DOS/360 Support of IBM 2314 Direct Access Storage

It is the intent of the IBM Corporation to provide Disk Operating System support for the IBM 2314 DASD comparable to the support currently available for the IBM 2311.

Until design and specification stages are completed, we cannot commit to the performance or availability of the support.
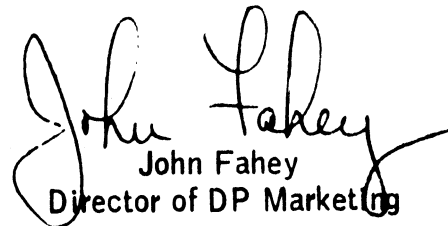
Our planning target for availability of the Control Program, Data Management, Assembler, COBOL, FORTRAN, RPG, QTAM, and Utilities is May 1968. Additional information concerning these components will be provided in September 1967.

PL/I and Sort/Merge support will not be available in the initial release of the 2314 support. Information concerning PL/I and Sort/Merge availability will be provided at a later date.

There are no plans to provide Autotest support.

This information represents the technical intent of IBM with respect to this programming product. It is possible that the objective will not be met. The program is subject to revision or withdrawal and no commitment or warranty is expressed or implied.

Guidelines for using the Statement of Intent appear on the reverse side.

John Fahey
Director of DP Marketing

Release Date: June 7, 1967

Distribution: All Areas

Statement of Intent Guidelines

You must insure that:

1. In any discussions with customers or prospects on intent information, the IBM representative makes clear to the customer that intent information represents only technical objectives and does not constitute any announcement of a programming system.

2. All proposals or installation planning discussions with customers or prospects on intent information must be documented to the customer. The following disclaimer must appear in this or any other documentation on intent information:

   "This information represents the technical intent of IBM with respect to this programming product. It is possible that the objectives will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied."

   The proposal section containing the Statement of Intent must be entitled "Statement of Intent".

   The description of the Statement of Intent which precedes the disclaimer must contain no omissions or rephrasing of the information contained in the DPD HQ Statement of Intent release that could result in misrepresentation to the customer.

   The following sentence should be included after the disclaimer: "It should be clear that this Statement of Intent is not a Programming Announcement and that a Programming Announcement may or may not be forthcoming."

3. Orders secured from proposals in which intent information appears must contain installation plans not dependent upon the technical objectives or target schedules embodied in a Statement of Intent.

4. Installations having an interest in and probable use for the intent support must have that fact documented in the Installation Information System. The Program Planning form should be used to record the index numbers of the Statement of Intent (obtained from monthly IBM Program Support Master List). The required date for firm specifications should be entered in the Test Date column and the required availability date in the Install Date column.

Subject: Statement of Intent Policy on Programming Systems

Today's advanced programming support often involves highly complex development processes with significant technical problems that must be solved. It is difficult to accurately estimate the time required to solve these problems. We are therefore expanding our programming support development cycle to require more detailed design work on complex and new technology systems before announcing firm schedules and technical specifications.

With this expanded development cycle, we recognize that our customers may require information on programming development plans prior to announcement if they are to do an intelligent job on their installation planning.

Where it is necessary to provide this early information, the programming procedure will be divided into three steps: (1) Intent Statement, (2) Announcement, and (3) Delivery.

Our objective is still to announce programming systems after extensive testing. Statement of Intent will be considered for release only when:

    a.   The equipment to be supported has been announced.
    b.   The actual programming system announcement would be premature, misleading, and not in the best interests of the customer or IBM.
    c.   We would not be properly advising our customers by not disclosing our intent.

Each Intent Statement requires your careful supervision so that:

    (1) our customers and prospects understand that the information furnished them is subject to possible change or withdrawal and therefore is not an IBM commitment; and

    (2) the equipment order is sound with minimum dependency on intended support for installation. Your Branch Managers* should personally review and approve each case involving the use of a Statement of Intent in a proposal or installation plan. You should also insure that such cases of use are documented to the customer with the following disclaimer:

        "This information represents the technical intent of IBM with respect to this programming product. It is possible that the objective will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied."

The first use of this new policy on a general basis is for support of the IBM 2314 Direct Access Storage Facility under DOS/360. Official announcement of this support is contained in P-Letter #67-51 which is part of the material accompanying this letter.

This new policy should be covered thoroughly at Branch Office meetings. To assist your Branch Managers in presenting this new policy, we have attached a Questions and Answers sheet which should be reproduced and distributed at the meetings.

The implementation of this policy and its success as an aid to both the customer and IBM depends heavily on effective communications and proper control. I am counting on each of you to insure success of this significant new approach to our business.
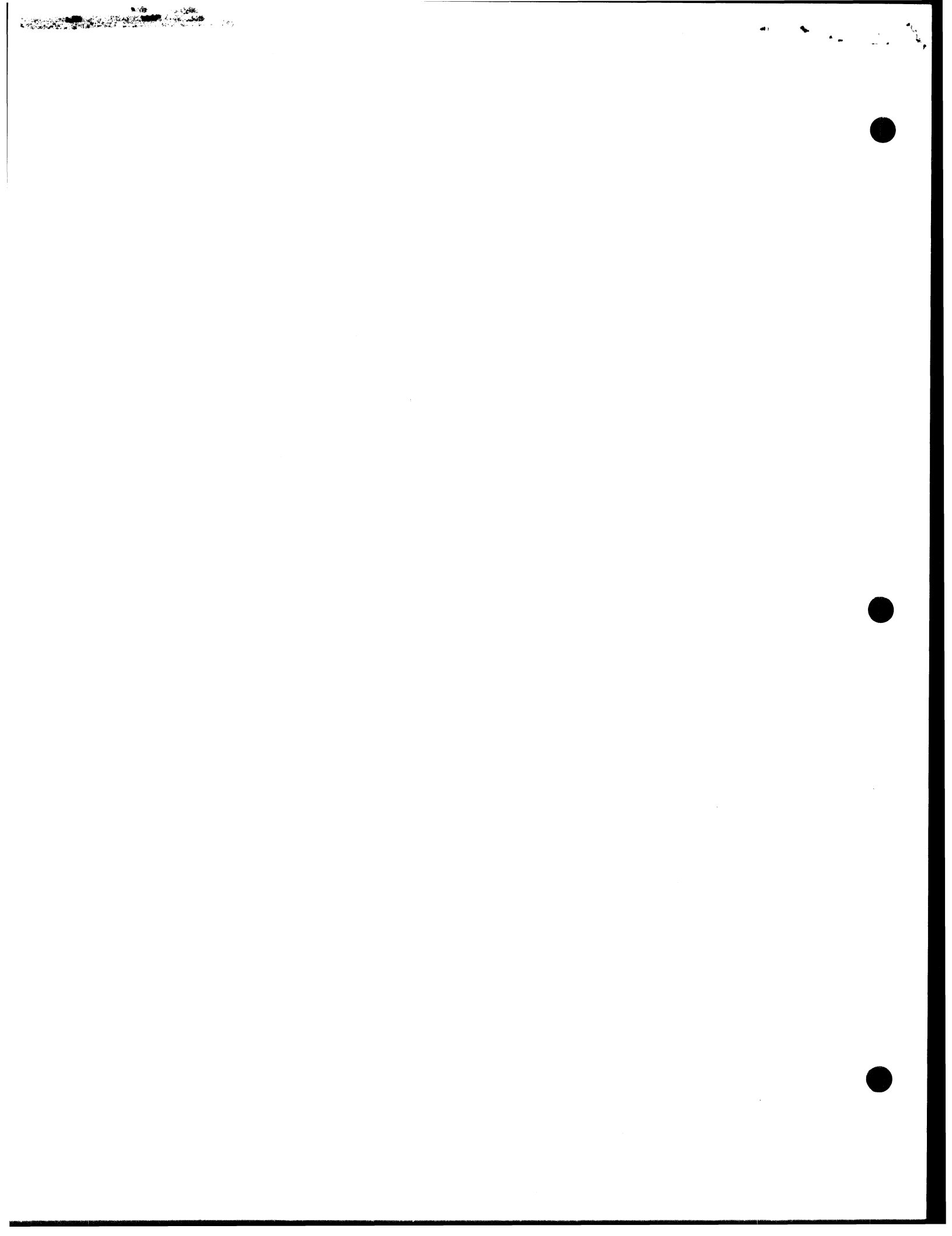

  *Subject to ultimate responsibility of administration of the policy by the country DP Sales Manager.

John Fahey
Director of DP Marketing

Attachments: Questions and Answers, Programming Announcement Letter P67-51

Distribution: Area, Regional, and Country DP Sales Managers

STATEMENT OF INTENT QUESTIONS AND ANSWERS

1. Will Intent Statements precede all Programming Announcements?

No. Statements of Intent will be used selectively. Our objective is only to announce programming systems after extensive testing. Statement of Intent will be considered for release only when:

a. The equipment to be supported has been announced.

b. The actual Programming System Announcement would be premature, misleading, and not in the best interests of the customer or IBM.

c. We would not be properly advising our customers by not disclosing our intent.

2. Will Statements of Intent be used on equipment?

There is no Statement of Intent policy for equipment. The development cycle for equipment permits announcement sufficiently in advance of manufacture and delivery so that the customer has adequate time for planning.

3. Will the Statement of Intent be used for Type II programs?

At present, we do not plan to use Intent Statements on Type II programs.

4. Is there any change in the status of presently announced programming support?

There are no plans to alter or convert present Programming Announcements to Statements of Intent.

5. What will be the time gap between a Statement of Intent and delivery?

While we cannot predict every programming development project, our objective is that there shall be normally less than 9 months between Statement of Intent and Programming Announcement and less than 24 months between a Statement of Intent and delivery. However, unless target dates are released in the Statement of Intent, the 9 and 24 months should not be interpreted as an implied schedule nor should inference of any target date be made.

6. What backs up an IBM Statement of Intent?

An Intent Statement is only issued when the initial design work has been accomplished, and when funding for the program has been approved. Thus, the Intent Statement is backed up by a fully concentrated effort by the company to attain those objectives embodied in the Intent Statement.

7. Does the release of a Statement of Intent assure the subsequent publishing and availability of a Programming Announcement?

No. As the disclaimer states, the Statement of Intent may be withdrawn.

8. Why does IBM believe it should introduce an Intent Statement to its policies?

We believe that it is unrealistic to precisely schedule invention and in new technology areas especially to make Programming Announcements early in the development cycle. IBM wishes to be completely realistic and is adopting a Statement of Intent policy so that there is planning information available and, upon a successful completion of a Statement of Intent effort, is in a position to publish achievable Programming Announcements.

9. Is IBM going to do more testing of the architecture and design of a program before making Programming Announcements?

Not necessarily more testing, but testing on a more comprehensive basis, e.g. testing against a more detailed design.

10. As Programming Announcements will be preceded by more comprehensive testing and in some instances by Statements of Intent as well, will IBM now guarantee such Programming Announcements?

No. A guarantee will not be possible. However, the company will, as in the past, continue in its efforts to achieve the stated objectives of Programming Announcements.

11. How is the disclaimer to be used?

In any discussions with customers or prospects on intent information, the IBM sales representative must clearly state that intent information represents only technical objectives. All proposal or installation planning discussions with customers or prospects on intent information must be documented. The following disclaimer, along with the information indicated in the Guidelines, must appear in this or any other documentation on intent information:

> "This information represents the technical intent of IBM with respect to this programming product. It is possible that the objectives will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied."

12. Do Sales Representatives need permission to use intent information?

The Country Sales Manager must approve all cases when an intent statement is used in a proposal or installation plan.

13. How stable is an equipment configuration based on intent information?

Configuration information in a Statement of Intent will be based on the best technical judgment at that stage of the programming development cycle. The Statement of Intent represents specific target objectives that we are striving to meet. There should be minimum dependency on the intent information, a sound understanding of the risks outlined in the disclaimer and alternative or contingency plans in event that the objectives change or the programming system is not delivered.

14. Should the customer order on a Statement of Intent?

This is essentially a decision for the customer since he must recognize and accept the inherent risks of unannounced support. He should have alternatives available to prevent later cancellations and deferrals.

15. May proposals be submitted based solely on Statement of Intent information?

No. As stated in the Guidelines, IBM proposals which are submitted containing Statement of Intent information must contain installation plans not dependent upon the technical objectives or target schedules embodied in a Statement of Intent.

16. Can orders based on proposals containing Statements of Intent be credited?

Orders based primarily on Statement of Intent information are not considered sound business and will not be credited. Where there is minimum dependency on such support and Systems Assurance review confirms practical alternatives exist, with which the customer agrees, creditable orders can be achieved.

17. What are Systems Assurance procedures in relation to an Intent Statement?

All system proposals will continue to be subject to a Branch Office Systems Assurance review and those which include equipment on the designated list will be subject to additional review at the country level. When intent information is used, the Systems Assurance reviews at both the branch and country levels will insure that the intent information is presented properly with the appropriate disclaimer and that the proposed installation plan is consistent with the intended as well as the announced support.

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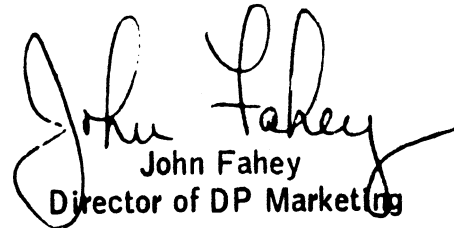
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John Fahey
Director of DP Marketing

Release Date: June 7, 1967

Distribution: All Areas

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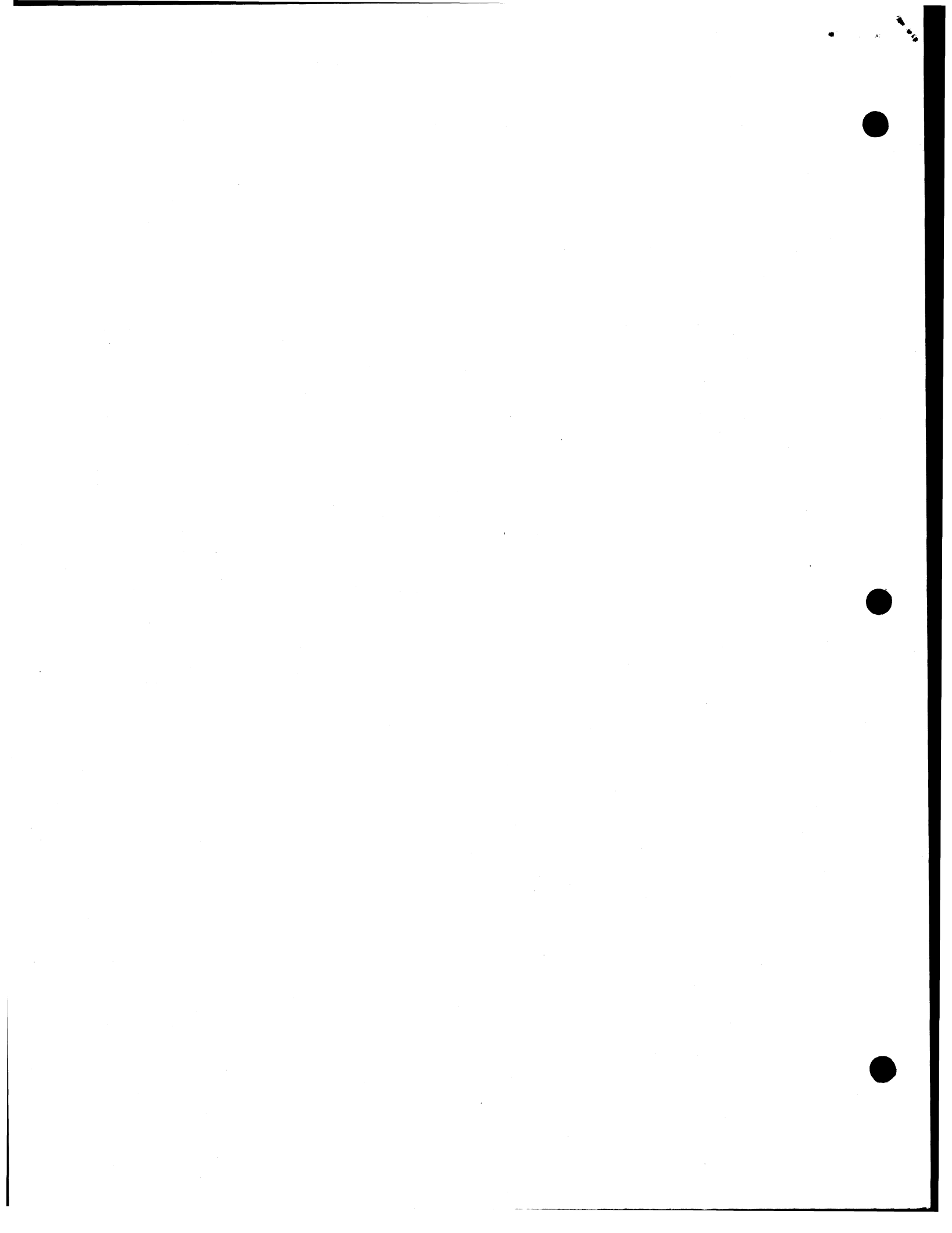
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IBM 1400 Autocoder to COBOL Conversion Aid Program (ACCAP)

Today, IBM is announcing a new conversion aid to assist customers planning to convert their 1400 series Autocoder or SPS programs to System/360 COBOL. The program will be available from PID in July 1967.

CONTENTS
1400 Autocoder to COBOL Conversion Aid Program (ACCAP) ... an application program to be available July 1967.
Published by DP Sales Publishing Services, WTHQ

Description

ACCAP is a System/360 Application Program which accepts as input source statements written in Autocoder or SPS for the 1401, 1410, 1440, 1460, and 7010 systems. It produces System/360 COBOL statements when possible and diagnostic messages in the case where the program is unable to complete the translation.

ACCAP is an extension of IBM's continuing effort to supply tools to facilitate transition to System/360. Its purpose is to reduce the costs and manpower requirements for converting 1400 series programs to System/360 COBOL by:

1. Recoding to COBOL as many Autocoder statements as possible and identifying those statements that cannot be translated.

2. Generating syntactically correct COBOL which reduces coding and clerical errors.

3. Automatically producing a deck of the generated COBOL statements thus reducing keypunching requirements.

4. Providing a facility to convert to a problem oriented language that can be easily used as a new base for future additions, changes, and development.

5. Retaining the original program logic and symbols to facilitate the conversion to COBOL and the testing of the new program.

6. Providing documentation and diagnostics for the new COBOL program in terms of the original Autocoder program.

ACCAP performs the conversion on a statement-for-statement basis; therefore, the generated code may not be as optimum as COBOL coding written expressly for System/360. Where the program is unable to translate the Autocoder (SPS) source statement, it will provide a diagnostic message. Thus a manual coding effort is required to complete the new COBOL source program prior to its compilation and testing.
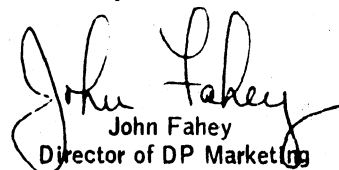
Special Sales Information

Before presenting ACCAP to the customer, the marketing representative should be completely informed as to the capabilities of the program, the objectives for which it is being developed, and the conditions under which it should be used. This information is contained in the Application Description Manual and in the slide presentation available in each branch office. This material will also supply information as to the execution of the program based upon development and testing experiences.

In addition, the marketing representative should insure that his customer properly evaluates ACCAP for his installation and recognizes his responsibilities as stated in the attached sales manual page (P 360A.27 - Customer Responsibility). It should also be recognized that customers new to COBOL will require education and guidance in the use of COBOL.

See the attached sales manual page and the Application Description Manual (H20-0352) for additional details.

For further information contact your Field Systems Center.

Note: Page 3 of the Application Description Manual contains a reference to two additional manuals for the program. Do not order either of these manuals from Mechanicsburg until their availability is announced in a Publication Release Letter.

John Fahey
Director of DP Marketing

Attachments [7]: P360A.13, P360A.17, P 360A.19, P 360A.25, P 360A.27, P 360S.9, and P 360T.3

Release Date: June 16, 1967

Distribution: All Areas

[A] DOS/360 QTAM (Audio)

The Queued Telecommunication Access Method (QTAM) under DOS/360 is being further expanded to include support for the 7770 Model 3 and 7772 Audio Response Units. This support provides for the receipt of coded data from a terminal and the transmission of an Audio answer to the same terminal. The 1001, 1092/1093, TOUCH-TONE① and Touch-Calling② telephones are supported terminals for the Audio Reponse Units.

Availability will be December 15, 1967.

DOS/360 QTAM can be used to implement major new applications, including any combination of QTAM supported terminals along with Audio Response. The terminal flexibility uniquely meets your customers on-line application requirement.

Three modes of operation for the Audio Response Units are:

1. Information Mode

   A "canned" audio message is sent to the terminal when communication is established between the terminal and the computer.

2. Inquiry Mode

   A single inquiry message is received from the terminal and processed by the user's program to determine the answer. The answer is sent to the Audio Response Unit which converts it to audio signals for the inquiring terminal.

3. Conversation Mode

   This mode of operation allows the communication to consist of several inquiry and audio answer messages.

The audio lines are enabled and disabled under Program Control.

Publications

IBM System/360 Disk Operating System QTAM Message Control Program, Specifications for a Future Version, C30-5004-0③ ... IBM System/360 Disk Operating System Queued Telecommunication Access Method Message Processing Program Services, C30-5003-2③.

Minimum System Configuration

32K bytes of main storage ... Standard Instruction Set ... Storage protection ... One selector channel for system residence ... One multiplexer channel for communications control units ... One card reader ④ ... One card punch ④ ... One printer ④ ... One 1052 Printer Keyboard ... One direct access device for system residence and for 7772 vocabulary file ④ ... 7770 Model 3 or 7772 attached to the multiplexer channel ... Communication equipment necessary to interface to the communication line.

