-Low-Equal Compare Column Binary (optional)
Multiple Tape Utility Programs	4000	1	x	x	--	High-Low-Equal Compare Advanced Programming Column Binary (optional) Read-Punch Release Additional Sense Switches
RAMAC Utility Programs	4000	1	x	x	x	--

Figure 1. Minimum Machine Requirements for IBM 1401 Programs and Programming Systems

Form No.	Title
J24-0200	IBM 1401 Symbolic Programming System: Preliminary Specifications
J24-0209	Programs for IBM 1401 Card Systems: Preliminary Specifications
J24-0215	Report Program Generator for IBM 1401 Card Systems: Preliminary Specifications
J24-1411	Utility Programs for IBM 1401 Tape Systems: Preliminary Specifications
J24-1412	IBM 1401 Symbolic Programming Systems: SPS-1 and SPS-2
J24-1416	Programs and Programming Systems for the IBM 1401
J24-1422	IBM 1401 Sort 1: Specifications
J24-1426	Utility Programs for IBM RAMAC 1401 Systems: Preliminary Specifications
J24-1428	Multiple Utility Program for IBM 1401 Tape Systems: Preliminary Specifications
J24-1434	Autocoder for the IBM 1401: Preliminary Specifications
J24-1436	Sort 2 and Merge 2 for the IBM 1401: Preliminary Specifications

Figure 2. Available literature on Programs and Programming Systems for the IBM 1401

MACHINE FEATURE REQUIREMENTS FOR 1401 APPLIED PROGRAMS

Program	H/L/E	Advance Prog.	R/P RLS	Minimum Memory Size	Number of Tapes	Mpy/Div	Print Storage	1405	Comments	Date Available	Manual
SPS-1				1.4K①					No special features required.	Current	J24-0200
SPS-2				4K②					No special features required.	Current	J24-0200
1401 Autocoder	X	X		4K②	4				Macro instructions to be released later.	Current	J24-1434
1401 IOCS	X	X		4K	4				Specifications not yet available.	7/1/61	
COBOL	X	X		12K②	③				Specifications not yet available.	Unannounced *	
Fortran	X	X		8K		X				9/1/61	
Tape/Printer	X			4K	1		④			Current	J24-1411
Card/Tape	X		⑤	4K	1					Current	J24-1411
Tape/Card	X		⑤	4K	1					Current	J24-1411
Multi. Utilities	X	X	X	4K	1-3		④			Current	J24-1428
Sort 1	X			4K	4-5					Current	J24-1422
Sort 2 and Merge 2	X	X		8K	4-6					Current	J24-1436
Card Report Program Generator	5			4K⑥		⑤	④		No special features required.	Current	J24-0215
Tape Report Program Generator	5			4K⑥	1-2	⑤	④		No special features required.	Current	J24-0215
Ramac Report Program Generator	5			4K⑥		⑤	④	X	No special features required.	6/1/61	J24-0215
Card Utilities and Error Detection Aids				1.4K					No special features required.	Current	J24-0209
Ramac Utilities			⑤	4K	1			X	No special features required.	Current	J24-1426
Ramac File Organization				4K				X	No special features required.		

NOTES:
① Will assemble programs for 1.4K - 4K
② Will assemble programs for 1.4K - 16K
③ Number of tapes not yet specified
④ Speed will be improved with print storage
⑤ Optional
⑥ Length of generated program depends on complexity of job.

OP CODE	OPERATION	CYCLE	RATE	PROCESSING TIME AVAILABLE	
				WITHOUT RELEASE INST.	WITH RELEASE INST.
1	Read	75 ms	800 cpm	10 ms	31 ms
		150 ms	400 cpm	85 ms	106 ms
		225 ms	266 cpm	160 ms	181 ms
2	Print — Without print storage				
	Single space	100 ms	600 lpm	16 ms	
	Double space	105 ms	572 lpm	21 ms	
	Triple space	110 ms	545 lpm	26 ms	
	Print — With print storage				
	Single space	100 ms	600 lpm	98 ms	
	Double space	105 ms	572 lpm	103 ms	
	Triple space	110 ms	545 lpm	108 ms	
3	Print and Read				
	Without print storage	150 ms	400 cpm	8 ms	
1-2	With print storage	112.5 ms	533 cpm	8 ms	
4	Punch	240 ms	250 cpm	22 ms	59 ms
		300 ms	200 cpm	82 ms	119 ms
		360 ms	166 cpm	142 ms	179 ms
5	Read and Punch	240 ms	250 cpm/rd, 250 cpm/pu	22 ms	59 ms
		300 ms	200 cpm/rd, 200 cpm/pu	22 ms	59 ms
6	Print and Punch without print storage	300 ms	200 lpm/pr, 200 cpm/rd	28 ms	
	With print storage	240 ms	250 lpm/pr, 250 cpm/rd	20 ms	57 ms
7	Print, Read and Punch without print storage	300 ms	200 lpm/pr, 200 cpm/rd, 200 cpm/pu	28 ms	
	With print storage	240 ms	250 lpm/pr, 250 cpm/rd, 250 cpm/pu	20 ms	57 ms

1401 INPUT-OUTPUT TIMING
(Print Storage or Read-Punch Release not Considered)

Chart Used for Obtaining Preliminary Estimates of Document Output

Operation	Maximum Speed	*Minimum Cycle Time	Maximum Cycle Time	Reduced Speed	"Free" Processing Time	Extended Processing Increment	Free Skip/Space Dual Speed
Print	600 lpm	100 ms	100 ms	600 lpm	16 ms	+ ex. proc. time	1
Read	800 cpm	75 ms	150 ms	400 cpm	10 ms	+ 75	
Punch	250 cpm	240 ms	300 ms	200 cpm	22 ms	+ 60	
Print-Read	400 cpm	150 ms	225 ms	267 cpm	21 ms	+ 75	15
Print-Punch	200 cpm	300 ms	360 ms	167 cpm	33 ms	+ 60	83
Read-Punch	250 cpm	240 ms	300 ms	200 cpm	22 ms	+ 60	
Print-Read-Punch	200 cpm	300 ms	360 ms	167 cpm	33 ms	+ 60	83

*If the same I/O command is given in succession, the minimum time may be used for all except the first of the series. (Clutching considerations account for the difference in minimum and maximum cycles times.)
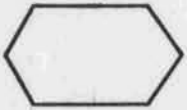
LINE SKIPPING/SPACING

1. Assume the first line "free."
2. Next 7 lines require 5 ms per line (35).
3. If dual-speed carriage is used, all lines in excess of 8 require 2.3 ms per line.
4. If no dual-speed carriage is used, all lines beyond the first require 5 ms per line.
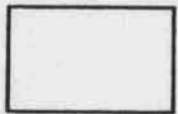
FLOW CHART SYMBOLS
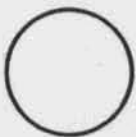
INPUT/OUTPUT

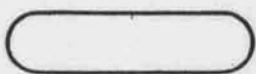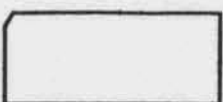MODIFICATIONS/VARIABLE EXITS

SWITCH DECISION

PROGRAM STEPS

PRINTED OUTPUT

CONTROL CONNECTOR

TAPE

EXCEPTION/HALT/END OF JOB

CARD