Devices Supported

2701 Data Adapter Unit
   Feature (#1302, 1303) Auto Call
   Terminals - 1030, 1050, 1060, 2740, AT&T 83B3, AT&T
      Models 33/35 (8-Level code), Western Union 115A, and 2260
      Display (remote) with 2848 Control Unit.

2702 Transmission Control Unit
   Feature #1290 Auto Call Adapter,
      #7918 - 1032 Attachment
   Terminals - 1030, 1050, 1060, 2740, AT&T 83B3, AT&T
      Models 33/35 (8-Level code), and Western Union 115A.

2703 Transmission Control Unit
   Feature #1315 Auto Call Adapter
   Terminals - 1030, 1050, 1060, 2740, AT&T 83B3, AT&T
      Models 33/35 (8-Level code), Western Union 115A.

7770 Audio Response Unit Model 3
   Terminals - 1001, 1092/1093, and TOUCH-TONE① and Touch-Calling② telephones.
7772 Audio Response Unit
   Terminals - 1001, 1092/1093, and TOUCH-TONE① and Touch-Calling② telephones.

CONTENTS

DOS/360 QTAM ... Expanded to include 7770/7772 units. [A]

BPS/360 FORTRAN ... Basic Machine Readable material distributed on a DTR. [B]

Published by DP Sales Publishing Services, WTHQ

[B] System/360 Basic Programming Support (BPS/360)

Submittal of a 2400 foot reel of magnetic tape is no longer necessary when ordering the BPS/360 FORTRAN IV program, 360P-F0-031. The Program Information Department will now supply the Basic Machine Readable material of this program on a DTR.

If either 9- or 7-track DTR at 800 bpi or 9-track DTR at 1600 bpi is not specified on the program order card, 9-track DTR at 800 bpi will be supplied.

John Fahey
Director of DP Marketing

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated material may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the latter, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments as sources of information or for manuals etc. should be understood to mean the comparable WT Department.

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] All references made to Engineering Changes required for programs should be verified with the local CE Branch Office. Although E/C requirements are identical for WT and IBM, E/C availability dates and shipping schedules may differ.

① TOUCH-TONE -- trademark of the Bell System.
② Touch-Calling -- term used by General Telephone System.
③ Availability of this manual will be announced in the weekly publications release.
④ See Control Program Input/Output Chart on "Programming" Page P 360N.8 (May 1967 Revision) for acceptable units and possible substitutions. The direct access device is required for 7772 Vocabulary File only if a 7772 is ordered.

IBM World Trade Data Processing

STATEMENT OF INTENT

Operating System/360 with Binary Synchronous Communications

It is the intent of the IBM Corporation to provide Operating System/360 programming support for Binary Synchronous Communications under the Basic Telecommunication Access Method (BTAM) with the following configurations:

Point-to-Point, non-switched and switched lines:
- System/360* to System/360*
- System/360* to 2780 Data Transmission Terminal
- System/360* to 1130 (Binary Synchronous Communication Adapter)
- System/360* to Model 20 (Binary Synchronous Communication Adapter)

Multipoint, non-switched lines:
- System/360* to 2780
- System/360* to 1130 (Binary Synchronous Communication Adapter)
- System/360* to Model 20 (Binary Synchronous Communication Adapter)

OS/360 BTAM Binary Synchronous Communications support will communicate with other System/360s using DOS/360 BTAM, OS/360 BTAM, and BOS/BPS/360 Binary Synchronous Communication support.
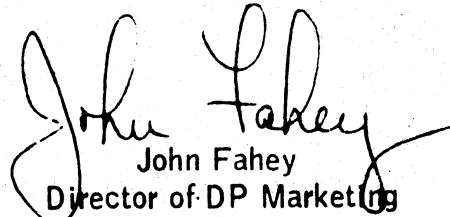
It is our intention to deliver OS/360 BTAM - Binary Synchronous Communications support for System/360* to System/360* or 1130 on July 31, 1968. System/360* to Model 20 support is planned to be available when the Model 20 CIOCS is available. Information as to the delivery of System/360* to 2780 support (6-Bit Transcode and EBCDIC) is planned to be available 3Q 1967.

Additional information, including storage estimates, is planned to be available 3Q 1967; with the exception of System/360* to Model 20, for which additional information is planned to be available November 30, 1967.

This information represents the technical intent of IBM with respect to this programming product. It is possible that the objective will not be met. The program is subject to revision or withdrawal and no commitment or warranty is expressed or implied.

Guidelines for using the Statement of Intent appear on the reverse side.

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS"

John Fahey
Director of DP Marketing

*Model 30, 40, 50, 65, 67 (operating in 65 mode) or
75 via a 2701 equipped with a SDA-Type II adapter
or a 2703 equipped with Binary Synchronous features.

Release Date: June 16, 1967
Distribution: All Areas

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IBM

IBM World Trade **Data Processing**   STATEMENT OF INTENT

System/360 Model 20 Binary Synchronous Communications Adapter

It is our intent to support the System/360 Model 20 Binary Synchronous Communications Adapter (BSCA) via Communications Input/Output Control System (CIOCS) Programming Systems for Card, Tape and Disk configurations. The Model 20 BSCA-CIOCS supports communications between the Model 20 and other Model 20s equipped with a BSCA or larger models of System/360 systems equipped with 2701 or 2703 Binary Synchronous Communications capability, and supported by DOS/360 BTAM with BSC or OS/360 BTAM with BSC Programming Systems.
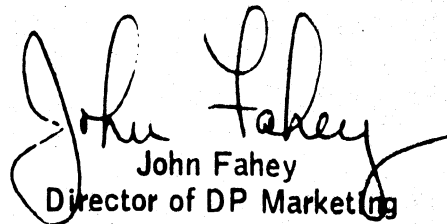
The Model 20 BSCA-CIOCS is intended to permit transmission in EBCDIC or ASCII code and transparent transmissions. Point-to-point operation on switched or leased communication networks and multi-point operation -- as a slave station -- on leased communication networks will be possible.

Intended minimum storage configurations required are: 8K for Card Systems and 12K for Tape and/or Disk Systems.

IBM plans to provide additional information regarding Model 20 BSCA-CIOCS programming systems support by November 30, 1967. Availability is planned for November 15, 1968.

This information represents the technical intent of IBM with respect to this product. It is possible that the objective will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied.

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John Fahey
Director of DP Marketing

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IBM

IBM World Trade Data Processing

STATEMENT OF INTENT

IBM System/360 Basic Operating System (BOS/360)
and Basic Programming Support (BPS/360)
with Binary Synchronous Communications

It is the intent of the IBM Corporation to provide BOS/360 and BPS/360 programming support for Binary Synchronous Communications in EBCDIC code for an IBM System/360* via a 2701 equipped with a SDA-Type II adapter to another System/360* via (a) a 2701 equipped with a SDA-Type II adapter or, (b) a 2703 equipped with Binary Synchronous features. This support is for point-to-point, non-switched and switched lines.

BOS/BPS/360 Binary Synchronous Communications supports communications with other System/360s using DOS/360 BTAM, OS/360 BTAM, and BOS/BPS/360 Binary Synchronous Communications support.
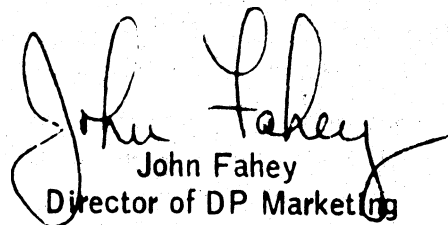
It is our current intention to deliver the BOS/360 Binary Synchronous Communications support on March 31, 1968, and the BPS/360 Binary Synchronous Communications support on January 31, 1968.

The minimum core storage requirement will be 16K bytes.

Additional information is planned to be made available 3Q 1967.

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John Fahey
Director of DP Marketing

* Model 30, 40, 50, 65, 67 (operating in 65 mode), or 75.

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

Release Date: June 16, 1967
Distribution: All Areas

Statement of Intent Guidelines

You must insure that:

1. In any discussions with customers or prospects on intent information, the IBM representative makes clear to the customer that intent information represents <u>only</u> technical objectives and does not constitute any announcement of a programming system.

2. All proposals or installation planning discussions with customers or prospects on intent information must be documented to the customer. The following disclaimer must appear in this or any other documentation on intent information:

   "This information represents the technical intent of IBM with respect to this programming product. It is possible that the objectives will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied."

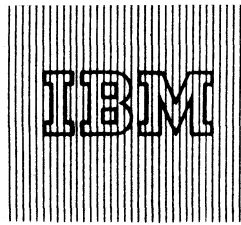   The proposal section containing the Statement of Intent must be entitled "Statement of Intent".

   The description of the Statement of Intent which precedes the disclaimer must contain no omissions or rephrasing of the information contained in the DPD HQ Statement of Intent release that could result in misrepresentation to the customer.

   The following sentence should be included after the disclaimer: "It should be clear that this Statement of Intent is not a Programming Announcement and that a Programming Announcement may or may not be forthcoming."

3. Orders secured from proposals in which intent information appears must contain installation plans not dependent upon the technical objectives or target schedules embodied in a Statement of Intent.

4. Installations having an interest in and probable use for the intent support must have that fact documented in the Installation Information System. The Program Planning form should be used to record the index numbers of the Statement of Intent (obtained from monthly IBM Program Support Master List). The required date for firm specifications should be entered in the Test Date column and the required availability date in the Install Date column.

IBM

Program Announcement

S/360 Disk Operating System BTAM with 1130
Binary Synchronous Communications (BSC)

The application flexibility of DOS/360 BTAM is being expanded to include the IBM 1130
Synchronous Communications Adapter.

Availability: September 20, 1967

Features: Code flexibility, transmission efficiency, and increased functional capabilities,
inherent in the new binary synchronous technology, will be available for communication
between the IBM 1130 and System/360 using DOS/360 BTAM.

   DOS/360 BTAM provides the following binary synchronous line control functions:

     System/360* - to - IBM 1130
        Contention (pt to pt)
        Headers and normal text
        Inquiry and alternating replies
        Full Transparent Text
        Dial
        Disconnect
        Multipoint (centralized)

   The 2701/3 features supported for use with the IBM 1130 are:

        EBCDIC
        Full Transparent Data
        Auto Call/Answer Features
        Dual Communications Interface
        Autopoll
        Note: The 2870 Multiplex Channel when used on the 2065-2075
        must be at EC 705801.

Binary Synchronous Communications (BSC) capability on the 1130, announced in Product
Announcement 267-24 is program supported by two additional subroutines in the 1130 Sub-
routine Library. These subroutines provide point-to-point and multi-point communication
with DOS/360 BTAM in System/360 Models 30, 40, 50, 65, and 75.

Devices Supported: 1130 Synchronous Communications Adapter (#7690). See P67-9
for appropriate features supported on the 2701 and 2703.

Publications: System/360 Disk Operating System Extended Basic Telecommunications
Access Method, C30-5001-3 ... 1130 Synchronous Communications Adapter Subroutines,
C26-3706-2.

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

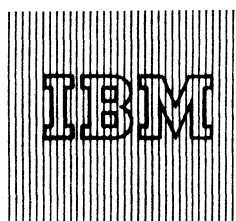* Model 30, 40, 50, 65 or 75

John Fahey
Director of DP Marketing

Release Date: June 16, 1967
Distribution: All Areas

P67-57

IBM System/360 Text Processor

This system consists of two application programs
-- COMPOSITION/360 and HYPHENATION/360.
The programs can be implemented in combination
with user-supplied programs and the full facilities
of DOS/360 to form the basis for a comprehensive text composition system.

CONTENTS

System/360 Text Processor ... two application
programs COMPOSITION/360 to be available
4Q 68 and HYPHENATION/360 2Q 68.

——— Published by DP Sales Publishing Services, WTHQ ———

Potential users of COMPOSITION/360 or HYPHENATION/360 or both are organizations
that transcribe textual information into the form required for final printing on composition
devices which can be attached directly to a System/360 or controlled indirectly (e.g.,
via magnetic tape or paper tape) from System/360.

COMPOSITION/360: This component program of S/360 Text Processor consists of
control and functional routines that:

1. Handle disk-resident text and text format control input.

2. Perform line justification and formatting functions.

3. Produce generalized disk output records ready for input to user-supplied
   composition device oriented routines.

The program will be available 4Q 68 on System/360 models supported by DOS/360 with
a minimum of 64K and two 2311 Disk Drives.

Reference Material: Application Description, "IBM S/360 Text Processor - COMPOSI-
TION/360," E20-0256 (do not order from Mechanicsburg until availability is announced
in a Publication Release Letter). Preliminary copies may be obtained from Printing and
Publishing Department 840, DPD HQ.

HYPHENATION/360: This component program of S/360 Text Processor consists of con-
trol and functional routines that provide for division of words in text-processing applica-
tions where addition of word syllables to a line to meet justification requirements is preferable
to forcing the line to end with a complete word. This capability is provided in the form of
a program module which can be linked with a user's S/360 text-processing program or the
COMPOSITION/360 module of S/360 Text Processor. This program will be available
2Q 68 for System/360 models supported by DOS/360.

Reference Material: Application Description, "IBM S/360 Text Processor - HYPHENA-
TION/360," E20-0257 (do not order from Mechanicsburg until availability is announced
in a Publication Release Letter). Preliminary copies may be ordered from Printing and
Publishing Department 840, DPD HQ.

See the back of this letter for the text that will appear in the sales manual.

For further information contact your Regional Printing and Publishing Industry Marketing
Representative.

John Fahey
Director of DP Marketing

Release Date: June 20, 1967

Distribution: All Areas

Text Processor -- COMPOSITION: With user-supplied programs in combination with the full facilities of DOS/360, this program forms the basis for a comprehensive text-composition system.

Organizations that transcribe textual information into the form required for final printing on composition devices that can be attached directly to System/360, or controlled indirectly (e.g., via magnetic tape or paper tape) from System/360, are potential users.

COMPOSITION/360 consists of control and functional routines that accept input from a user-prepared disk-resident file. The disk-resident file must contain the copy to appear in print and instructions describing the desired printing format. The program will produce generalized output records and store them in a specified disk area. These output records will contain the original copy in the form of justified lines arranged according to the graphic and stylistic requirements described by the user, with the input format instructions and the functional format control information necessary to completely define the printed appearance of the lines. The user must provide routines to retrieve this generalized information from the disk area, convert it into coding acceptable to the specific composition device on which final printing will occur, and write it to the appropriate systems output device. If word division capabilities are required, COMPOSITION/360 uses the HYPHENATION/360 component program of S/360 Text Processor (see Application Description Manual, E20-0257).

Although COMPOSITION/360 is programmed to run in one partition under DOS/360, it is designed with the intent that the user-supplied I/O handling and composition device conversion routines occupy the Foreground I partion, with COMPOSITION/360 occupying either the Foreground II (if independent user background programs are desired) or Background partition (if in a dedicated text-processing environment). Implementation of an operational S/360 Text Processor, which consists of COMPOSITION/360, HYPHENATION/360 (if required), and user-supplied I/O and composition device conversion routines, requires two partitions of DOS/360, with all user-supplied routines occupying Foreground I. The two partition operational concept for S/360 Text Processor is designed to gain maximum utilization of the multi-programming features of DOS/360 in effecting maximum program overlap and thruput, while allowing non-related programs in the Background partition to run concurrently with and independently of normal text processing operation. This feature should extend the productivity of S/360 since an installation may now utilize periods of low system activity for other data processing while providing maximum response to text-processing service requests.

Features: Two format control languages are supported to allow user flexibility in utilizing maximum capabilities of different composition output devices and to permit the transition of existing 1130 or 1620 Type Composition installations to S/360 with minimum operator training ... COMPOSITION/360 is intended to provide functional capabilities which are common to most text composition applications, thus forming the base from which the user can integrate the facilities of System/360 and S/360 Disk Operating System, with his specific installation requirements ... the composition device-independent output records produced by the program are designed to permit user utilization of the maximum capabilities of a broad range of composition output devices without requiring a separate COMPOSITION/360 program run for each device. This could be advantageous, for example, with a system in which proofing operations are desired on an output device different from the final composition device ... COMPOSITION/360 can be used to process text input originating from different systems input devices since it is designed to operate independently of I/O facilities; this input media transparency is effected by user code conversion of the input data stream prior to writing it on to the disk file for input to COMPOSITION/360.

Customer Responsibilities: COMPOSITION/360 is intended to provide users with the basic functional program components of a text-processing system which uses the facilities of S/360 and S/360 Disk Operating System. To produce an operational system, the user must provide additional program modules which augment the capabilities of COMPOSITION/360 and tailor the S/360 composition input/output sub-system to his own requirements. For a minimum operational system, user programming responsibility encompasses the following general areas:

1. Text Input Sub-system - Routines which select, initiate and handle the reading in of textual and format control information from the specific systems input devices selected by the user for that function.

2. COMPOSITION/360 Input File Preparation - Routines which place the textual and format control information in the designated disk file input area in the proper format where it then becomes input to COMPOSITION/360.

3. COMPOSITION/360 Output File Relief - Routines which relieve the completed generalized COMPOSITION/360 output records from the designated file output area after completion of processing.

4. Composition Device Dependent Functions - Routines which tailor the generalized COMPOSITION/360 output records to the specific composition device on which the copy is to be printed or displayed.

5. Text Output Sub-system - Routines which select, initiate and handle outputting of tailored device dependent records to the specific systems output devices selected by the user for that purpose.

In summary, the user will generate an operational system by combining his own routines with the facilities provided with COMPOSITION/360 and S/360 Disk Operating System.

Programming System: COMPOSITION/360 is written in DOS Assembler Language and operates under control of S/360 Disk Operating System.

Minimum System Requirements: System/360 Model F Processing Unit (64K bytes) with Decimal Arithmetic, Interval Timer, and one Selector Channel, 1052 Printer-Keyboard with CPU attachments, 2841 Control Unit, and one 2311 Disk Storage Drive. These components are in addition to DOS/360 requirements of one 2311 Disk Storage Drive, one card reader*, one card punch*, and one printer*. Note that

this minimum machine configuration does not include the text input/output sub-system devices necessary to implement an operational text processing system (e.g., magnetic tape, paper tape, data entry terminals, display terminals, etc.). It is the responsibility of the user to select these sub-system components and provide the necessary support programming based on his composition system requirements.

The core residence design objective for COMPOSITION/360 is 30K bytes. This includes the 10K bytes residence requirement of HYPHENATION/360 since most composition applications will require word division capabilities. The remaining 34K bytes of storage in a minimum system is allocated by the user to the functions of the DOS/360 Control Program, the necessary user-supplied I/O and composition device dependent routines that augment COMPOSITION/360, and background programs if desired.

Reference Material: Application Description (E20-0256).

For further information contact your Regional Printing and Publishing Industry Marketing Representative.

*See System/360 Disk Operating Guide (C24-5022) for acceptable units and possible substitutions.

Text Processor -- HYPHENATION: Provides fast and accurate division of words for text processing applications where the addition of word syllables to a line to meet justification requirements is preferable to forcing the line to end with a complete word. This hyphenation capability is provided in the form of a module which can be linked with a user's System/360 text-processing program or the COMPOSITION/360 module of the IBM System/360 Text Processor.

Through program linkage, HYPHENATION/360 accepts a word up to 63 characters in length from the user's program and determines the division points. The word, with the division points indicated, is returned to the user program where the portion to be retained on the line can be selected based on the user's graphic requirements.

The program assumes the burden of all hyphenation decisions, regardless of whether the word to be divided contains alphabetic characters only, or combinations of the alphabetic characters, numerals, and/or punctuation.

A word presented to the program normally consists entirely of alphabetic characters. However, lengthy compound words or phrases, alphameric words, and words containing punctuation can be divided by HYPHENATION/360.

Features: Modular design concept permits easy inclusion of HYPHENATION/360 in any user text processing program ... broad statistical data base used to generate probabilities implies higher accuracy through a wide range of words ... exception word dictionary concept with IBM-supplied utility programs provides ability to tailor HYPHENATION/360 to highly specialized word lists (e.g., legal, medical, scientific) ... file and program layout based on statistical analysis ensures faster hyphenation of commonly used words ... dual operating mode (i.e., last-to-fit or all-points hyphenation) provides fast throughput coupled with the flexibility to accommodate a wide variety of user-required graphic considerations ... hyphenation of all words, including those containing numerals, punctuation, special characters, text hyphens, etc. ... file packing techniques provide more usable system resources for user-generated programs ... system utility programs provide efficient user maintenance of the exception word dictionaries.

Use: Any Text Processing application which requires hyphenation capability is a potential user of HYPHENATION/360. Among others, newspapers, book publishers, technical manual publishers, and in-house publishers can significantly reduce the time and programming effort required to implement computerized text composition.

Customer Responsibilities: Link HYPHENATION/360 with the user text-processor program ... provide periodic maintenance of exception word dictionaries through utility programs ... provide routines for the user text processor program to initialize the linkages to and from HYPHENATION/360; when HYPHENATION/360 is used with COMPOSITION/360, these linkages are provided in COMPOSITION/360.

Programming Systems: The program will be coded in DOS Assembler Language and will operate under System/360 Disk Operating System.

Minimum System Requirements: System/360 Model E (32K) CPU, in combination with the minimum DOS/360 requirements of one 2311 Disk Storage Drive, Card Reader, Card Punch, Printer, and 1052 Printer-Keyboard as described in System/360 Disk Operating Guide (C24-5022).

The core residence design objective for HYPHENATION/360 is 10K and the user need only reserve 10K bytes in his text-processor program for the inclusion of HYPHENATION/360. However, since one of the utility programs operates under DOS/360 and utilizes the HYPHENATION/360 module, the minimum machine configuration is dictated by the core requirement of this utility program in combination with the DOS/360 Control Program requirements. Core residence of the utility program is only required when initiating a dictionary update and is independent of normal text processing operation.

Reference Material: Application Description (E20-0257).

For further information contact your Regional Printing and Publishing Industry Marketing Representative.

IBM System/360 Continuous System Modeling Program (CSMP)

The S/360 Continuous System Modeling Program provides a flexible and powerful simulation tool for investigating the behavior of continuous systems. The program is now available (360A-CX-16X).

Description: Simulation is a well established tool for investigating phenomena ranging from information flow in business organizations to the dynamic behavior of complex continuous systems. The former often have been treated as discrete processes on digital computers through the use of such discrete system simulation programs as the General Purpose System Simulator (GPSS). By contrast, the continuous dynamic systems that usually concern engineers and scientists have been traditionally simulated on analog computers.

Recently, interest has grown in the application of digital computers to continuous system simulation. It has been recognized, however, that many engineers and scientists working in this area have no desire to learn digital computer programming. The need for a problem-oriented program designed to facilitate the preparation of problems for solution on large-scale digital machines was clearly indicated. S/360 CSMP is intended to help satisfy that need.

For many problems, S/360 CSMP obviates the need to use an analog computer facility. It allows simulation problems to be prepared directly and simply from either a block diagram representation or a set of ordinary differential equations.

Input and output are facilitated by means of user-oriented control statements. A fixed format is provided for several output options. Convenient means are available for accomplishing iterative simulations of the type required in parameter optimization studies. With few exceptions, parameter data, run control data, and connection statements can be prepared in any order for automatic sequencing by the program. Through its several features, S/360 CSMP permits the user to concentrate upon the phenomenon being simulated rather than the mechanism for implementing the simulation.

Application areas include engineering design and analysis, physical science, bio-medical research, and technical education. The program should be considered wherever dynamic physical processes are being investigated in the aerospace, consultant, manufacturing, federal, medical, process, and education industries.

See the back for the text that will appear in the sales manual.

For further information contact your Regional Manager of Scientific Marketing.

John Fahey
Director of DP Marketing

Release Date: June 23, 1967

Distribution: All Areas

Continuous System Modeling Program (CSMP):   Provides a flexible and powerful simulation tool for investigating the behavior of continuous systems.

(360A-CX-16X)

Description: Simulation is a well established tool for investigating phenomena ranging from information flow in business organizations to the dynamic behavior of complex continuous systems. The former often have been treated as discrete processes on digital computers through the use of such discrete system simulation programs as the General Purpose System Simulator (GPSS). By contrast, continuous dynamic systems that are the usual concern of engineers and scientists have been traditionally simulated on analog computers. However, as the systems under investigation have become more and more complex, and the need for accuracy and flexibility has increased, interest has grown in the application of digital computers to continuous system simulation. It has been recognized, however, that many engineers and scientists working in this area have no desire to learn digital computer programming. The need for a problem-oriented program designed to facilitate the preparation of problems for solution on large-scale digital machines was clearly indicated. S/360 CSMP is intended to help satisfy that need.
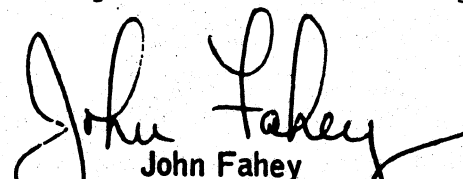
For many problems, S/360 CSMP obviates the need to use an analog computer facility. It allows simulation problems to be prepared directly and simply from either a block diagram representation or a set of ordinary differential equations. It provides a basic set of functional blocks with which the components of a continuous system may be represented and accepts application-oriented statements for defining the connections between these functional blocks. This block modeling technique is common to engineering and scientific practice. S/360 CSMP also accepts FORTRAN statements, thereby allowing the user to readily handle nonlinear and time-variant problems of considerable complexity. Included in the basic function set are conventional analog computer components (i.e., integrators and relays, plus many special purpose functions like delay time and limiter functions). This basic library is augmented by the FORTRAN library. In addition, special functions can be defined by the user, thereby allowing S/360 CSMP to take on the characteristics of a language oriented to any particular special purpose field in continuous system simulation. Input and output are facilitated by means of user-oriented control statements. A fixed format is provided for printing (tabular format), print-plotting (graphic format), and preparation of a data set at selected increments of the independent variable. Convenient means are available for terminating a simulation run with a sequence of computations and logical tests. These can be designed to test run responses and define run control conditions for accomplishing iterative simulations of the type required in parameter optimization studies. With few exceptions, parameter data, run control data, and connection statements can be prepared in any order for automatic sequencing by the program. Through these features, S/360 CSMP permits the user to concentrate upon the phenomenon being simulated rather than the mechanism for implementing the simulation.

Features: A problem can be prepared directly from either a functional block diagram or a system of ordinary differential equations ... the input language is application oriented and free form ... the statements may be generally written in any order, and, by user option, may be sequenced by the program to establish the correct information flow ... FORTRAN statements can be intermixed with the S/360 CSMP simulation statements ... the method of integration can be chosen from several standard options provided in the program ... output is provided automatically in a fixed format for all output options ... thirty-four standard functional blocks are provided, and, in addition, the user can add his own functions to the library ... simulation runs are completely repeatable; problem decks may be conveniently stored for future reruns ... the entire S/360 CSMP simulation may be controlled by a sequence of conventional FORTRAN statements.

Special Sales Information: Application areas include engineering design and analysis, physical science, bio-medical research, and technical education. Interested customers may be found in the aerospace, consultant, manufacturing, federal, medical, process, and education industries. The application should be considered wherever dynamic physical processes are being investigated. It should be brought to the attention of potential customers considering acquisition or enlargement of analog computer-facilities. Typically, the program might be used by a control engineer to study the effectiveness of various control system designs, simulating both the process to be controlled and the various systems. A physiologist might use the application for simulation of a model of the cardio-vascular system.

Use: The user can work from either an analog block diagram or a system of ordinary differential equations to prepare the language statements that are input to a translator. The translator converts these application oriented language statements into a FORTRAN subroutine which is automatically compiled and executed to accomplish the simulation and specified output of results.

Customer Responsibilities: The user must represent the phenomenon to be simulated by either an analog block diagram or a system of ordinary differential equations. Then the input language statements must be prepared and punched on cards for input to the application program. Familiarity with basic FORTRAN is helpful, but not necessary. Special functions may be defined either through FORTRAN programming or simply through a macro capability which permits the combination of individual library functions into larger functional blocks. A customer-prepared plotting program can be used with the output data file to obtain graphic output on any particular plotting equipment.

Programming Systems: FORTRAN IV (E) is used as the source language for approximately 95% of the program; operations not readily performed in FORTRAN IV (E) are coded as subroutines in System/360 Assembler Language. All routines operate under OS/360.

Minimum System Requirements: The program will require a minimum of 102K bytes of storage (excluding that required by OS/360), the Standard Instruction Set, and the Floating-Point Option. In addition to the I/O units needed by the Operating System/360 for FORTRAN IV compiling, the program will require three logical utility units, one of which must be a Direct Access Storage Device (DASD). The other two may be portions of the DASD, or may be portions of other DASDs or magnetic tape drives.

Basic Program Material:

Publications* -- Users Manual (H20-0367) ... Operators Manual (H20-0368).

Documentation -- Application Directory.

Machine Readable** -- Object modules and sample problem are available on one 9-track DTR at either 800 BPI or 1600 BPI.

Optional Program Material:

Machine Readable** -- Source modules are available on one 9-track DTR at eith 800 BPI or 1600 BPI.

Additional Program Support Material: Application Description (H20-0240) ... System Manual Y20-0111.

Reference Material: Application Description for the 1130 Continuous System Modelin Program (H20-0209).

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering this material, the requester must indicate the distribution medium required on the back of the program order card. If not specified, 9-track 800 BPI will be forwarded.

DTRs will be provided by PID; no tape submittal is required.

For further information contact your Regional Manager of Scientific Marketing.

[A]   IBM Synchronous Transmit-Receive Access Method for OS/360

This program is now available (360A-SE-33X). The access method provides macro language support for the transmission and reception of data using the IBM 2701 Synchronous Data Adapter – Type I.

Special Sales Information

. The speeds at which STR transmission operates make it feasible for a customer to input batched data from remote terminals for centralized processing and return processed data to the same or other remote locations.

. CPU to CPU transmission is supported via the 2701 Synchronous Data Adapter – Type I.

See the back for the text that will appear in the sales manual.

Contact your Regional Programming Systems Marketing Representative for further information.

[B]   IBM Synchronous Transmit-Receive Access Method for DOS/360

This program is now available (360A-SE-32X). The access method provides a macro language support for the transmission and reception of data using the IBM 2701 Synchronous Data Adapter – Type I.

Special Sales Information:

. The speeds at which STR transmission operates make it feasible for a customer to input batched data from remote terminals for centralized processing and return process data to the remote locations.

. CPU to CPU transmission is supported via the 2701 Synchronous Data Adapter – Type I.

See the back for the text that will appear in the sales manual.

Contact your Regional Programming Systems Marketing Representative for further information.

[C]   Graphic Programming Services for FORTRAN IV under OS/360

OS/360 Graphic support is being extended to assist in application development using IBM 2250 Display Units. Graphic Programming Services for FORTRAN IV will be available April 30, 1968.

Graphic Programming Services for FORTRAN IV consist of subroutines and functions that enable a FORTRAN programmer to create a display on one or more 2250 Display Units under System/360 Operating System control. The displays produced consist of any figures that can be constructed with points, lines, or characters, including charts, circles, arcs, rectangles, etc.

The subroutines and functions available for use by the FORTRAN (level E, G, or H) programmer are called the graphic subroutine package. The subroutines are requested through use of CALL statements in a sequence that produces desired characters or graphic forms on the 2250 screen, and that provides two-way communication between the user's program and the 2250 operator (if desired).

In producing desired displays, the subroutines automatically:

Generate necessary graphic orders and data for the displays.

Transfer the generated orders and data to the 2250 buffer for execution, relocating them as necessary.

Allocate, control, and protect sections of main storage and of the 2250 buffer as required by the user's graphic program.

Diagnose asynchronous errors and accomplish necessary error handling.

CONTENTS

Published by DP Sales Publishing Services, WTHQ

Features available with the initial version are:

Two levels of graphic order and data grouping, each of which can be referenced as an entity:

1. element -- all orders and data produced by one call to a graphic subroutine.

2. sequences -- all orders and data produced by several calls to graphic subroutines.

Acceptance of input data in any rectangular coordinate system; the data is scaled as appropriate for use by the graphic subroutine package.

Provision for dividing the screen into rectangular segments, called graphic data sets, so that portions of a display can be displayed and referenced as entities.

Truncation of portions of images that extend beyond desired bounds.

Provision for temporarily removing an image from a display while its associated orders and data are in the buffer, and later redisplaying the image.

Modification of graphic orders and data produced by a single call wherever they are located (in main storage or in the buffer) by another call to the same subroutine.

Display of alphameric characters using either the character generator feature of the 2250 or a series of lines called strokes.

Capability to read information from the buffer into main storage.

Capability to locate the position of the light pen on the screen even if the light pen is pointed at a blank portion of the screen.

Capability to place a tracking symbol on the screen and follow its motion as it is moved by a 2250 operator with the light pen. (Restricted to 2250 Model 3.)

Allowance for in-buffer subroutines that can be repeatedly invoked through in-buffer linkage (restricted to 2250 Model 3.)

Ability to check the status of the program while it is being processed.

Calling any of the subroutines from an assembler language program.

Single and multiple queuing of attention information, and in-line processing of that information.

Systems Requirements

Required for use of the FORTRAN IV graphic subroutine package are:

128K bytes of main storage; this includes the control program and OS/360 containing Graphic Programming Services (360S-I0-523)

2250 Display Unit Model 1 or 3 with absolute vectors and a buffer.

Reference Material

System Reference Library publication System/360 Operating System: Graphic Programming Services for FORTRAN IV, C27-6932.

John Fahey
Director of DP Marketing

Sychronous Transmit-Receive Access Method for DOS/360: Provides a macro-instruction level of support for the transmission and reception of data using the IBM 2701 Synchronous Data Adapter - Type I. The access method provides Telecommunications support for Synchronous Transmit-Receive terminals including CPU to CPU transmission. (360A-SE-32X)

Description: The program provides macro-instructions and routines to allow transmission and reception of data via the 2701 Synchronous Data Adapter - Type I connected to STR terminals, remote or local. User type macros and routines are provided to interface the Disk Operating System, maintain line control, diagnose and recover from transmission execute data transmission, and convert code.

The access method provides a macro language at the assembler level to provide Environment Definition ... Line Control ... READ/WRITE level transmission ... Data Translation ... Error Recovery and Restart ... Multiple Line WAIT with Error Checking.

The program utilizing the STR Access Method macros and routines occupies one partition. The other partitions can be used by other programs within the scope of DOS/360.

Features: The access method extends the Tele-processing support of DOS/360 to include STR terminals ... the programming language is independent of line speed, allowing data transmission at speeds ranging from 1200 bps to 40,800 bps ... CPU to CPU transmission is supported ... automatic answer, manual dial, manual answer, and leased line operations are supported ... Autocall (#1302 or 1303) is supported ... the Dual Communications Interface feature (#3461 or #3462) is supported ... the support is at the assembly language level, which allows maximum flexibility of use.

Use: Typical use might involve the writing of communications programs to service remote terminals for input and transmit processed data to the remote terminals. Data can be brought in from remote locations, processed and returned to the same or other remote locations.

Customer Responsibilities: A thorough knowledge of the operation of the STR terminals to be included within his system ... a thorough knowledge of the macro language provided by the STR Access Method ... write a tailored program, using the macros provided, to handle his application ... provide space in Source Statement Library for the STR macro-instructions ... provide space in Core Image Library for the STR transient routines ... provide space in Relocatable Library for the STR relocatable modules.

Programming Systems: Disk Operating System features required are Channel End Appendage capability (TP = BTAM) ... entries in the PUB table for the 2701 Synchronous Data Adapters ... assignment of logical units to the adapters either at system generation or at job time by ASSGN statements.

The STR Access Method System Manual (Y20-0096) contains instructions for providing these PUBs.

The executable routines provided by the access method are distributed as pre-assembled modules to be placed in the user's Relocatable Library and Core Image Library. The Assembly Language macro definitions are to be placed in the user's Source Library. The access method can then be used as though it were part of his DOS/360 System support.

Minimum System Requirements: System/360 Model 30E or larger ... one or more 2701s with Synchronous Data Adapter - Type I (#7695 or #7696) ... as terminals, one or more System/360 Model 30 or larger with 2701 Synchronous Data Adapter - Type I (#7695 or #7696); Model 20 with Communications Adapter; 1978 Terminal (RPQ) Models 1,2, and 3; 1009 Data Transmission Unit; 7701/7702 Magnetic Tape Unit; 7711 Data Communications - Magnetic Tape; 1013 Card Transmission Terminal; 1974 Terminal (RPQ) Model 2.

Basic Program Material:

Publications* -- Users Manual (H20-0346) ... Operators Manual (H20-0347) ... Systems Manual (Y20-0096).

Documentation -- Application Directory

Machine Readable** -- DOS/360 Job Stream on one 9-track Distribution Tape Reel (DTR) at 800 BPI or one 9-track DTR at 1600 BPI.

Optional Program Material:

Machine Readable** -- Source Modules on one 9-track Distribution Tape Reel (DTR) at 800 BPI or 9-track DTR at 1600 BPI.

Additional Program Support Material: Application Description (H20-0243).

Reference Material: IBM 2701 Data Adapter Unit - Principles of Operation (A22-6864).

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering this program, the requester should indicate the distribution medium required on the back of the program order card. If not specified, 9-track at 800 BPI will be forwarded.

DTRs will be provided by PID; no tape submittal is required.

For further information contact your Regional Programming Systems Marketing Representative.

Synchronous Transmit-Receive Access Method for OS/360: Provides a macro-instruction level of support for the transmission and reception of data using the IBM 2701 Synchronous Data Adapter - Type I. The access method provides Telecommunications support for Synchronous Transmit-Receive terminals including CPU to CPU transmission. (360A-SE-33X)

Description: The access method provides a macro language at the assembler level to provide Environment Definition ... Line Control ... READ/WRITE level transmission ... GET/PUT level transmission ... Buffer Management ... Data Translation ... Error Recovery and Restart ... Multiple Event WAIT with Error Checking.

The program utilizing the STR Access Method occupies one partition. The remaining partitions can be used by other programs within the scope of OS/360. User type macros and routines are provided to interface the Operating System, maintain line control, diagnose and recover from transmission error, execute data transmission, convert code, and handle buffers.

Features: The access method extends the Tele-processing support of OS/360 to include STR type terminals ... line speed is under program control, allowing data transmission at speeds ranging from 1200 bps to 40,800 bps ... CPU to CPU transmission is supported ... automatic answer, manual dial, manual answer, and leased line operations are supported ... Autocall (#1302 or #1303) is supported ... the Dual Communications Interface feature (#3461 or #3462) is supported ... the support is at the assembly language level, which allows maximum flexibility of use.

Use: Typical use might involve the writing of communications programs to service remote terminals for input and transmit processed data to the remote terminals. Data can be brought in from remote locations, processed, and returned to the same or other remote locations.

Customer Responsibilities: A thorough knowledge of the operation of the STR terminals to be included within his system ... a thorough knowledge of the macro language provided by the STR Access Method ... write a tailored program, using the macros provided, to handle his application ... provide space in SVCLIB for the STR Access Method load routines and error routines ... provide space in LINKLIB for the STR Access Method LINK routines.

Programming Systems: Operating System features required are OS/360 Option 2 (MFT) Release 11 or later ... BTAM ... UCBs defined at SYSGEN for the 2701 Synchronous Data Adapter Units; the STR Access Method System Manual (Y20-0097) contains instructions for providing these UCBs; the executable routines provided by the access method are distributed as pre-assembled modules to be placed in the user's LINKLIB and SVCLIB; the Assembly Language Macro-definitions are to be placed in the user's MACLIB; the access method can then be used as though it were part of his OS/360 System support.

Minimum System Requirements: System/360 Model 30E or larger ... one or more 2701s with Synchronous Data Adapter - Type I (#7695 or #7696) ... as terminals one or more System/360 Model 30 or larger with 2701 Synchronous Data Adapter-Type I (7695 or #7696); Model 20 with Communications Adapter; 1978 Terminal (RPQ) Models 1,2, and 3; 1009 Data Transmission Unit; 7701/7702 Magnetic Tape Unit; 7711 Data Communications Unit - Magnetic Tape; 1974 Terminal (RPQ) Model 2; 1013 Card Transmission Terminal.

Basic Program Material:

Publications* -- Users Manual (H20-0349) ... Operators Manual (H20-0350) ... Systems Manual (Y20-0097).

Documentation -- Application Directory.

Machine Readable** -- OS/360 Job Stream on one 9-track Distribution Tape Reel (DTR) at 800 BPI or one 9-track DTR at 1600 BPI.

Optional Program Material:

Machine Readable** -- Source Modules on one 9-track Distribution Tape Reel (DTR) at 800 BPI or one 9-track DTR at 1600 BPI.

Additional Program Support Material: Application Description (H20-0242).

Reference Material: IBM 2701 Data Adapter Unit - Principles of Operation (A22-6864).

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering this program, the requester should indicate the distribution medium required on the back of the program order card. If not specified, 9-track at 800 BPI will be forwarded.

For further information contact Regional Programming Systems Marketing Representative.

[A] IBM 1800 Time Sharing Executive Non-Reentrant Arithmetic Functional and Conversion Subroutines

A set of non-reentrant arithmetic, functional and conversion subroutines is now available for use with the 1800 Time-Sharing Executive System. These subroutines are the same in number and function as those reentrant subroutines provided by the 1800 Time-Sharing Executive. They will offer those users of the 1800 TSX System who do not need reentrant coded subroutines faster execution of their program. These routines can be included in the Subroutine Library of the 1800 TSX System.

When used with the IBM 1800 Time-Sharing Executive, the sub-routines will have the following characteristics

    A. They will not be reentrant. The user will be responsible for not having the subroutine used from more than one level at a time. Errors or potential error resulting from calling a subroutine a second time before completing it the first time will not be detected by the TSX system.

    B. FAC (Floating accumulator) will be located on the Work Level at its present location.

    C. The user will be able to delete those reentrant subroutines by performing DUP functions of delete, store and pack disk. This means that a single system may have a mixture of re-entrant and non-reentrant routines.

The set of non-reentrant routines for use with the 1800 Time-Sharing Executive System (1800-OS-001) may be ordered separately under 1800-LM-009.

Performance

A comparison of execution times for reentrant and non-reentrant sub-routines are in TNLs N26-0562 to C26-5990-2 and N26-0561 to C26-3754-2. All times are based upon a 2.0 microsecond memory. The TNLs also include information on non-reentrant sub-routines for updating parent TSX publications.

Minimum System Requirements

Same as those required for the 1800 Time Sharing Executive System.

Basic Program Material [1800-LM-009]

    Documentation -- Program Material List

    Machine Readable -- Arithmetics and Functionals (BC01-00) and Conversion Routines (BC02-00) decks, available in card form only.

Ordering Procedure is outlined in the DP Sales Activity section of the Branch Office Manual.

[B] IBM 1800 FORTRAN Unformatted I/O Capability

Modifications to the IBM 1800 FORTRAN Compiler and Subroutine Library, which support the capability of magnetic tape unformatted input/output in the FORTRAN language, are now available.

These capabilities are included in:

    1800 FORTRAN Compiler, 1800-FO-007 - Version 1 Modification Level 1

    1800 Subroutine Library, 1800-LM-003, - Version 1 Modification Level 1

Users can perform read and write operations to the magnetic tape in an unedited format. The compiler now recognizes and compiles these statements, and the library allows him to execute the programs. It will result in much faster I/O in many cases where intermediate data must be saved and restored at a later time. No conversions are necessary since core image format is written on the magnetic tapes.

This implementation fulfills the requirements for a Basic FORTRAN IV Compiler as defined by the USA Standard Basic FORTRAN. It

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Distribution: All Areas

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provides a means for faster input and output of intermediate data since no conversions are required.

There are no changes in the operation of the FORTRAN compiler. The compiler now allows the appearance of the unformatted input and output statements in a source program.

These subroutines are included in the Subroutine Library and used like any other subroutine presently in the library. Formatted magnetic tape records presently being used will no longer be valid with these changes. An additional header word is now present on formatted records which make them incompatible with the old method. These subroutines are loaded utilizing the Relocating Loader in the 1800 Keyset Utilities (1800-UT-001).

Core Storage Requirements

When unformatted I/O is used, core loads increase in size as follows:

    Multiple Device Magnetic Tape -- by approximately 500 words
    Single Device Magnetic Tape -- by approximately 400 words

Minimum System Configuration

A 4096 word 1800 System Processor-Controller ... 1816 Printer-Keyboard or 1053 Printer or 1443 Printer ... 1442 Card Read Punch Model 6 or 7.

If it is desirable to use this new facility, it will be necessary to have 2401/2402 Magnetic Tape Units Models 1, 2, or 3.

Basic Program Material

    Publications -- IBM 1800 Card/Paper Tape Programming System, C26-3751-0 with TNL's N26-0508, N26-0511, N26-0528 and N26-0539.

    If only the publications or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanics-burg -- not from PID.

    Documentation -- Program material list.

    Machine Readable -- Program decks are available in card form.

Ordering Procedures

Current users of these programs will be sent the modification package automatically by PID.

New users must submit one program order card for each program required.

[C] Availability of Program Recorded at 1600 BPI

Clarification of Item C of P67-49.

When ordering programs for distribution on 9-track magnetic tape in 1600 bpi mode, the 1600 bpi requirement must be clearly marked on both the program order form and on the magnetic tape reel. Orders without any density specified will be filled on 9-track tape at 800 bpi.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

IBM System/360 Product Structure Retrieval

This program is now available (360A-ME-07X).

Description

The program provides manufacturing organizations with easy-to-modify routines that retrieve records or a series of records which have been organized and maintained by the Bill of Material Processor Program (360A-ME-06X).

Six types of retrieval reports are included with this program. They are:

- Single Level Explosion
- Indented Explosion
- Summarized Explosion
- Single Level Implosion
- Indented Implosion
- Summarized Implosion

This program is designed to run under IBM Basic Operating System/360 or IBM Disk Operating System/360. The program is written in a modular manner to provide for maximum facility in tailoring the reports to user needs by source-level modification.

Special Publication Information

The Systems Manual (Y20-0112) will not be available from the IBM Distribution Center, Mechanicsburg until July 3.

See the back for the text that will appear in the sales manual.

For further information contact your Manufacturing Industry Marketing Representative.

John Fahey
Director of DP Marketing

Product Structure Retrieval: This program extracts selected information from files organized by the System/360 Bill of Material Processor Program (360A-ME-06X).
Six types of retrieval reports can be made with this module. They are Single Level Explosion ... Indented Explosion ... Summarized Explosion ... Single Level Implosion ... Indented Implosion ... Summarized Implosion. (360A-ME-07X)

The general structure of the retrieval program consists of a mainline phase and three retrieval phases ... (1) a single level retrieval phase ... (2) an indented retrieval phase ... (3) a summarized retrieval phase ... each phase incorporating both explosion and implosion logic ... a common area for constants and work area ... separate formatting routines are included.

Each of the three retrieval phases performs processing appropriate to it; linkage is then made to the required formatting routine to produce reports on a particular part number request. The program is written in a modular manner to provide for maximum facility in tailoring the reports to user needs. Maintaining and retrieving accurate, up-to-date product structure information at an economical cost suggests a central information system that can serve many functional areas in a manufacturing company.

Features: The mainline phase is the control section of this retrieval system. It performs system initialization; opening files, updating the run number ... reads the first request card (type of retrieval desired) ... fetches the appropriate retrieval program phase into core ... passes control to it.

The retrieval phases operate generally by: reading the part number request card ... retrieving the appropriate file records ... passing control to the appropriate report formatting routine ... reading the next part number request card (if any) ... continuing to link to and from the report formatting routine until a new retrieval request card is encountered ... returning control to the mainline.

When one of the retrieval phases encounters an end of job card, control is also returned to the mainline which performs end-of-job functions and ends the run. Use of the product data can be classified as explosion (assembly data) or implosion (where used data) by using the assembly-component addresses (chains) or where-used addresses (chains) contained in the master and product structure files. The user should refer to the Bill of Material Processor - A Maintenance and Retrieval System (E20-0114).

The following is a discussion of the features of each of the three retrieval phases which produce the following six report types:

Single Level Explosion. The most fundamental type of retrieval program using product structure data in assembly component sequence. The processing output is a bill of material. The assembly is exploded into its direct components and associated quantities per assembly. An example of a single level explosion application that uses product structure data as a framework for processing is the extended bill of material.

Indented Explosion. A processing technique for completely breaking a top-level or other major assembly into its multiple sub-assembly levels or tiers. The term "Indented" refers to the format of the printed output frequently called an indented parts list. In addition, the order quantity of the starting assembly is multiplied by each of the quantity-per-assembly fields giving the total quantity for each component needed. This report shows a level by level relationship of all parts within an assembly.

Summarized Explosion. Provides gross requirements for end products and sub-assemblies. This is a processing technique for completely breaking a top-level or other major assembly into all its multiple sub-assembly levels and summarizing the quantities of each part (sub-assemblies and simple parts) found in the entire product structure. Low level codes are used to eliminate re-explosion of multiple-use assemblies. This type of retrieval provides the framework for performing a gross to net requirements application.

Single Level Implosion. The most basic type of retrieval program using the product structure data in where-used sequence. The output of the processing is a next assembly where-used listing.

Indented Implosion. A processing technique for tracing the usages of a given part number in assemblies at various usage levels, and in turn, the use of the part number in higher level assemblies up to the top assembly level. The term "Indented" refers to the format of the printed output which shows a level by level relationship through all products.

Summarized Implosion. A multi-level processing technique that totals the direct and indirect usages of a part number on all higher level assemblies. The printed output indicates all the assemblies that directly or indirectly contain the part number, including the total quantity of the part number in each assembly. This type of retrieval also reflects the effect of incremental cost increases or decreases of simple parts or sub-assemblies on top level products.

Use: The System/360 Product Structure Retrieval Program is a direct access file oriented concept that requires a master inventory file to be on line simultaneously with the product structure file. All files are created, added, deleted, and reorganized by the Bill of Material Processor Program (360A-ME-06X).

The package includes logic diagrams and programming support for the three retrieval phases of the module. The diagrams supplying the master logic describe the decisions required to determine which records to access ... accessing of the records ... controls ... the locations in the logic flow where the user may insert his own processing subroutines.

Customer Responsibilities: A thorough knowledge of the System/360 Bill of Material Processor Program ... creation of master inventory files ... creation of product structure files ... tailor sample file layouts to installation requirements.

Programming Systems: Assembler language with input/output macros under supervision of the Basic Operating System/360 or Disk Operating System/360.

Minimum System Requirements: A 2030 D or E Central Processing Unit (16K under BOS control or 32K under DOS control) with Decimal Arithmetic (#3237), 1051 Attachment (#7915) ... 1051 Control Unit Model N1 for Console Printer-Keyboard, First Printer Attachment (#4409), CPU Attachment (#3130), First Punch Attachment (#4410), First Reader Attachment (#4411) ... 1052 Console Printer-Keyboard (Model 8) ... (any S/360 Model) Card Read Punch ... (any S/360 Model) Printer ... 2841 Storage Control Model 1 ... 2311 Disk Storage Drives Model 1 as required to contain Basic or Disk Operating System/360 and user's data files (minimum of 2).

Basic Program Material:

Publications* -- Programmers Manual (H20-0369) and Operators Manual (H20-0370).

Documentation -- Application Directory.

Machine Readable** -- Source program decks available on one 9-track DTR at 800 BPI or one 9-track DTR at 1600 BPI or one 7-track DTR at 800 BPI (Data Conversion feature required) or in card form.

Ordering Procedure: See Branch Office Manual, DP Sales Activity section, page 4-401.

Additional Program Support Material: Application Description (H20-0329) and Systems Manual (Y20-0112).

Reference Material: Bill of Material Processor - The Maintenance and Retrieval System (E20-0114) ... General Information Manual - Production Information Control System (E20-0280) ... Bill of Material Processor - Application Description Manual (H20-0197) ... System/360 Bill of Material Processor - Programmers Manual (H20-0246).

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the required medium is not specified on the program order card, 9-track DTR at 800 BPI will be forwarded.

The DTR will be supplied by PID; not tape submittal is required.

For further information contact your Manufacturing Industry Marketing Representative.

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated material may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the latter, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments as sources of information or for manuals etc. should be understood to mean the comparable WT Department.

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] All references made to Engineering Changes required for programs should be verified with the local CE Branch Office. Although E/C requirements are identical for WT and IBM, E/C availability dates and shipping schedules may differ.

Basic PL/I for DOS/360

System Release 11, which includes the initial availability of DOS/360 Basic PL/I, is now available. It also includes normal maintenance APAR fixes and a 10K Supervisor.

PL/I is available NOW for users of DOS/360. Originally scheduled for release on July 14, 1967, this latest and most powerful addition to Disk Operating System/360 offers versatility, economy, and efficiency to those users who take the opportunity to switch to the one higher level language that can do the job of all the others combined. When presenting this advanced concept in programming languages to your DOS/360 customer and prospect, remember the following:

- Programming in Basic PL/I, starting at the 16K level, permits and encourages a wider range of applications.

- Basic PL/I is one language that solves both commercial and scientific problems.

- Economic use of the programmer's time is achieved since Basic PL/I no longer requires specialization in one direction for commercial programming and in another for scientific programming.

Furthermore, combining the needs of commercial and scientific users in one installation enables the commercial group to find technical uses of the computer -- such as statistical forecasting and linear programming. On the other hand, the scientific programmer is provided with more flexible input and output operations to rearrange and edit technical data in order to expedite the preparation of reports.

The DOS/360 Basic PL/I Compiler provides, in a single high-level language, many new and significant features, such as:

- Comprehensive data conversion and editing facilities.

- Data structures for alphameric information.

- Ability to process a wide range of data types, including character and bit strings, fixed and floating decimal, and fixed and floating binary.

- Both structured data and array data have arithmetic capability, including expressions whose elements are simple variables, structured data, and arrays.

- Data Stream Transmission.

- Record Transmission capability.

Basic PL/I provides the user with a key for solving both his computing and his resource allocation problems. It also enables the user to employ an organization of programmers using one common language, thus reducing training costs and enhancing communication between scientific and commercial applications groups.

The PL/I source program may employ a set of DASD macros (360N-CB-468) that enable the DOS user to access the 2311 Disk Storage Drive by using Indexed Sequential IOCS Macros to perform these functions for ISFMS files:

- Load
- Sequential retrieval and update
- Random retrieval and update
- Random retrieval, update, and add

The programmer supplies parameters which describe the file to the macro, and the macro is then assembled by the DOS/360 Assembler. The assembled macro can be cataloged into the relocatable library, from which it is link edited with an object program produced by the Basic PL/I Compiler. The Basic PL/I source program accesses these macros with a CALL statement. Specific macros can be pre-assembled, cataloged, and used by any Basic PL/I program using the same file. Note that this facility is employed only for indexed sequential files; the Basic PL/I Compiler services Direct Access Method files directly.

System Requirements

The minimum features required are the same as those required for DOS:

16K bytes of main storage (see Note 1) ... Standard Instruction Set ... One I/O channel (either multiplexer or selector) ... One card reader ... One card punch ... One printer ... One 1052 Printer-Keyboard ... One 2311 Disk Storage Drive.

For further discussing of system configuration, see IBM S/360 DOS, System Control and System Service Programs, C24-5036.

Program Material and Ordering Procedures -- See the reverse side.

Additional Information

A brief description of some of the more important features of Basic PL/I follows:

- All three types of declarations, explicit, contextual, and implicit are employed by Basic PL/I. Thus, full declaration of data, as in COBOL, is possible as well as the FORTRAN-like default declarations.

- Arithmetic and character string data may be declared by using the PICTURE attribute.

- Automatic storage class has been provided. In applications where the programmer can arrange his program in parallel blocks, each of them dealing with different data, significant savings of data storage can be obtained by the usage of automatic storage. Based variables are provided with this compiler where their main application is in the area of locate mode, input, and output.

- For input/output both RECORD ORIENTED and edit directed stream I/O are provided. Edit directed output will be of great interest not only to FORTRAN-oriented programmers but also for use in report writing. Lines can be broken down into more than one output statement allowing flexible arrangement of the print line by program control. The DISPLAY statement enables communications with the operator at execution time.

- All information to describe the internal attributes of a data set (block size or record format) can be specified at compile time with DOS/360. This information is specified in the ENVIRONMENT attribute. For this reason, all files except the PL/I file SYSIN and SYSPRINT must be declared explicitly.

Unbuffered files are implemented as DOS/360 work files. Here, the same file may be opened for output, closed and opened again for input. These files may be used to hold intermediate data and require less core storage than other files.

To fit larger programs into small machines, an overlay facility has been included in the Basic PL/I Compiler. This facility uses the phase structure provided by the DOS/360 Linkage Editor. The Statement CALL OVERLAY ('phase - name') loads the required phase into the main storage assigned by the DOS Linkage Editor. Note: An actual procedure within a phase is called by a normal CALL statement.

The based variables and pointer variables of the LIST PROCESSING facility of the full PL/I language have been included in this compiler. Their use has three basic purposes:

- For locate mode input/output
- Multiple record formats
- Simulation of arrays of structure

Basic PL/I Operations Environment

The Basic PL/I Compiler for DOS/360 operates in the same manner as any other DOS/360 Compiler. Three work files (SYS001, SYS002, and SYS003) are used by the compiler. All three may be on magnetic tape or on 2311 DASD. A choice can be made at systems generation time to allow SYSIN, SYSLST and/or SYSPCH to reside on the 2311 DASD. In the former case, 12K of main storage is required for the compiler. (This option will also require an 8K control program). The options LINK and DECK may be specified concurrently for Basic PL/I. In this case, output to SYSLNK and a card deck will both be produced.

The following listings are optionally provided at compile time:

- Source program
- Symbol table
- Diagnostics
- Offset table
- Object code
- Block table

Performance Estimates

System/360 Disk Operating System, Performance Estimates, C24-5032-2 has been updated to include Basic PL/I data by Technical Newsletter N24-5293 which is available from the IBM Distribution Center, Mechanicsburg.

A Basic PL/I Reference Card (X20-1749-0) is also available from Mechanicsburg.

John Fahey
Director of DP Marketing

Note 1: Compilation of Basic PL/I programs can be performed by a DOS/360 System with 16K main storage. However, most user object programs will require a 24K minimum memory. Object programs that can be executed in 16K are subject to limitations. For many programs, these limitations can be reduced by program segmentation through the use of overlays; but this technique may result in performance degradation.

asic Program Material

The following SRL publications appropriate to the components ordered are shipped by the Program Information Department (PID) with each initial DOS/360 order.

SRL Publications: Machine Readable Material is distributed as indicated below --

System/360 Disk Operating System

Operating Guide	C24-5022-2
TNLs N24-5193, N24-5286	
Concepts and Facilities	C24-5030-2
TNLs N24-5182, N24-5191, N24-5233	
Performance Estimates	C24-5032-2
TNL N24-5293	
Systems Generation and Maintenance	C24-5033-3
TNL N24-5295	
Data Management Concepts	C24-3427-1
TNLs N24-5122, N24-5169, N24-5197	
System Control and System Service Programs	C24-5036-1
TNLs N24-5218, N24-5289	
Supervisor and Input/Output Macros	C24-5037-2
TNL N24-5252	
Basic Telecommunications Access Method	C30-5001-3
Utility Macros Specifications	C24-5042-1
TNLs N24-5184, N24-5268	
Vocabulary File Program for the 7772 Audio Response Unit	C27-6924-1
Utility Programs Specifications	C24-3465-3
(Note - SRL C24-3465-2 plus TNLs N21-5024, N21-5044 and N21-5047 may be used in lieu of SRL C24-3465-3)	
Tape Sort/Merge Program Specifications	C24-3438-3
(Note - C24-3438-1 and TNLs N21-5021, N24-5064, N24-5131, N21-5036, N21-5042 and N21-5050 or SRL C24-3438-2 plus TNL N21-5036, N21-5042 and N21-5050 may be used in lieu of the SRL C24-3438-3)	
Sort/Merge Program Specifications	C24-3444-2
(Note - SRL C24-3444-1 plus TNLs N21-5035 and N21-5049 may be used in lieu of the SRL C24-3444-2)	
COBOL DASD Macros	C24-5039-1
(Note - C24-5039 and TNLs N24-5142, N24-5181 may be used in lieu of C24-5039-1)	
Assembler Specifications	C24-3414-4
TNL 126-0536	
(Note - C24-3414-2 plus TNLs N24-5057, N24-5076, N24-5107, N26-0516, N26-0520, N26-0533 and N26-0536 or C24-3414-3 plus TNLs N26-0516, N26-0520, N26-0533 and N26-0536 may be used in lieu of C24-3414-4, and TNL N26-0536)	
COBOL Programmers Guide	C24-5025-3
TNL N24-5264	
COBOL Language Specifications	C24-3433-3
TNL N24-5188	
FORTRAN IV Programmers Guide	C24-5038-1
(Note - SRL C24-5038 plus TNL N21-5034 and N21-5053 may be used in lieu of C24-3444-2)	
FORTRAN IV Language	C28-6629
(Note - C24-5014 plus TNLs N21-5018, N24-5041 and N24-5069, or SRL C24-5014-1 may be used in lieu of SRL C28-6629)	
Report Program Generator	C26-3570-4
TNL N24-5195	
Autotest Specifications	C24-5062
QTAM Message Control Program	C30-5002-1
TNLs N30-5003, N30-5011	
Queued Telecommunications Access Method Message Processing Program Services	C30-5003-1
PL/I Subset Language Specifications	C28-6809-1
PL/I Programmers Guide	C24-9005-1
PL/I DASD Macros	C24-5059
TNL N24-5301	

Underlined items denote changes from previous release.

If only the publications or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

Documentation -- Program Material List ... Attachment I - Temporary Restrictions ... Attachment II - Special Instructions.

Machine Readable -- DOS/360 (without the Tele-processing components) is distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required) or one 1316 Disk Pack. These reels of magnetic tapes are in 1316 Disk Pack restore form. The DOS/360 data are preceded by an initialized 2311 Utility Program and a Tape-to-Disk program.

The Tele-processing components are distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required), or one 1316 Disk Pack.

Ordering Procedures

See DP Sales Activity section of the Branch Office Manual.

Magnetic Tapes (2400') may be forwarded to PID or ordered. The order card should accompany the tape or the tape order form; disk packs must be forwarded to PID with the program order card.

When ordering on magnetic tape, if the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

New Users -- Program components may be selected from the following list. Each component for which program documentation and maintenance material is required must appear on the order form.

Supervisor (6K)	360N-SV-474**
Supervisor (8K)	360N-SV-475**
Supervisor (10K)	360N-SV-473***
System Control and Basic IOCS	360N-CL-453**
Direct Access Method	360N-IO-454**
Consecutive Disk IOCS	360N-IO-455**
Consecutive Tape IOCS	360N-IO-456
ISFMS	360N-IO-457**
Consecutive Paper Tape IOCS	360N-IO-458
BTAM	360N-CQ-469**
QTAM	360N-CQ-470
Compiler I/O Modules	360N-IO-476**
Optical Character Reader	360N-IO-478
Autotest	360N-PT-459**
Assembler	360N-AS-465**
COBOL	360N-CB-452**
COBOL DASD Macros	360N-CB-468
FORTRAN IV	360N-FO-451
Report Program Generator	360N-RG-460**
Group 1 Utilities - Unit Recd/Disk	360N-UT-461**
Group 2 Utilities - Tape	360N-UT-462**
Group 3 Utilities - Data Cell	360N-UT-463
MPS Utility Macros	360N-UT-471
Vocabulary File Utility Program	360N-UT-472
Disk Sort/Merge	360N-SM-450**
Tape Sort/Merge	360N-SM-400**
PL/I	360N-PL-464***

**Component changed from previous release.
***Component new with this release.

DOS/360 is distributed as one pre-generated system with a 6K Supervisor ... or one pre-generated system with an 8K Supervisor ... or one pre-generated system with a 10K Supervisor.

The System Control and Basic IOCS component and one of the three Supervisor components are required. To order these components, specify on the IBM Program Order for System/360 Operating Systems (120-1411) -- System Control and Basic IOCS, 360N-CL-453 and Supervisor (6K), 360N-SV-474, or Supervisor (8K), 360N-SV-475, or Supervisor (10K), 360N-SV-473. Supervisor (8K), 360N-SV-475 assumes the users machine size to be at least 32K. If no supervisor is indicated on the order card, PID supplies the (6K), 360N-SV-474.

DOS/360 is available on two reels of magnetic tape or two disk packs.

The first volume contains all of the DOS/360 components listed above except the Tele-processing components (BTAM, QTAM, and the Vocabulary File Utility Program), which are contained in the second volume (including the Sample Program for 360N-UT-472, VFU1).

If the Tele-processing components are required, two volumes must be supplied to PID; if they are not required, only one volume need be supplied.

Current Users -- Current users will receive a prepunched Program Order Card and a letter announcing the availability of DOS Release 11. The letter instructs them to order this release through the branch office. Current users must use the prepunched card to order either the Maintenance Package (includes Basic PL/I) or the Replacement System for Release 11.

Orders for the Release 11 Maintenance Package should be accompanied by one 9-track magnetic tape or one 7-track magnetic tape (Data Conversion feature required) or one 1316 Disk Pack.

Complete ordering instructions are provided in the letter to users.

All DOS/360 users on PID files will receive a prepunched reorder card. Users who have not reordered Release 9 or 10 and who do not order Release 11 will not receive future reorder notices.

Maintenance Packages will be available from PID for a period of 60 days following the announcement of availability of System Release 11.

IBM 1130 Civil Engineering Coordinate Geometry (COGO)

Version 1, Modification Level 2 is available and is being
distributed to all current users.

Improvements

> CONTENTS
>
> 1130 COGO (1130-EC-02X) ... an
>   application program restriction
>   lifted.
>
> Published by DP Sales Publishing Services. WTHQ

With this Modification Level the Local Origins option, previously restricted in its
use, is now completely operable.
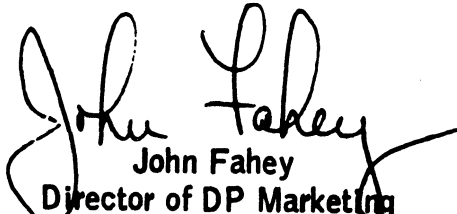
1130 COGO was released December 30, 1966 (Letter P66-125) with the Local
Origins option temporarily restricted. On January 31, 1967 (P67-10), it was
announced that this restriction would be removed by July 15, 1967. As of today,
that restriction is removed.

Order Number

The order number is 1130-EC-02X.

Customers affected by this change should be notified immediately.

For detailed information about 1130 COGO, see the attached sales manual page. For
additional information contact your Regional Manager of Scientific Marketing.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

Attachments [7]:   P 7, P 360A.11, P 360A.13, P 360A.23, P 360A.25,
                    P 360A.27, and P 1130.15.

Release Date: June 29, 1967

Distribution: All Areas

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated material may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the latter, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

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[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

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[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] References made to Engineering Change requirements should be verified with the local CE office. Although E/C requirements are identical for WT and IBM, availability and shipping dates will differ. NO PRODUCTION COMMITMENTS FOR PROGRAMS WITH E/C LEVEL REQUIREMENTS SHOULD BE MADE TO CUSTOMERS PRIOR TO VERIFICATION WITH LOCAL CE MANAGER OF EC AVAILABILITY.

IBM 1130 Work Measurement Aids

The IBM 1130 Work Measurement Aids package is now available (1130-MF-03X). It consists of two programs which will help the Industrial Engineer develop time standards. The programs are:

Machinability -- determines optimum machine tool parameters such as speed, feed, horsepower, tool life, and process time for various machining operations. The program can also produce routine output which is compatible with the S/360 Bill of Material Processor.
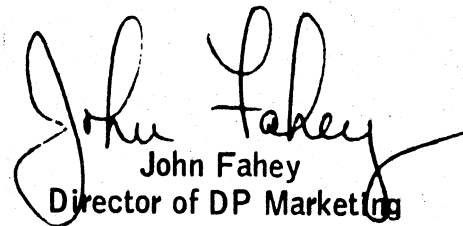
Work Measurement Sampling -- determines job standards for long cycle operations (over 15 minutes) from Work Measurement Sampling observations. The program can also be used for conventional work sampling, which is the distribution of time to job activities.

In addition to these two programs, the Users Manual describes the use of the stepwise regression program of the IBM 1130 Statistical System (1130-CA-06X) for Standard Data Development.

Special Publications Information

The System Manual (Y20-0104) will not be available from the IBM Distribution Center, Mechanicsburg until July 7.

Additional details are on the back. For further information contact your Regional Manufacturing Industry Marketing Representative.

John Fahey
Director of DP Marketing

Release Date: June 30, 1967

Distribution: All Areas

Work Measurement Aids: Manufacturing customers need to know the time it should take to manufacture a product. This task, often referred to as work measurement, has traditionally been very time consuming and expensive. Work Measurement Aids will provide customers with two programs to assist in setting time standards. This information will also form the foundation for labor standards, cost estimates, machine operation instructions, and scheduling input. (1130-MF-03X)

Description: The Work Measurement Aids package consists of two programs that will assist the Industrial Engineer in estimating and standards development. The programs are:

Machinability: Determines optimum machine tool parameters such as speed, feed, horsepower, tool life, and process time for machining operations. The program uses theory of machinability as practiced in a variety of manufacturing companies, including IBM Systems Manufacturing Division, Poughkeepsie, New York. Output can also be used for cost estimating and as reference material for numerical control programmers. The program can also be used to create routings and provide output which is compatible with S/360 Bill of Material Processor.

Work Measurement Sampling: Determines job standards for long cycle operations (over 15 minutes) and the distribution of time to job activities (conventional work sampling). The program accepts work measurement sampling observations, and performs the calculations to convert these observations into job standards. The program eliminates a very time consuming and tedious clerical task, which would make the use of this technique costly to do manually.

In addition to these two programs, the Users Manual describes the use of the stepwise regression analysis program of the IBM 1130 Statistical System (1130-CA-06X) for Standard Data Development. The Statistical Program is used to help determine the relationship between standard time and the key variables which affect it for a particular class of operations. The criteria for determining the validity of the results is described in the WMA Users Manual.

Features:

Machinability: The programming system allows for user specification of all reference data such as material data, machine groups speeds and feeds, and operation factors. This provides for results which are consistent with user's machining practice.

The output provides process time and tool life for three machine settings per machine groups for up to five machine groups. This allows the manufacturing engineer to determine the optimum settings based on evaluation of process time and tool change cost. This is not generally feasible manually.

Output has many uses: manufacturing engineering analysis, numerical control reference data, Bill of Material (routings) File, cost estimating.

Work Measurement Sampling: Provides an economical method for setting job standards and estimating costs in areas where conventional methods are too costly or time consuming. Conventional work sampling data is also provided.

Up to 6,200 work measurement sampling observations may be processed at one time. Provision is made for a maximum of four working shifts, with five scheduled interruptions per shift.

Job parameters and input data cards are edited for missing information and inconsistencies.

Standard Data Development provides an accurate statistical approach for development of data used in setting time standards, using an available application program.

Use:

Machinability: The manufacturing engineer, working from an engineering drawing, describes how a part is to be machined, recording some key parameters that describe the part and operation. These are written in free form. The program performs the necessary computations to produce the machine settings, time standards, and routing.

Work Measurement Sampling: The industrial engineer designates an area or group of jobs to be studied for determination of job standards. The different categories of work are given a code and the engineer then devises a plan for making a random sampling of the area. These observations are the input to the program which produces the job standards.

Standard Data Development -- working from previously determined time standards for a series of similar jobs, an engineer defines the independent variables (part characteristics) and their values are input to the stepwise regression analysis program of the IBM 1130 Statistical System .. time is the dependent variable and the program output depicts the relationship between the time and the independent variables as coefficient values to be used in a formula ... statistical data are produced which indicates the significance and validity of each of the independent variables .. the formula is then used for subsequent computations of standards.

Customer Responsibilities: The machinability program user must provide his data tables to reflect his machining practice. These tables are material factors, machine groups speeds and feeds, and operation factors. Sample tables will be provided.

Users of the Work Measurement Sampling program must be familiar with this technique for determining time standards.

Standard Data Development must have IBM 1130 Statistical System to use the technique described.

Programming Systems: Current version of the IBM 1130 Monitor (1130-OS-001) Programs are written in 1130 FORTRAN.

Minimum System Requirements: 8K 1130 with Disk Storage. 1131 Model 2B, 1442 Card Read/Punch. Optional use of 1132 Printer.

Basic Program Material:

Publications* -- Application Directory ... Users Manual (H20-0363) ... Operators Manual (H20-0364).

Machine Readable -- Object card decks, sample program card decks, and sample reference data card decks will be distributed in card form.

Optional Program Material:

Machine Readable**-- Program source decks are available on one reel of 9-track magnetic tape at 800 bpi or one reel of 9-track magnetic at 1600 bpi. Decks and listings are generated by the self-loading program on the tape using a System/360 Model 2030 D.

Ordering Procedure: See the Branch Office Manual, DP Sales Activition section, page 4-401.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not PID.

**When ordering this program, the requester must indicate the distribution medium required on the back of the program order card. If not specified, 9-track at 800 bpi will be forwarded.

Additional Program Support Material: Application Description Manual (H20-0249-1) ... System Manual (Y20-0104)

Reference Material: Sales and Systems Guide to Industrial and Manufacturing Engineering (Z20-1713) ... Methods and Standards Automation (E20-0144) ... Automated Manufacturing Planning (E20-0146).

For additional information contact your Regional Manufacturing Industry Marketing Representative.

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[A] IBM 1130 Mechanism Design System

The 1130 Mechanism Design System - Gears and Springs is now available (1130-EM-01X).

There are five design and analysis programs in this system: Spur and Helical Gears, Compression, Extension, and Torsion Springs.

The input to these programs is in a flexible problem language format and supplies the design restrictions and material parameters. The programs will operate either from batched card input or from conversational, typewriter input. All program execution is under 1130 Monitor. Complete design documentation necessary for production and inspection is produced.

Special Sales Information: Although many design criteria are programmed in this application, it is not possible or practical to try to program for every user requirement. As a result, the programs may require modification to meet specific cases. The programs were constructed with this in mind and are highly segmented, coded in FORTRAN, and extensively documented.

Special Publication Information: The Systems Manual (Y20-0109) will not be available from the IBM Distribution Center, Mechanicsburg until July 7.

Additional details are on the back. For further information contact your Regional Manufacturing Industry Marketing Representative.

[B] IBM 1800/1130 Control Optimization Program

The 1800/1130 Control Optimization Program is now available (1800-CC-01X).

CCP/1800-1130 is a general-purpose non-linear optimization program with features that make it particularly suited to on-line use in an optimizing process control system. It operates under control of the IBM 1800 Time-Sharing Executive System (both Process and Non-Process Supervisors) or the IBM 1130 Disk Monitor System.

Description: COP/1800-1130 uses a method of "sectional linear programming" to optimize a non-linear mathematical model. The model and objective function are linearized about some starting point using partial derivatives. Linear programming is applied to find the local optimum within the area in which the linearized model equations are valid approximations to the true non-linear equations. The model and objective function are re-linearized about this solution and another local optimum is found. Alternate re-linearizations and optimizations are performed until a solution is obtained which approximates an optimal solution to the non-linear system.

COP/1800-1130 may be used for a variety of optimization studies on the IBM 1800 Data Acquisition and Control System or the IBM 1130 Computing System. On the IBM 1800 Data Acquisition and Control System it may be used to determine optimum steady-state control adjustments in open- or closed-loop process control systems.

Special Publication Information: The Systems Manual (Y20-0110) will not be available from the IBM Distribution Center, Mechanicsburg until July 7.

See the back for more details. For further information contact your Process Industry Marketing Representative.

CONTENTS

Published by DP Sales Publishing Services, WTHQ

[C] IBM 1800 FORTRAN Compiler

On P67-61 the Contents referred to 1800-FO-009 for subject program. It should have been 1800-FO-007.

John Fahey
Director of DP Marketing

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Mechanism Design System -- Gears and Springs: Provides design and analysis for five distinct mechanical components used in a wide variety of machines in all industry. Spur and Helical Gears, Compression, Extension and Torsion Springs are the components covered by this application. (1130-EM-01X)

Description: The 1130 Mechanism Design System - Gears and Springs provides the mechanical engineer and mechanism designer with a low cost, flexible, easy-to-use program set which will design new parts or analyze existing parts. Gears and Springs are commonly found in every conceivable device in our highly mechanized society. They exist in dozens of types, but those covered here represent a high proportion of the total design effort expended in this area.

The engineer is expected to furnish the problem description in terms of design restrictions and material parameters. This description is in a flexible problem language format which greatly simplifies man-machine communication. Operation can be either by a batch, card input mode or in a conversational typewriter input mode. In the latter case, an engineer can readily evaluate parametric changes and truly use the computer as a design tool.

The Spur and Helical Gear Programs enable the engineer to design a new gear train containing two gears, or to analyze an existing gear train. The programs for gear design compute the parameters of gears with the smallest dimensions that will give stresses below the allowable limits for the materials specified. When designing gears, the engineer may furnish the data about one gear or the shaft center distance of the two gears. In both cases, the computer will generate the information necessary for producing the gears and evaluating the design.

The Compression and Extension Spring programs provide for both the design and analysis of round wire helical springs. The Torsion Spring program provides for the design and analysis of round and rectangular wire helical springs.

When designing springs, the user can specify an allowable design stress or allow the program to compute the design and limit stresses based on wire diameter. Commonly used materials and wire sizes are furnished with the Spring programs in the form of tables. The user has the option of using these standard values or providing a minimum and maximum wire size and an incremental value to be used in selecting a workable wire size. The acceptability of each wire size for a given spring design is based primarily on the spring operating at a safe stress level consistent with service requirement. However, once a real spring is calculated, several other checks can be performed. Two such checks are for the spring index and the spring diameter to be within specified limits.

Features: A modifiable command structure is provided which the user can tailor to meet individual requirement ... input can be in batch or conversational mode; while operating in conversational mode (typewriter input), the engineer can readily modify the problem parameters to achieve a satisfactory design ... programs are highly modular and coded in FORTRAN for ease of modification; calculations not performed in this application can be added to existing program modules or new program modules written; all programs run under the disk resident monitor system (1130-OS-001) ... standard data can be called by name through use of the command structure provided; new commands can be added to those provided with the system for tables of standard size data, material physical parameters, etc. ... American Gear Manufacturing Association (AGMA) and Spring Manufacturer's Institute (SMI) tolerance and quality data are available in the command list; thus, the user can utilize that quality data furnished with the program or by adding new commands he can use local practices ... new components can be designed or existing components analyzed ... design documentation includes data required for a part drawing and additional calculated data required for design evaluation ... a framework is provided for expanding the existing command structure to include functions not covered in these applications, as well as for creating new applications for additional component types. (Examples for the former are type and size synthesis; for the latter, cams, different gear types and linkages.)

Customer Responsibilities: A basic knowledge of gear and spring design terminology, materials, manufacturing tolerances and inspection techniques is essential. The customer must, in addition, study and understand what design criteria are implemented in this application. In any given machine generated design, the results may not agree with a preconceived idea or an existing design. It is envisioned that in situations like this, the engineer will be able to direct the machine to a satisfactory solution by means of the features provided. If he cannot, however, program modification will be necessary. The programs were constructed with this in mind and are highly segmented, coded in FORTRAN, and extensively documented. This program is not a substitute for an engineer's experience and judgment. Rather, it is a tool to be used which enables him to think more about design and less about detail calculations.

Use: The Mechanism Design System is controlled by user written commands which describe the problem to be processed.

Programming Systems: The Current version of the IBM 1130 Monitor (1130-OS-001). Programs are written in 1130 FORTRAN.

Minimum System Requirement: 1130 Model 2B Computing System, ... 1442 Model 6 or 7 Card Read Punch ... 2315 Disk.

Optional System Requirement: 1132 Printer for more efficient production ... Expansion Adapter (#3616) ... 1132 Attachment (#3854).

Basic Program Material:

Publications* -- Application Directory ... Users Manual (H20-0365) ... Operators Manual (H20-0366).

Machine Readable -- Object card decks, sample program card decks, and sample reference data card decks will be distributed in card form.

Optional Program Material:

Machine Readable** -- Program source decks are available on one reel of 9-track magnetic tape at 800 bpi or one reel of 9-track magnetic tape at 1600 bpi. Decks and listings are generated by the self-loading program on the tape, using a System/360 Model 2030 D.

Ordering Procedure: See the Branch Office Manual, DP Sales Activity section, page 4-401.

*If only the form numbered publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not PID.

** When ordering this program, the requester must indicate the distribution medium required on the back of the program order card. If not specified, 9-track at 800 bpi will be forwarded.

Additional Program Support Material: Application Description Manual (H20-0268-1) ... Systems Manual (Y20-0109).

For additional information contact your Regional Manufacturing Industry Marketing Representative.

Control Optimization Program: A general-purpose non-linear optimization program with features that make it particularly suited to on-line use in an optimizing process control system. (1800-CC-01X)

Description: COP/1800-1130 uses a method of "sectional linear programming" to optimize a non-linear mathematical model. The model and objective function are linearized about some starting point using partial derivatives. Linear programming is applied to find the local optimum within the area in which the linearized model equations are valid approximations to the true non-linear equations. The model and objective function are re-linearized about the solution and another local optimum is found. Alternate re-linearization and optimizations are performed until a solution is obtained which approximates an optimal solution to the non-linear system.

COP/1800-1130 may be used for a variety of optimization studies on the IBM 1800 Data Acquisition and Control System or the IBM 1130 Computing System. On the IBM 1800 Data Acquisition and Control System it may be used to determine optimum steady-state control adjustments in open- or closed-loop process control systems.

Features: For on-line operation, input is on disk storage and output may be printed on disk, written, or both. For off-line operation, input is on punched cards and output is printed ... the program will operate in a multi-unit control system as well as a single unit environment ... extensive checking features are incorporated ... the program uses extended precision floating-point arithmetic ... the program uses a modified simplex LP algorithm with special features to permit upper and lower variable bounding, move penalties on independent variables, and target constraints on dependent variables without increasing LP matrix size.

Customer Responsibilities: COP/1800-1130 provides all input and output functions, interface with the user's model and all of the linearization and optimization calculations. Two items are required of the user for off-line operation--

1. A properly formulated mathematical model and the objective function to be optimized, or a programmed routine for calculating partial derivatives, or a matrix of partial derivatives.

2. A set of data defining the initial values of model variables, limits (bounds and constraints) on model variables and the required logical control parameters.

When COP/1800-1130 is to be used on-line in a process control system, the above two items apply. The user must also provide programs to perform the necessary instrument scans, averaging and digital filtering of process data and routines to transform optimized solutions into appropriate signals to effect control variable changes.

The model may be written in either FORTRAN or Assembler language.

Note that customer options must be specified by changing source cards prior to assembling COP/1800-1130.

Programming Systems: COP/1800-1130 operates under control of the IBM 1800 Time-Sharing Executive System (both Process and Non-Process Supervisor, 1800-OS-001) or IBM 1130 Disk Monitor System (1130-OS-001). The program is written in Assembler language.

Minimum Machine Configurations:

. For on-line use on the 1800: an 1801 or 1802 with a minimum of 8,192 words of core storage ... one 2310 Disk Storage Drive ... 1442 Card Read Punch.

. For off-line use on the 1800: an 1801 or 1802 with a minimum of 8,192 words of core storage ... one 2310 Disk Storage Drive ... 1442 Card Read Punch ... 1443 Printer or 1816 Printer-Keyboard.

. For use on the 1130: an IBM 1131 Model 2B and an IBM 1442 Card Read Punch.

Core storage requirements vary with the size of the optimization problems to be solved. Information required to determine core storage requirements is contained in the Application Description Manual.

Basic Program Material:

Publications* -- Application Directory ... Users Manual (H20-0351).

Machine Readable -- Source Program Decks and Sample Problem Decks are available in Card Form only.

Ordering Procedure: See the Branch Office Manual, DP Sales Activity section, page 4-401.

*If only the form numbered publication is required, order it from the IBM Distribution Center, Mechanicsburg -- not PID.

Additional Program Support Material: Application Description Manual (H20-0208) ... System Manual (Y20-0110).

Reference Material: 1130 Disk Monitor System Reference Manual (C26-3750) ... 1130 Assembler Language (C26-5927).

For further information contact your Process Industry Marketing Representative.

IBM System/360 Remote Access Computing System (RAX)

RAX, a time shared, remote computing system, is now available (360A-CX-17X), Version 1, Modification Level 0.

Description: RAX provides sustained access to a System/360 from remote locations, enabling programmers, engineers, scientists, and other users to obtain fast turnaround for their computational problems. Users of RAX can submit Basic FORTRAN IV and Basic Assembler Language jobs for compilation and time-sliced execution from local and remote terminals. Simultaneously, similar operations from other on-line equipment at the computer site can be performed. Programmers can compile, modify, and execute programs from their terminals while non-computer oriented users can be conversationally interacting with programs previously stored in the RAX library.

RAX provides a facility for conversational interaction between a user and an executing program. This is accomplished by the use of input/output statements in a problem program which addresses the user's terminal as an I/O device. Thus, programs can be written to take advantage of the "on-line" presence of the user by permitting him to selectively modify his input, observe intermediate results, and alter parameters – or perhaps the execution sequence – of the program based on his interpretation of these results.

RAX user flexibility is provided by a modular and compatible design concept. Three System/360 models (30, 40, and 50) are supported. Three memory sizes (64K, 128K, and 256K bytes) can be used with the three CPU models. Two terminals (the IBM 1050 Data Communications Terminal and the IBM 2260 Display Station) can be used with up to a maximum of 63 terminals simultaneously operational. Two IBM 2311 Direct Access Storage Devices are necessary, but up to eight can be utilized by RAX.

The text below will appear on the sales manual.

For further information contact your Regional Scientific Marketing Manager.

John Fahey
Director of DP Marketing

Sales Manual Text

Remote Access Computing System (RAX):   Provides sustained access to a System/360 from remote locations to enable programmers, engineers, scientists, and other users to obtain fast turnaround and reduced problem-solution time for their computational problems. (360A-CX-17X)

Description: RAX is a time shared, remote computing system. Users of RAX can submit Basic FORTRAN IV and Basic Assembler Language jobs for compilation and time-sliced execution from local and remote terminals, simultaneous with similar operations from other on-line equipment at the computer site. Programmers can compile, modify, and execute programs from their terminals while non-computer oriented users can be conversationally interacting with programs previously stored in the RAX library.

RAX user flexibility is provided by a modular and compatible design. Three System/360 models (30, 40, and 50) are supported. Three memory sizes (64K, 128K, and 256K bytes) can be used with the three CPU models. Two terminals (the IBM 1050 Data Communications Terminal and the IBM 2260 Display Station) can be used with up to a maximum of 63 terminals simultaneously operational. Two IBM 2311 Direct Access Storage Devices are necessary, but up to eight can be utilized by RAX.

In addition to modularity, RAX flexibility is enhanced by its functional capabilities available with the smallest and the largest configuration.

Features:

. Up to 63 terminals can be used with RAX, depending upon the amount of core memory available. The number of RAX terminals supported for the allowable memory configurations are:

256K byte memory	–	maximum of sixty-three 1050 Data Communications Terminals
	–	maximum of eight 2260 Display Stations
	–	total number of 1050 terminals and 2260 Display Stations may not exceed sixty-three

CONTENTS

IBM System/360 Remote Access Computing System (RAX), 360A-CX-17X, ... Now Available.

128K byte memory	–	maximum of thirty-six 1050 terminals
	–	2260s can be used with this memory configuration with one 2260 equated to three 1050s in determining the thirty-six limit
64K byte memory	–	maximum of ten 1050 terminals

. Users may share programs and data stored in the RAX user library. File security is provided by means of a lock code used to prevent unauthorized deletion or modification of any file in the library.

. A restart capability is provided for resumption of jobs after recovery from systems error. Upon recovery, RAX will indicate to each user the last line of input accepted or repeat the last few lines of output.

. The 2260 Display Stations allow entry of up to twelve lines of input at a time. The Non-Destructive Cursor feature is used to provide for single character modification within a line when updating program or data files.

. Object program execution storage of 32K bytes is provided on the minimum memory configuration. 64K bytes are available on the 128K and 256K byte configurations.

. Users of RAX may enter programs and data one line at a time from their terminals or use a single terminal command to insert a previously stored data or source program module into his job stream at compile time.

. Up to seven 2311 Disk Storage Drives are supported for on-line library storage.

. The user may enter either Basic FORTRAN IV or Basic Assembler jobs from his terminals. RAX supports USA Basic FORTRAN with the following exceptions: embedded blanks are not permitted, and reserved words cannot be used in the program. All input/output must be programmed in FORTRAN. Execution of privileged instructions in a user program is not allowed by RAX.

. A DISPLAY command is available for total or selective listing of a user's input or library files.

Use: Sustained access to a System/360 from remote locations, enable engineers, scientists, and other users to realize fast turnaround and reduced problem solution time. FORTRAN programmers can compile, modify, and execute programs from remote terminals, while non-programmers may use programs previously stored in the RAX library. Familiarity with the RAX terminal command language and the operation of the terminal device, enables the user to exploit the computational power of System/360 in a convenient manner.

RAX provides a facility for conversational interaction between a user and an executing program. This is accomplished by the use of input/output statements in a problem program which addresses the user's terminal as an I/O device. Thus, programs can be written to take advantage of the "on-line" presence of the user by permitting him to selectively modify his input, observe intermediate results, and alter parameters – or perhaps the execution sequence – of the program based on his interpretation of these results.

Customer Responsibilities: A customer using RAX must take the following steps before installation to insure satisfactory operations:

1. Order and install (satisfactorily) the communications equipment required.

2. Train operators to use the terminal command language, the programming languages, and terminal operations.

3. Familiarize a systems programmer with the internal operations of the system.

Sales Information: Most System/360 Model 30, 40, or 50 customers and prospects are potential prospects for RAX.

. RAX can constitute the entire justification for a system in engineering research firms, in universities, or in engineering departments of large firms.

. RAX provides justification for upgrading and adding equipment for customers who want to provide access to a computing service for their scientific and technical personnel.

RAX enables IBM customers to acquaint themselves with remote computing time-sharing systems. A small additional investment permits batch-oriented installations to evaluate the benefits of this system concept for their own operations.

By building a library of interactive application programs, an installation can extend the capabilities of System/360 to a broader range of users.

Programming System: RAX is written in BPS Basic Assembler Language.

Minimum System Requirements: System/360 Model 30F with one Selector Channel, Interval Timer, Storage Protection, Decimal Arithmetic, Floating Point Arithmetic features ... 1052 Printer-Keyboard Model 8 as a system console ... 2540 Card Read Punch ... 1403 Printer Model 2, 3, 7 or N1 ... two 2311 Disk Storage Drives; for attaching 1050 Data Communication Terminals EITHER a 2702 Transmission Control with Terminal Control - Type 1 (#4615), Selective Speed (#9684), and appropriate line adapters OR a 2701 Data Adapter Unit with Terminal Adapter - Type 1 (#4643 or 4646) and appropriate line adapter for each line (up to 4). Up to ten 1050 Data Communication Terminals may be attached to the minimum configuration. 2260 Display Stations are not supported on the 64K byte configuration.

Terminal Configuration: The minimum IBM 1050 Data Communication Terminal consists of: one IBM 1051 Control Unit Model 2 with the First Printer Attachment feature (#4408) and one IBM 1052 Printer-Keyboard Model 2. The 1052 Printing Element used by RAX is Data 1 font (#9575 or #9576). The 1050 can utilize the 1054 Paper Tape Reader or 1056 Card Reader attached as Reader #1 on the 1051. For use with the 1056 cards can be prepared on either the 26 or 29 Keypunch. The 1056 must have the Extended Character Read Special Feature.

Below are indicated 1050 special features that can be used with RAX (A); features that can be attached but are not utilized by the system (B); and features that must not be attached to a RAX terminal (C). (AR) status means that, where the component is installed, the referenced feature must be available.

Component	Feature No.	Status
1051 Control Unit Model 1 & 2		
I/O Unit Attachments		
Card Punch Attachments	1635	B
1st Printer Attachment for mdl 1 or 2	4408	AR for 1052
1st Punch Attachment	4410	AR for 1055, 1057, 1058
1st Reader Attachment	4411	AR for 1054, 1056
2nd Printer Attachment	6381	B
2nd Punch Attachment	6383	B
2nd Reader Attachment	6384	B
Auto Fill Char Cen	1287	B
Auto Ribbon Shift & Line Feed Select	1295	B
Audible Alarm	1307	B
Automatic EOB	1313	A
CPU Attachment	3130	C
Forms Stand Stacker	4450	B
1447 Attachment	4461	C
Home Comp Recgntn	4605	B
Home Correction	4607	B
Home Loop Input Component Interlock	4606	B
IBM Line Adapter	4647	A
IBM Line Adapter Subchannel 1	4691	A
Subchannel 2	4692	A
Subchannel 3	4693	A
Subchannel 4	4694	A
IBM Line Adapter	4790	A
I/O Comp Table	4632	B
Keyboard Request	4770	A
Line Correction	4795	B
Line Cor Release	4796	B
Master Station	5050	B
Open Line Detection	5465	B
Reader Stop Prefix J	6060	B
Switch Unit for Mod 1	7660	C
for Mod 2	7661	C
Tel Line Attachment	7835	C
Vertical Forms Control	8715	A
1052 Printer-Keyboard mdl 1 or 2 only		A
Accelerated Carrier Return	1006	B
Auto EOB	1313	A
Forms Feed Control	4452	A
Home Loop Input Component Interlock	4606	B
Open Line Detection	5465	B
1053 Printer Mdl 1		B
1054 Paper Tape Reader mdl 1		A
Edge-Punch Read	3570	C
Reels, Center Roll Feed and Take-up	6120	B
Telegraph Speed	7910	C
1055 Paper Tape Punch mdl 1		A
Edge-Punching	3571	C
Reel-Take-Up	6121	B
1056 Card Reader (Model 1 Recommended)		A
Card Reader Program	1640	B
Extd. Character Reading	3861	AR
Feed, 51 Col Card	4004	C
Feed, Short Card Proc	4006	C
High Speed Skp	4595	B
Telegraph Spee	7910	C

1057 Card Punch, Model 1		A
Extd. Character Punch	3860	AR
Operator Panel	5478	CB
1058 Printing Card Punch, Model 1		C

For systems larger than 64K, support is provided for IBM 1050 Data Communication Terminals and/or 2260 Display Stations. Additionally, work file capability and expanded program save features are available with the larger configurations. The IBM 2260 Display Station must have an Alphameric Keyboard feature and be connected to the multiplexor channel through a directly attached 2848 Display Control Model 3 with the Non-Destructive Cursor feature. One 2848 Model 3 with up to eight 2260 Display Stations is supported.

The 128K byte core system (Processing unit model G) will support a maximum of thirty 1050s and two 2260s. A tradeoff on core storage will allow one 2260 to replace three 1050s and vice versa. For purposes of calculating the mix of terminal lines entering the system, 600 bytes of memory are required for each 1050 terminal and 1800 bytes per 2260 terminal after the basic I/O routines are incorporated.

Maximum Support Configuration: System/360 Model 50 H (256K byte memory) with two Selector Channels, Interval Timer, Storage Protection, Decimal Arithmetic, Floating Point Arithmetic, 1052 Printer-Keyboard Model 7, 2540 Card Read Punch, 1403 Printer Model 2, 3, 7 or N1, eight 2311 Disk Storage Drives, two 2702 Transmission Controls up to sixty-three 1050 Data Communications Terminals, one 2848 Display Control Model 3 with Non-Destructive Cursor feature and up to eight 2260 Display Stations with the Alphameric keyboard feature (with a maximum of sixty-three 1050s and 2260s combined), four 2400 9-track tape drives.

Basic Program Material:

Publications* -- Application Directory ... Users Manual (H20-0354) ... Operators Manual (H20-0355).

Machine Readable** -- Object program load modules and sample problem decks are available on either one 9-track DTR (800 or 1600 bpi) or one 7-track DTR (800 cpi) - Data Conversion feature required.

Optional Program Material:

Machine Readable** -- Source Decks are available on either one 2400' reel of magnetic tape 9-track (800 or 1600 bpi) or 2400' reel of magnetic tape 7-track (800 cpi) - Data Conversion feature required.

Ordering Procedure: See the Branch Office Manual, DP Sales Activity section, page 4-401.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering, if the distribution medium is not specified on the program order card, 9-track at 800 bpi will be forwarded.

DTRs are provided by PID; no tape submittal is required.

Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form).

Note: Systems Generation -- Distribution on the RAX program will be on tape. RAX users must have access to tape configuration on which to punch the object and source program decks.

Additional Program Support Material: Application Description Manual (H20-0353) ... System Manual (Y20-0101).

Reference Material: IBM System/360 Basic FORTRAN IV Language (C28-6629) ... BPS Basic Assembler Language (C28-6503) describe the languages implemented under RAX.

For further information contact your Regional Scientific Marketing Manager.

IBM System/360 Communication Network Design Program (CNDP/360)

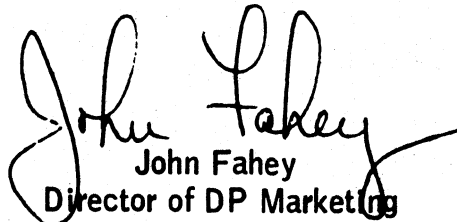CNDP/360 may now be ordered. Shipments will begin the week ending July 7, 1967. (360A-SE-28R)

This IBM CONFIDENTIAL program is a valuable tool which will aid in the design of the communication network portion of the telecommunications system. The program will construct an economical and functional communication network configuration consisting of multipoint circuits. Multipoint circuits are characterized by the connection of more than one terminal on a single communication line. The network formed will be based on line cost and performance. The program's objective is to minimize line cost while still satisfying a given line performance criterion. The program can handle any line speed; however, only one line speed can be considered in any given network design run.

Ordering Procedure

To order the CNDP, submit a Program Request Card and a letter of authorization from the Field System Center Manager to the Program Information Department. The letter from the Field System Center must state that there is a need for the IBM CONFIDENTIAL program and that the Branch Office System Engineers are qualified in the use of the program.

A copy of this letter is to be sent to the Manager of Dept. H04, SMTD, Poughkeepsie. One request card must be submitted for each program ordered.

Additional details are on the back. For further information contact your Field System Center.

John Fahey
Director of DP Marketing

Release Date: June 30, 1967

Distribution: All Areas

SALES MANUAL TEXT

Communication Network Design Program: To assist in the design of the communication network portion of a tele-communications system, this System/360 program will operate under both the Disk Operating System (DOS) and the Tape Operating System (TOS). The Communication Network Design Program/360 (360A-SE-28R) will provide a valuable tool for the design and implementation of communication networks, both small and large. The program is available on an IBM Confidential basis only and is not to be released to customers.

Description: This program will aid in the design of the communication network portion of a tele-communications system. The program will construct an economical and functional communication network configuration consisting of multipoint circuits. Multipoint circuits are characterized by the connection of more than one terminal on a single communications line. The network formed will be based on line cost and performance. The program's objective is to minimize line cost while still satisfying a given line performance criterion. This performance criterion may be defined by the user as a specified line utilization or a desired line response time. The program can handle any line speed; however, only one line speed can be considered in any given network design run.

Features: CNDP/360 provides the user with all the capabilities of the 7040/7044 and 7090/7094 CNDP program. These capabilities include: design of networks for inquiry, message control and information handling system applications ... design for any line speed ... design considers cost of communication lines and associated charges ... permits the design of several network alternatives ... provides a computer designed network suitable for customer presentation ... reduces the time required to perform necessary analysis of design parameters.

CNDP/360 has been extended to handle multiple tariffs and up to 1500 remote locations when 128K bytes of core is available. In addition, program run time has been greatly reduced with no sacrifice of accuracy.

Special Sales Information: This program is not to be modified by the user due to the sensitivity of the algorithm used.

Use: The user must prepare punched card input of pertinent information in accordance with specific card formats. Inputs and output traffic volumes for each remote location must be supplied. A rectangular coordinate system must be established (AT&T V&H coordinates may be used) with each point defined geographically by a pair of coordinates. The user must describe the characteristics of the information to be handled, the communications tariffs to be used, and a line performance criterion. The program edits all input, indicates errors, performs the necessary computation for constructing a line utilization table, builds an economical, if not minimum, multipoint network based on appropriate tariffs and line utilization, and produces a detail listing of this network with cost statistics.

User Responsibilities: An understanding of communication concepts and facilities, their use and implementation ... collection and synthesis of meaningful data ... careful analysis of program output for intelligent usage.

Programming Systems: CNDP/360 is written in Assembler language and operates under control of either DOS/360 or TOS/360.

Minimum System Requirements for DOS/360: A 2030 model E with Universal Instruction Set; 1442, 2501, 2520, or 2540 Card Reader Punch; 1403, 1404, 1443 or 1445 Printer; and one 2311 Disk Storage Drive.

Minimum System Requirements for TOS/360: A 2030 model E with Universal Instruction Set; 1442, 2501, 2520, or 2540 Card Reader Punch; 1403, 1404, 1443 or 1445 Printer; and three 2400 series magnetic tape units.

Additional core will permit larger networks to be constructed.

Basic Program Material:

Publications* -- Application Directory ... Program Reference Manual (Z20-0833).

Machine Readable** -- The program object decks and sample problem card decks are available on one 9-track DTR (800 or 1600 bpi) or one 7-track DTR (800 cpi) Data Conversion feature required.

Ordering Procedure: To order the CNDP, submit a Program Request Card and a letter of authorization from the Field System Center Manager to PID. The letter from the Field System Center must state that there is a need for the IBM CONFIDENTIAL programs and that the Branch Systems Engineers are qualified in the use of the program.

A copy of this letter is to be sent to the Manager of Department H04, SMTD, Poughkeepsie. One request card must be submitted for each program.

See the IBM Branch Office Manual, DP Sales Activity section.

*If only the form numbered manual is required, order it from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering, if the distribution medium is not specified on the program order card, 9-track at 800 bpi will be forwarded.

DTRs will be supplied by PID; no tape submittal is required.

Additional Program Support Material: Application Description (Z20-1811-1).

For further information contact your Field System Center.

IBM System/360 Scientific Subroutine Package

Program Announcement Letter P67-26 announced
the availability of Version 2 (360A-CM-03X).
This set of over 200 mathematical and statistical subroutines has up to this time been
available on 7-track or 9-track magnetic tape. Effective with Version 2, Modification
Level 1, SSP/360 may be ordered on one 1316 Disk Pack or 7- or 9-track tape.

Note: Current users will automatically receive the modification deck required to
update Version 2 from Modification Level 0 to Modification Level 1.

For details see the attached sales manual page. The Basic Program Material section
has been updated to include availability on disk pack.

John Fahey
Director of DP Marketing

Attachments [7]: P 11, P 360A.7, P 1130.7, P 1130.9, P 1130.15,
P 1130.17 and P 1800.5

Release Date: July 10, 1967

Distribution: All Areas
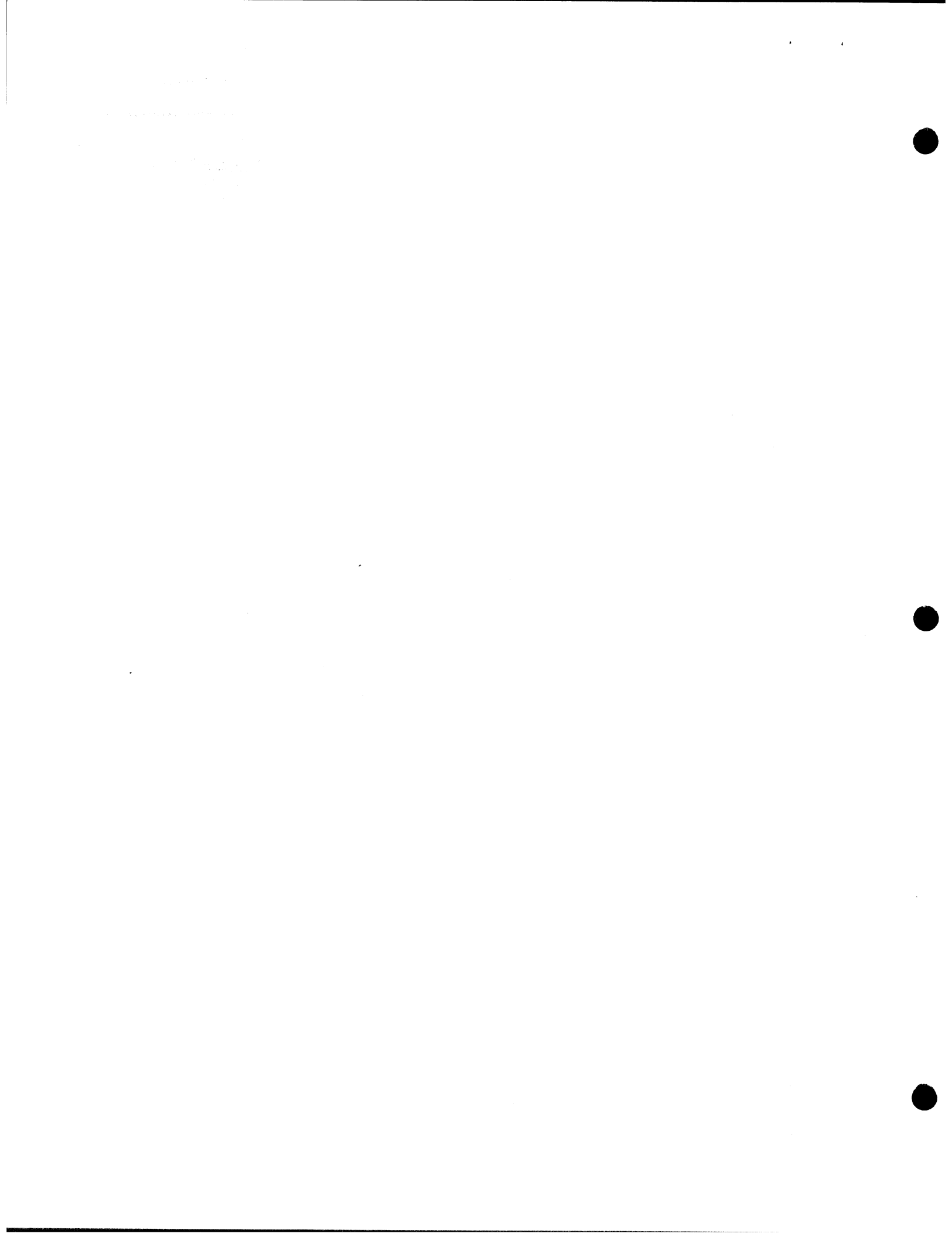
● IBM 1400 Autocoder to COBOL Conversion Aid Program (ACCAP)

Today, IBM is announcing the availability of a new conversion aid to assist customers planning to convert their 1400 series Autocoder or SPS programs to System/360 COBOL. The program is now available from PID (360A-SE-19X).

Description

ACCAP is a System/360 Application Program which accepts as input source statements written in Autocoder or SPS for the 1401, 1410, 1440, 1460, and 7010 systems. It produces System/ 360 COBOL statements when possible and diagnostic messages in the case where the program is unable to complete the translation.

ACCAP is an extension of IBM's continuing effort to supply tools to facilitate transition to System/ 360. Its purpose is to reduce the costs and manpower requirements for converting 1400 series programs to System/360 COBOL by:

1. Recoding to COBOL as many Autocoder statements as possible and identifying those statements that cannot be translated.

2. Generating syntactically correct COBOL which reduces coding and clerical errors.

3. Automatically producing a deck of the generated COBOL statements thus reducing key-punching requirements.

4. Providing a facility to convert to a problem oriented language that can be easily used as a new base for future additions, changes, and development.

5. Retaining the original program logic and symbols to facilitate the conversion to COBOL and the testing of the new program.

6. Providing documentation and diagnostics for the new COBOL program in terms of the original Autocoder program.

ACCAP performs the conversion on a statement-for-statement basis; therefore, the generated code may not be as optimum as COBOL coding written expressly for System/360. Where the program is unable to translate the Autocoder (SPS) source statement, it will provide a diagnostic message. Thus a manual coding effort is required to complete the new COBOL source program prior to its compilation and testing.

Special Sales Information

Before presenting ACCAP to the customer, the marketing representative should be completely informed as to the capabilities of the program, the objectives for which it was developed, and the conditions under which it should be used. This information is contained in the Application Description Manual and in the slide presentation available in each branch office. This material will also supply information as to the execution of the program based upon development and testing experiences.

In addition, the marketing representative should insure that his customer properly evaluates ACCAP for his installation and recognizes his responsibilities as stated in the sales manual page, Customer Responsibility section (see back of letter for text that will appear in the sales manual). It should also be recognized that customers new to COBOL will require education and guidance in the use of COBOL.

See the back of this letter and the Application Description Manual (H20-0352) for additional details.

For further information contact your Field Systems Center.

John Fahey
John Fahey
Director of DP Marketing

Release Date: July 12, 1967

Distribution: All Areas

1400 Autocoder to COBOL Conversion Aid Program (ACCAP):   ACCAP is intended
to assist in con-
verting 1400 series
Autocoder or Symbolic Programming Systems (SPS) programs to System/360 COBOL.
(360A-SE-19X)

Description: ACCAP is a System/360 Application Program which accepts as input
source statements written in Autocoder or SPS for the 1401, 1410, 1440, 1460
and 7010 systems. It produces System/360 COBOL statements when possible and
diagnostic messages in the case where the program is unable to complete the transla-
tion.

The purpose of ACCAP is to reduce the costs and manpower requirements for convert-
ing 1400 series programs to System/360 by (1) recoding to COBOL as many Auto-
coder statements as possible and identifying those statements that cannot be translated
... (2) generating syntactically correct COBOL which reduces coding and clerical
errors ... (3) automatically producing a deck of the generated COBOL statements thus
reducing keypunching requirements ... (4) providing a facility to convert to a problem
oriented language that can be easily used as a new base for future additions, changes
and development ... (5) retaining the original program logic and symbols to facilitate
the conversion to COBOL and the testing of the new program ... (6) providing docu-
mentation and diagnostics for the new COBOL program in terms of the original Auto-
coder program.

ACCAP performs the conversion on a statement-for-statement basis; therefore, the
generated code may not be as optimum as COBOL coding written expressly for Sys-
tem/360. Where the program is unable to translate the Autocoder (SPS) source
statement, it will provide a diagnostic message. Thus a manual coding effort is
required to complete the new COBOL source program prior to its compilation and test-
ing.

Features: Machine assisted conversion of your customer's Autocoder (SPS) program
to a problem oriented language ... generates COBOL statements using the same
symbolic labels of the Autocoder program, supplemented with information indicating
their original use ... all Autocoder comments are included on the COBOL listing
and comment cards become COBOL NOTEs in the new source deck ... the output
listing allows a programmer to relate the original Autocoder statements to the generated
COBOL statements ... diagnostics, provided on the output listing, highlight the
specific statements which require user attention ... retention of the original program
logic allows the user to relate this logic to the new COBOL program ... no user
modifications to the Autocoder source programs are required ... testing of the new
COBOL program is facilitated by the use of the generated cross-reference listing ...
produces properly structured COBOL divisions in sequence and creates a syntactically
correct COBOL source deck ... improves the effectiveness of your customers' pro-
gramming staff by relieving them of much of the clerical effort associated with pro-
gram conversion.

Customer Responsibility: The potential user must become thoroughly familiar with
the capabilities and limitations of ACCAP to determine the effectiveness of the pro-
gram for his installation. The economies of using ACCAP in terms of manpower,
machine time, and performance of the resulting program must be evaluated. Further,
he should make trial conversions of representative production programs before deciding
on general use of ACCAP.

The Application Description Manual (H20-0352) was specifically designed to aid
your customer in making this decision.

The customer should determine the suitability of the Autocoder program for Conversion
to COBOL. In addition, he should insure that the Autocoder (SPS) source programs
used correctly reflect the current production run.

Use: The conversion process proceeds as follows: add the necessary control cards
(approximately 6) to the selected Autocoder or SPS source deck ... execute ACCAP ...
examine ACCAP output and manually complete the conversion by resolving the diagnos-
tics as indicated on the COBOL output listing; the extent of this manual effort is a
function of the programming techniques and statements used in the Autocoder (SPS)
program which cannot be converted by ACCAP; programs should be selected for ACCAP
conversion based on the knowledge of ACCAP's capabilities.

Special Sales Information: Before presenting ACCAP to the customer, the marketing
representative should be completely informed as to the capabilities of the program,
the objectives for which it was developed and the conditions under which it should
be used.

This information is contained in the Application Description Manual and in the slide
presentation available in each branch office. This material will also supply informa-
tion as to the execution of the program based upon development and testing experiences.

In addition, the marketing representative should insure that his customer properly
evaluates ACCAP for his installation and recognizes his responsibilities as stated
above. It should also be recognized that customers new to COBOL will require
education and guidance in the use of COBOL.

Programming Systems: ACCAP contains its own control program which was adapted
from OS/360. This control program is independent of the user's System/360
operating system and allows Autocoder or SPS programs or both to be stacked for
input.

Minimum System Requirements: A System/360 Model G40 (131K) with Decimal
Arithmetic ... 1052 Printer-Keyboard Model 7 ... 2540 Card Read Punch Model 1
... 1403 Printer ... two 2311 Disk Storage Drives.

The minimum configuration accepts Autocoder or SPS source decks of up to approxi-
mately 6,000 cards. Source decks up to 10,000 cards can be handled by adding
to the minimum configuration one 2311 Disk Storage Drive or two 2400 tape drives.

The same EC levels required for OS/360, Release 11, are required for execution of
ACCAP.

Basic Program Material:

Publications* -- Application Directory ... Programmers Manual (Y20-0105) ...
Operators Manual (Y20-0106).

Machine Readable** -- The dump/restore image of ACCAP system pack is available
on one 9-track Magnetic Tape at 800 bpi, one 9-track Magnetic Tape at 1600 bpi,
one 7-track Magnetic Tape at 800 cpi (Data Conversion feature required), or one
1316 Disk Pack.

Ordering Procedures: See Branch Office Manual, DP Sales Activity section.

*If only the form numbered manuals are required, order from Mechanicsburg -- not
from PID. Customer orders for the manuals from Mechanicsburg require Branch
Manager approval.

**Magnetic Tapes (2400') may be forwarded or ordered (the order card should accom-
pany the tape order form); disk packs must be forwarded to PID with the program
order card.

When ordering this program, the requester must indicate the distribution
medium required on the back of the program order card. If not specified,
9-track at 800 bpi will be forwarded.

Optional Program Material: consisting of the source program and a System
Manual is not available at this time. Availability announcement will be made in
August.

Additional Program Support Material: Application Description Manual (H20-0352).

For further information contact your Field Systems Center.

Basic PL/I for TOS/360

System Release 9, which includes the initial availability of TOS/360 Basic PL/I, is now available.

PL/I is available NOW for users of TOS/360. This latest and most powerful addition to Tape Operating System/360 offers versatility, economy, and efficiency to those users who take the opportunity to switch to the one higher level language that can do the job of all the others combined. When presenting this advanced concept in programming languages to your TOS/360 customer and prospect, remember the following:

- Programming in Basic PL/I, starting at the 16K level, permits and encourages a wider range of applications.

- Basic PL/I is one language that solves both commerical and scientific problems.

- Economic use of the programmer's time is achieved since Basic PL/I no longer requires specialization in one direction for commercial programming and in another for scientific programming.

Furthermore, combining the needs of commercial and scientific users in one installation enables the commercial group to find technical uses of the computer -- such as statistical forecasting and linear programming. On the other hand, the scientific programmer is provided with more flexible input and output operations to rearrange and edit technical data in order to expedite the preparation of reports.

The TOS/360 Basic PL/I Compiler provides, in a single high-level language, many new and significant features, such as:

- Comprehensive data conversion and editing facilities.

- Data structures for alphameric information.

- Ability to process a wide range of data types, including character and bit strings, fixed and floating decimal, and fixed and floating binary.

- Both structured data and array data have arithmetic capability, including expressions whose elements are simple variables, structured data, and arrays.

- Data Stream Transmission.

- Record Transmission capability.

Basic PL/I provides the user with a key for solving both his computing and his resource allocation problems. It also enables the user to employ an organization of programmers using one common language, thus reducing training costs and enhancing communication between scientific and commercial applications groups.

System Requirements

The minimum features required are the same as those required for TOS.

16K bytes of main storage (see Note 1) ... Standard Instruction Set ... One I/O channel (either multiplexer or selector) ... One card reader ... One card punch ... One printer ... One 1052 Printer-Keyboard ... four 2400 Series Magnetic Tape Units.

For further discussion of system configuration, see IBM S/360 TOS, System Control and System Service Programs, C24-5034-1.

Program Material and Ordering Procedures -- See the reverse side.

Additional Information

A brief description of some of the more important features of Basic PL/I follows:

- All three types of declarations, explicit, contextual, and implicit are employed by Basic PL/I. Thus, full declaration of data, as in COBOL, is possible as well as the FORTRAN-like default declarations.

- Arithmetic and character string data may be declared by using the PICTURE attribute.

- Automatic storage class has been provided. In applications where the programmer can arrange his program in parallel blocks, each of them dealing with different data, significant savings of data storage can be obtained by the usage of automatic storage. Based variables are provided with this compiler where their main application is in the area of locate mode, input, and output.

- For input/output both RECORD ORIENTED and edit directed stream I/O are provided. Edit directed output will be of great interest not only to FORTRAN-oriented programmers but also for use in report writing. Lines can be broken down into more than one output statement allowing flexible arrangement of the print line by program control. The DISPLAY statement enables communications with the operator at execution time.

- All information to describe the internal attributes of a data set (block size or record format) can be specified at compile time with TOS/360. This information is specified in the ENVIRONMENT attribute. For this reason, all files except the PL/I file SYSIN and SYSPRINT must be declared explicitly.

Unbuffered files are implemented as TOS/360 work files. Here, the same file may be opened for output, closed and opened again for input. These files may be used to hold intermediate data and require less core storage than other files.

To fit larger programs into small machines, an overlay facility has been included in the Basic PL/I Compiler. This facility uses the phase structure provided by the TOS/360 Linkage Editor. The Statement CALL OVERLAY ('phase - name') loads the required phase into the main storage assigned by the TOS/360 Linkage Editor. Note: An actual procedure within a phase is called by a normal CALL statement.

The based variables and pointer variables of the LIST PROCESSING facility of the full PL/I language have been included in this compiler. Their use has three basic purposes:

- For locate mode input/output
- Multiple record formats
- Simulation of arrays of structure

Basic PL/I Operations Environment

The Basic PL/I Compiler for TOS/360 operates in the same manner as any other TOS/360 Compiler. Three work files (SYS001, SYS002, and SYS003) are used by the compiler. The options LINK and DECK may be specified concurrently for Basic PL/I. In this case, output to SYSLINK and a card deck will both be produced.

The following listings are optionally provided at compile time:

- Source program
- Symbol table
- Diagnostics
- Offset table
- Object code
- Block table

Performance Estimates

Refer to SRL System/360 Tape Operating System C24-5020-3 which is now available at Mechanicsburg.

A Basic PL/I Reference Card (X20-1749-0) is also available from Mechanicsburg.

John Fahey
Director of DP Marketing

Note 1: Compilation of Basic PL/I programs can be performed by a TOS/360 System with 16K main storage. However, most user object programs will require a 24K minimum memory. Object programs that can be executed in 16K are subject to limitations. For many programs, these limitations can be reduced by program segmentation through the use of overlays; but this technique may result in performance degradation.

Basic Program Material:

The following SRL publications and documentation appropriate
to the components ordered are shipped by PID with each initial
TOS/360 order. Machine readable material is distributed as
indicated below.

SRL Publications --

System/360 Disk and Tape Operating Systems - Concepts and Facilities TNLs N24-5182, N24-5191, N24-5233	C24-5030-2
System/360 Tape Operating System - System Generation and Maintenance	C24-5015-4
System/360 Tape Operating System - Performance Estimates	C24-5020-3
System/360 Tape Operating System - Operating Guide TNL N24-5209, N24-5288	C24-5021-2
System/360 Tape Operating System - System Control and System Service Programs TNL N24-5219, N24-5271, N24-5290	C24-5034-1
System/360 Tape Operating System - Supervisor and Input/Output Macros	C24-5035-2
System/360 Tape Operating System - Data Management Concepts TNL N24-5194	C24-3430-2
System/360 Disk and Tape Operating Systems -Assembler Specifications	C24-3414-4 Note 1
System/360 Disk and Tape Operating Systems - Tape Sort/Merge Program Specifications TNLs N21-5036, N21-5042, N21-5050	C24-3438-3 Note 2
System/360 Tape Operating Systems Autotest Specifications TNL N21-5054	C24-3441-3
System/360 Disk and Tape Operating Systems - Utility Program Specifications	C24-3465-3 Note 3
System/360 Disk and Tape Operating Systems - COBOL Language Specifications TNL N24-5188	C24-3433-3
System/360 Disk and Tape Operating Systems - COBOL Programmers Guide TNL N24-5264	C24-5025-3
System/360 Basic FORTRAN IV Language	C28-6629 Note 4
System/360 Disk and Tape Operating Systems - FORTRAN IV Programmers Guide	C24-5038-1 Note 5
System/360 Disk and Tape Operating Systems - Report Program Generator Specifications TNL N24-5195	C26-3570-4
System/360 Disk and Tape Operating Systems - Utility Macro Specifications TNLs N24-5184, N24-5268	C24-5042-1
IBM System/360 Disk and Tape Operating Systems PL/I Programmers Guide	C24-9005-1
PL/I Subset Language Specifications	C28-6809-1

Notes:

1. SRL C24-3414-2 plus TNLs N24-5057, N24-5076, N24-5107,
    N26-0516, N26-0520, N26-0533 and N26-0536, or SRL
    C24-3414-3 plus TNLs N26-0516, N26-0520, N26-0533 and
    N26-0536 may be used in lieu of the SRL C24-3414-4 plus
    TNL N26-0536.

2. SRL C24-3438-1 plus TNLs N21-5021, N21-5036, N21-5042,
    N21-5050, N24-5064 and N24-5131, or SRL C24-3438-2 plus
    TNLs N21-5036, N21-5042 and N21-5050 may be used in
    lieu of the SRL C24-3438-3.

3. SRL C24-3465-2 plus TNLs N21-5024, N21-5044 and N21-5047
    may be used in lieu of the SRL C24-3465-3.

4. SRL C24-5014-0 plus TNLs N21-5018, N24-5014 and N24-5069,
    or SRL C24-5014-1 may be used in lieu of SRL C28-6629-0.

5. SRL C24-5038-0 plus TNLs N21-5034 and N21-5053 may be
    used in lieu of the SRL C24-5038-1.

Documentation -- Program Material List; Attachment I-Temporary
  Restrictions; Attachment II -- Retention of Supporting Docu-
  mentation.

Machine Readable -- TOS/360 is distributed on one 2400 foot
  reel of magnetic tape, either 9-track (800 bpi), or 7-track
  (800 bpi) Data Conversion feature required.

Ordering Procedures

**If only the numbered publications or additional copies of
the publications are required, order them from the IBM Distri-
bution center, Mechanicsburg -- not from PID.**

New Users -- TOS/360 is distributed as -- one pre-generated sys-
  tem with a 6K Supervisor (360M-SV-413) ... or one pre-generated
  system with an 8K Supervisor (360M-SV-414).

Each TOS/360 order includes the entire collection of machine
readable program components in both Core Image and Relocatable
Libraries, listed below.

The System Control component and one of the two Supervisor
components are required. To order these components, specify
on the IBM Program Order for IBM System/360 Operating Systems
[120-1411] -- System Control and Basic IOCS, 360M-CL-405 and
Supervisor (6K), 360M-SV-413 or Supervisor (8K), 360M-SV-414.

One supervisor component should be specified when ordering the
system. If not specified, the 6K Supervisor will be shipped.

Program components may be selected from the following list.
Each component for which program documentation and maintenance
material is required must appear on the order form.

Supervisor (6K)	360M-SV-413 or
(8K)	360M-SV-414
System Control	360M-CL-405
IOCS	360M-IO-404
MPS Utility Macros	360M-UT-411
Utilities	360M-UT-403
Tape Sort/Merge	360M-SM-400
Assembler	360M-AS-465
COBOL	360M-CB-402
FORTRAN IV	360M-FO-409
RPG	360M-RG-408
+Compiler I/O Modules	360M-IO-412
Autotest	360M-PT-407
Optical Character Reader	360M-IO-417
PL/1	360M-PL-410

(change from previous release.)

(Component new with this release.)

All components are now available from PID.

+Should be ordered if either COBOL (360M-CB-402) or RPG (360M-
RG-408) is ordered.

If the distribution media is not specified on the IBM Program
Order, 9-track tape at 800 bpi will be forwarded.

Magnetic tapes may be ordered or forwarded in accordance with
current procedures as described in the DP Sales Activity Sec-
tion of the Branch Office Manual.

Current Users -- Present users will receive a prepunched Pro-
  gram Order Card and a letter announcing the availability of
System Release 9 and its Maintenance Package. This card,
following IBM Branch Office approval, must be used to order
either the Maintenance Package or a replacement TOS/360
from PID.

The maintenance package for TOS/360 system release 9 is
available on one 2400 foot reel of magnetic tape, either
9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, data
conversion feature required.)

Complete ordering instructions are provided in the letter
to users.

Maintenance Packages will be available from PID for a period of
60 days following the availability announcement of System
Release 9.

67-72

[A] DOS/360

System Release #12, which includes support for three new features in Basic Telecommunications Access Method (BTAM) 360N-CQ-469 , is now available. The features are:

. Autopoll
. Binary Synchronous Communications (BSC)
. Code Translation

Changes to support these features are totally contained in the BTAM Component. The only other changes within the DOS/360 is to the DOSCHLV Macro to update the Change Level of the BTAM modules and macros. Therefore, only DOS/360 BTAM users should order Release 12. All current users of DOS/360 BTAM must update their system with Release 12 to insure that future corrections may be implemented successfully.

The following is a description of the new features.

Autopoll

Autopoll is the hardware implementation of poll restart (i.e., polling the next terminal in the user's polling list upon receiving a negative response from a polled terminal). DOS/360 BTAM now supports this feature, which can very significantly reduce CPU interference due to non-productive polling.

The minimum system requirements for BTAM remain the same, with the following notations:

On the 2703, Autopoll is a standard feature.
On the 2702, Autopoll is a special feature (#1319)

Devices Supported

Autopoll - (START-STOP) - 2702, 2703, on System/360 Models 30, 40, 50, 65* and 75*.

*NOTE: The 2870 Multiplex Channel when used on the 2065-2075 must be at EC 705801.

Binary Synchronous Communications (BSC)

DOS/360 BTAM support has been expanded to include System/360* to System/360* communications, in addition to all previously supported terminals.

Binary Synchronous Communications use advanced techniques in data transmission including: code flexibility, additional functions and significantly improved data throughput.

Support is provided for switched and non-switched lines in point-to-point configurations, with speeds of up to 230,400 bits per second. In addition to code selection flexibility (including EBCDIC the S/360 data code), the Transparent Text feature enables the user to transmit any 8-bit combination (e.g., packed decimal or program instructions). For Binary Synchronous transmission, the telecommunications control unit must be attached to the System/360 channel as follows:

IBM 2701 Data Adapter Unit with Synchronous Data Adapter - Type II (SDA-II). The 2701 may be attached to either the multiplexer (switched or non-switched lines) or the selector channel (non-switched lines only).

Binary Synchronous Communication is supported for a point-to-point, switched or non-switched, System/360* to System/360* configuration.

*Models 30, 40, 50, 65 and 75.

BTAM supports the following Binary Synchronous line control functions and features.

Computer-to-Computer

Contention (pt to pt)
Headers and normal text
Inquiry and alternating replies
WABT (optional reply)
Transparent Text
Auto Dial/Auto Answer
Dial with and without identification

CONTENTS

Published by DP Sales Publishing Services, WTHQ

Disconnect
Conversational
EBCDIC Code
ASCII Code
Dual Communication Interface
Dual Code Feature

Supported on the 2703 with the availability of 2703 BSC unit.

Special Features Supported:

Synchronous Data Adapter - Type II (#7698, #7697, #7699) EBCDIC (#9060), ASCII (#9061), Dual Communications Interface (#3463, #3464, #3465), Transparency (#8029), Auto Call (#1314), Dual Code (#3455).

Code Translation Support

DOS/360 BTAM now provides macro instructions for both assembling Translation Tables and performing Code Translation during program execution.

Both input (transmission code to EBCDIC) and output (EBCDIC to transmission code) translations are greatly facilitated by the new translation macros. [Not applicable to audio response]

Publications: System/360 Disk Operating System Telecommunications Access Method, C30-5001-4.

Minimum System Configurations: 32K bytes of main storage ... Standard Instruction Set -- one Card Reader** ... one Card Punch** ... one Printer** ... one 1052 Printer-Keyboard ... one 2311 for systems residence on a selector channel ... a 2701 attached to a multiplexer channel and/or a 2701 attached to a selector channel ... System/360 Model 30, 40, 50, 65, 75 ... communications equipment necessary to interface to the communication lines.

**See Sales Manual pages on Programming (DOS/360 - Control Program Input/Output) for acceptable units and possible substitutions.

Program Material and Ordering Procedure -- See reverse side.

[B] DOS/360 - 10K Supervisor

The 10K Supervisor (360N-SV-473) announced in P67-63 requires Storage Protection feature (#7520) to correctly initial program load (IPL) the system as received from PID.

John Fahey
Director of DP Marketing

Basic Program Material

The following SRL publications appropriate to the components ordered are shipped by the Program Information Department (PID) with each initial DOS/360 order.

SRL Publications: Machine Readable Material is distributed as indicated below --

System/360 Disk Operating System

Operating Guide	C24-5022-2
TNLs N24-5193, N24-5286, N24-5249, N24-5303	
Concepts and Facilities	C24-5030-2
TNLs N24-5182, N24-5191, N24-5233	
Performance Estimates	C24-5032-2
TNLs N24-5293, N24-5310	
Systems Generation and Maintenance	C24-5033-3
TNLs N24-5295, N24-5309	
Data Management Concepts	C24-3427-1
TNLs N24-5122, N24-5169, N24-5197	
System Control and System Service Programs	C24-5036-1
TNLs N24-5218, N24-5289, N24-5248, N24-5302	
Supervisor and Input/Output Macros	C24-5037-2
TNLs N24-5306, N24-5312	
Basic Telecommunications Access Method	C30-5001-4
Utility Macros Specifications	C24-5042-1
TNLs N24-5184, N24-5268	
Vocabulary File Program for the 7772 Audio Response Unit	C27-6924-1
Utility Programs Specifications	C24-3465-3
(Note - SRL C24-3465-2 plus TNLs N21-5024, N21-5044 and N21-5047 may be used in lieu of SRL C24-3465-3)	
Tape Sort/Merge Program Specifications	C24-3438-3
(Note - C24-3438-1 and TNLs N21-5021, N24-5064, N24-5131, N21-5036, N21-5042 and N21-5050 or SRL C24-3438-2 plus TNL N21-5036, N21-5042 and N21-5050 may be used in lieu of the SRL C24-3438-3)	
Sort/Merge Program Specifications	C24-3444-2
(Note - SRL C24-3444-1 plus TNLs N21-5035 and N21-5049 may be used in lieu of the SRL C24-3444-2)	
COBOL DASD Macros	C24-5039-1
(Note - C24-5039 and TNLs N24-5142, N24-5181 may be used in lieu of C24-5039-1)	
Assembler Specifications	C24-3414-4
TNL N26-0536	
(Note - C24-3414-2 plus TNLs N24-5057, N24-5076, N24-5107, N26-0516, N26-0520, N26-0533 and N26-0536 or C24-3414-3 plus TNLs N26-0516, N26-0520, N26-0533 and N26-0536 may be used in lieu of C24-3414-4, and TNL N26-0536)	
COBOL Programmers Guide	C24-5025-3
TNL N24-5264	
COBOL Language Specifications	C24-3433-3
TNL N24-5188	
FORTRAN IV Programmers Guide	C24-5038-1
(Note - SRL C24-5038 plus TNL N21-5034 and N21-5053 may be used in lieu of C24-3444-2)	
FORTRAN IV Language	C28-6629
(Note - C24-5014 plus TNLs N21-5018, N24-5041 and N24-5069, or SRL C24-5014-1 may be used in lieu of SRL C28-6629)	
Report Program Generator	C26-3570-4
TNL N24-5195	
Autotest Specifications	C24-5062
QTAM Message Control Program	C30-5002-1
TNLs N30-5003, N30-5011	
Queued Telecommunications Access Method Message Processing Program Services	C30-5003-1
PL/I Subset Language Specifications	C28-6809-1
PL/I Programmers Guide	C24-9005-1
PL/I DASD Macros	C24-5059
TNL N24-5301	

Underlined items denote changes from previous release.

If only the publications or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

Documentation -- Program Material List ... Attachment I - Temporary Restrictions ... Attachment II - Special Instructions.

Machine Readable -- DOS/360 (without the Tele-processing components) is distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required) or one 1316 Disk Pack. These reels of magnetic tapes are in 1316 Disk Pack restore form. The DOS/360 data are preceded by an initialized 2311 Utility Program and a Tape-to-Disk program.

The Tele-processing components are distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required), or one 1316 Disk Pack.

Ordering Procedures

See DP Sales Activity section of the Branch Office Manual.

Magnetic Tapes (2400') may be forwarded to PID or ordered. The order card should accompany the tape or the tape order form; disk packs must be forwarded to PID with the program order card.

When ordering on magnetic tape, if the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

New Users -- Program components may be selected from the following list. Each component for which program documentation and maintenance material is required must appear on the order form.

Supervisor (6K)	360N-SV-474
Supervisor (8K)	360N-SV-475
Supervisor (10K)	360N-SV-473
System Control and Basic IOCS	360N-CL-453
Direct Access Method	360N-IO-454
Consecutive Disk IOCS	360N-IO-455
Consecutive Tape IOCS	360N-IO-456
ISFMS	360N-IO-457
Consecutive Paper Tape IOCS	360N-IO-458
BTAM	360N-CQ-469**
QTAM	360N-CQ-470
Compiler I/O Modules	360N-IO-476
Optical Character Reader	360N-IO-478
Autotest	360N-PT-459
Assembler	360N-AS-465
COBOL	360N-CB-452
COBOL DASD Macros	360N-CB-468
FORTRAN IV	360N-FO-451
Report Program Generator	360N-RG-460
Group 1 Utilities - Unit Recd/Disk	360N-UT-461
Group 2 Utilities - Tape	360N-UT-462
Group 3 Utilities - Data Cell	360N-UT-463
MPS Utility Macros	360N-UT-471
Vocabulary File Utility Program	360N-UT-472
Disk Sort/Merge	360N-SM-450
Tape Sort/Merge	360N-SM-400
PL/I	360N-PL-464

**Component changed from previous release.

DOS/360 is distributed as one pre-generated system with a 6K Supervisor ... or one pre-generated system with an 8K Supervisor ... or one pre-generated system with a 10K Supervisor.

The System Control and Basic IOCS component and one of the three Supervisor components are required. To order these components, specify on the IBM Program Order for System/360 Operating Systems (120-1411) -- System Control and Basic IOCS, 360N-CL-453 and Supervisor (6K), 360N-SV-474, or Supervisor (8K), 360N-SV-475, or Supervisor (10K), 360N-SV-473. Supervisor (8K), 360N-SV-475 assumes the users machine size to be at least 32K. If no supervisor is indicated on the order card, PID supplies the (6K), 360N-SV-474.

DOS/360 is available on two reels of magnetic tape or two disk packs.

The first volume contains all of the DOS/360 components listed above except the Tele-processing components (BTAM, QTAM, and the Vocabulary File Utility Program), which are contained in the second volume (including the Sample Program for 360N-UT-472, VFU1).

If the Tele-processing components are required, two volumes must be supplied to PID; if they are not required, only one volume need be supplied.

Current Users -- Current users will receive a prepunched Program Order Card and a letter announcing the availability of DOS Release 12. The letter instructs them to order this release through the branch office. Current users must use the prepunched card to order either the Maintenance Package or the Replacement System for Release 12.

Orders for the Release 12 Maintenance Package should be accompanied by one 9-track magnetic tape or one 7-track magnetic tape (Data Conversion feature required) or one 1316 Disk Pack.

Complete ordering instructions are provided in the letter to users

Maintenance Packages will be available from PID for a period of 60 days following the announcement of availability of System Release 12.

[A]   OS/360 Independent Utilities

Version 2 of the OS/360 Independent Utilities can be ordered
as separate components. They are:

S/360 Direct Access Storage Drive Initialization	360P-UT-213
Dump/Restore Program	360P-UP-214
Recover/Replace Program	360P-UP-215

Version 2 of these programs include operational improvements and support for the IBM 2302, 2303, and
2314 units.

All these programs should be ordered by System/360 users who do not have OS/360 Release 10 or later.
The DASDI program should be ordered by users of the System/360 Model 40 and 50 1410/7010 Emulator
Programs.

These programs are identical to the independent utilities provided with OS/360 Release 10 (360S-UT-507)
and later. Non-OS/360 users should not mistakenly order these as BPS utilities.

Systems Requirements: A 64K System/360.

Basic Program Material for each program

SRL Publications -- IBM Operating System/360 Utility programs, C28-6586-5.

Documentation -- Program Material List.

Machine Readable -- Object Deck is available in either card form, 9-track DTR (800 or 1600 bpi), or
7-track DTR (800 cpi) Data Conversion feature required.

Ordering Procedures

See the DP Sales Activity Section of the Branch Office Manual.

When ordering, if the distribution medium is not specified on the program order card, 9-track at 800 bpi
will be forwarded.

If only the publications or additional copies of the publications are required, order them from the IBM
Distribution Center, Mechanicsburg -- not from PID.

DTRs are supplied by PID; no tape submittal required.

Current users of the program will receive a prepunched program order card and a letter announcing the
availability of the new version. The letter instructs them to order the new version through the branch office.
Current users must use this prepunched program order card to order the new version.

[B]   PL/I

The only official designation of this programming language is PL/I. No other designations (Programming
Language 1, PL/1, etc.) are to be used.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

Attachments [7]: P 360A.17, P 360A.19, P 360A.21, P 360A.23, P 360A.25, P 360A.27, and
P 360A.29.
Release Date: July 24, 1967
Distribution: All Areas

IBM IBM World Trade Data Processing

[A] OS/360 Independent Utilities

Version 2 of the OS/360 Independent Utilities can be ordered
as separate components. They are:

S/360 Direct Access Storage Drive Initialization	360P-UT-213
Dump/Restore Program	360P-UP-214
Recover/Replace Program	360P-UP-215

Version 2 of these programs include operational improvements and support for the IBM 2302, 2303, and
2314 units.

All these programs should be ordered by System/360 users who do not have OS/360 Release 10 or later.
The DASDI program should be ordered by users of the System/360 Model 40 and 50 1410/7010 Emulator
Programs.

These programs are identical to the independent utilities provided with OS/360 Release 10 (360S-UT-507)
and later. Non-OS/360 users should not mistakenly order these as BPS utilities.

Systems Requirements: A 64K System/360.

Basic Program Material for each program

SRL Publications -- IBM Operating System/360 Utility programs, C28-6586-5.

Documentation -- Program Material List.

Machine Readable -- Object Deck is available in either card form, 9-track DTR (800 or 1600 bpi), or
7-track DTR (800 cpi) Data Conversion feature required.

Ordering Procedures

See the DP Sales Activity Section of the Branch Office Manual.

When ordering, if the distribution medium is not specified on the program order card, 9-track at 800 bpi
will be forwarded.

If only the publications or additional copies of the publications are required, order them from the IBM
Distribution Center, Mechanicsburg -- not from PID.

DTRs are supplied by PID; no tape submittal required.

Current users of the program will receive a prepunched program order card and a letter announcing the
availability of the new version. The letter instructs them to order the new version through the branch office.
Current users must use this prepunched program order card to order the new version.

[B] PL/I

The only official designation of this programming language is PL/I. No other designations (Programming
Language 1, PL/1, etc.) are to be used.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

Attachments [7]: P 360A.17, P 360A.19, P 360A.21, P 360A.23, P 360A.25, P 360A.27, and
P 360A.29.
Release Date: July 24, 1967
Distribution: All Areas

[A]   IBM Mathematical P

Version 1 Modification Level 2, which extends the input/output devices supported by MPS/360 to include the 2301 Drum Storage Device, is now available (360A-CO-14X).

Technical Newsletter Letters N20-1031-0 to the MPS/360 Linear Programming Users Manual (H20-0291-1) and N20-1030-0 to MPS/360 Application Description Manual (H20-0136-1) describe the use of this input/output unit.

Special Sales Information: This capability of MPS/360 is being distributed from the Program Information Department as a normal modification level; therefore, current users will not have to re-order the program.

For further information contact your regional Scientific Marketing Manager. For details see the back of this letter.

Ordering Procedures: See DP Sales Activity section of the Branch Office Manual.

If only the publications supporting this program are required, or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanicsburg — not from PID.

When ordering, if the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

DTRs are provided by PID; no tape submittal is required.

[B]   IBM System/360 Model 20 Tape Programming Support

The machine readable material for System/360 Model 20 tape systems will no longer be distributed as three separate sets of programs, dependent upon the machine configuration. Instead, all Model 20 Tape System users will receive one (identical) package containing all the available programs.

For distribution purposes, all of these programs will be packaged on a 9-track (800 or 1600 bpi) or 7-track (800 cpi) DTR. The 7-track DTR requires the Data Conversion feature.

There is no change in the way the programs can be retrieved from the DTR.

New publications involved in this change in packaging are: TNL N33-9008 to System/360 Model 20 TPS Operating Procedures, C24-9009 ... TNL N33-8505 to System/360 Model 20 Basic Assembler (Tape) Operating Procedures, C24-9011 ... TNL N33-8506 to System/360 Model 20 TPS Utility Programs, Operating Procedures, C26-3809.

Basic Program Material:

   SRL Publications -- IBM System/360 Model 20 Tape Programming System Operating Procedures C24-9009 and TNLs N33-9001, N33-9008 ... IBM System/360 Model 20 Tape Programming System Performance Estimates C24-9010 and TNL N33-9005 ... IBM System/360 Model 20 Basic Assembler Language C26-3602-3 ... IBM System/360 Model 20 Basic Assembler (Tape) Operating Procedures C24-9011 and TNLs N33-9002, N33-8505 ... IBM System/360 Model 20 Tape Programming System Utility Programs C26-3808-1 and TNL N33-9009 ... IBM System/360 Model 20 Tape Programming System Card-Resident Utility Programs Operating Procedures C26-3809 and TNLs N33-9003, N33-8506 ... IBM System/360 Model 20 Tape Programming System Control and Service Programs C24-9000-1 and TNL N33-9010 ... IBM System/360 Model 20 Disk and Tape Programming Systems Report Program Generator C24-9001-2 and TNL N33-9007 ... IBM System/360 Model 20 Disk and Tape Programming Systems Assembler Language C24-9002-2 ... IBM System/360 Model 20 Tape Programming System Sort/Merge Program C26-3804-1 ... IBM System/360 Model 20 Tape Programming System Input/Output Control System C24-9003-1 and TNL N33-9004.

   Documentation -- Program Material List and Attachment.

   Machine Readable -- All the Model 20 Tape programs are available on either one 9-track DTR (800 bpi or 1600 bpi) or on one 7-track DTR (800 cpi) Data Conversion feature required.

[C]   Correction to P67-73 (OS/360 Independent Utilities)

The program number for the Dump/Restore program should read 360P-UT-214 (not 360P-UP-214), and the number for Recover/Replace should read 360P-UT-215 (not 360P-UP-215).

John Fahey
Director of DP Marketing

Mathematical Programming System: Linear Programming is a Mathematical Programming technique for determining the optimum solution to a system of linear inequalities. This solution may be an optimum allocation of resources (capital, raw materials, manpower, etc.) to specified activities (investments, products, jobs) to obtain a particular objective (minimum expense, maximum profit) when there are alternate uses for these resources. Linear programming plays an important role in such areas as materials allocation, ingredient blending, (feed, flour, gasoline, etc.), production scheduling, distribution, and shipping. (360A-CO-14X)

Use: This programming system operates under control of the IBM Operating System/360. It consists of a number of routines called procedures, stored on the Program Library Residence device of Operating System/360. Only those procedures currently being executed are brought into main storage. The particular procedures to be executed are under the supervision of a control program prepared by the user. This control program is composed of statements which specify to the system the desired procedures to be executed. The sequence of these statements defines a solution strategy for solving a particular linear programming problem.

Features: The system utilizes the Revised Simplex Method (product form of inverse) with bounded variables and range constraints ... a highly efficient inversion technique using a triangularization method permits inversions to be made frequently, thus increasing the speed of succeeding iterations and maintaining a high degree of accuracy ... a multiple pricing method, adjusted for problem size and amount of available storage, reduces the amount of file processing and increases solution speed ... dynamic storage allocation provides for maximum utilization of available System/360 components ... maximum problem size is 4,095 rows ... conditional control statements permit alternate solution strategies to be implemented depending upon the conditions which arise during solution ... interrupt facilities provide the means for preplanning alternate strategies in the event of off-normal conditions ... simultaneous parametric programming on both the righthand side and objective function may be utilized ... parametric programming on matrix rows or columns ... modular design makes it easy to add, modify, replace or delete functions as new requirements develop ... provision for converting input data from the 7040/44, 1620 - 1311, and 1400 - 1311 Linear Programming Systems is provided.

Programming Systems: This program is written in the OS/360 Assembler Language. It uses the BSAM and EXCP Data Access Methods of OS/360.

Machine Configuration: MPS/360 requires a S/360 with at least 65,536 bytes, the Standard and Decimal instruction sets, the Floating Point option, and, if the system output is a printer, it must have 132 print positions (a minimum of 44K bytes must be available for MPS/360 program and data storage). This version of MPS/360 supports the 2400 Series Magnetic Tape Units Models 1, 2, and 3 and the 2311 Disk Storage Drive, and the 2301 Drum Storage Device.

The problem size (number of rows) which MPS/360 solves is directly dependent upon the size of memory available for data. The total amount of core storage used by MPS/360 is divided into two parts, program storage and data storage. The size of the MPS/360 program is approximately 29,800 bytes with a slight variation because of the number and type of I/O devices used to solve a given problem. The amount of storage available for data varies depending on S/360 CPU size ... size of resident OS/360 ... in a multi-task operating system, the size of core currently being used by other tasks ... the user-specified amount of data core available to MPS/360 for the current run.

The design of MPS/360 allows the user to solve problems much larger than the designed norm, but with a reduction of efficiency. This conscious design goal of the system allows the user to solve "in house" those few problems which exceed his normal requirements. However, it is recommended that the System/360 CPU size be selected using the designed norm problem size rather than the maximum problem size.

The number of data storage bytes available to MPS/360 may be obtained by subtracting from the S/360 CPU size, the size of resident OS/360; amount of core, if any, being currently used by other tasks; and 29,800 (approximate program size of MPS/360).

Figure 1 represents the maximum and the designed norm problem size which may be solved with the indicated number of data bytes. The Application Description Manual provides the equations necessary to evaluate the maximum problem for a given number of data bytes. MPS/360 requires a minimum number of utility files for the permanent and temporary storage of data. However, if available and specified by the user, the system will utilize a set of optional files to provide additional flexibility or more efficient problem solution. A file is a collection of related data stored and retrieved in a sequential fashion. A file may be stored on a part of a direct access device (2311) or a single reel of tape. Figure 2 contains the files required by MPS/360.

Note the system input, output, punch and system residence file have been excluded from this table. Figure 3 contains the optional files which if present will be utilized by MPS/360.

FIGURE 1

Bytes Rows	17,300	82,500	213,000	475,000	992,000
Maximum	305	2,120	4,095	4,095	4,095
Designed Norm	200	200-700	700 - 1600	1600 - 3500	4,095

"Designed Norm" is the problem size MPS/360 was designed to solve normally on the specified number of data bytes.

FIGURE 2

File Name	Description
SYSMLCP[1]	Contains the machine language control produced by the compiler
MATRIX1[3]	Contains, in internal form, the LP matrix
ETA1[2]	Contains, in internal form, the product form of the inverse
SCRATCH1[3]	Used for temporary data storage
SCRATCH2[3]	Used for temporary data storage
PROBFILE[2]	Contains a machine independent representation of the LP model

FIGURE 3

File Name	Description
OLDPFILE[2]	Contains a machine independent representation of a problem which is to be REVISEd or COPYed
MATRIX2-4[3]	Up to four devices may be specified for the storage of the LP model (they should be on separate channels)
ETA2-4[2]	Up to four devices may be specified for the storage of the product form of the inverse (they should be on separate channels)
MPSCRAT[1]	Used by the post-optimal procedures when only 4 work regions (minimum) have been SETUP
SYSABS	A high-speed printer which may be used to monitor the LP solution

(1) - Must be a direct access device
(2) - If 2400 series tape unit, it must be 9-track
(3) - If 2400 series tape unit and 7-track, it must have Data Convert feature

Basic Program Material:

Publications* -- Application Directory ... Control Language Users Manual (H20-0290) ... Linear Programming Users Manual (H20-0291-1) and TNL (N20-1031).

Machine Readable** -- The relocatable load modules, message descriptions and sample problem deck may be obtained on one 9-track magnetic tape (either 800 bpi or 1600 bpi) or one 7-track magnetic tape (800 cpi) (Data Conversion feature required) or one 1316 Disk Pack. Each of these volumes will also contain the optional source card images.

Optional Program Material:

Machine Readable** -- One 9-track magnetic tape (either 800 bpi or 1600 bpi) containing program flowcharts and one 9-track DTR containing flowchart print program.

Ordering Procedure: See DP Sales Activity Section of the Branch Office Manual.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg--not PID.

**If the distribution medium is not indicated on the back of the program order card, 9-track at 800 bpi will be forwarded.

Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form); disk packs must be forwarded to PID with the program order card.

DTRs will be provided by PID; no tape submittal is required.

Reference Material: "Introduction to Linear Programming" (E20-8171) ... Application Manuals -- "Aluminum Alloy Blending" (E20-0127), "Electric Arc Furnace Steelmaking" (E20-0147), "Feed Manufacturing" (E20-0148), "Ice Cream Blending" (E20-0156), "Blast Furnace Burdening" (E20-0160), "Cotton Blending" (E20-0164), "Gasoline Blending" (E20-0168), Application Description Manual (H20-0136-1 with TNL N20-1030), and Systems Manual (Y20-0065).

For further information please contact your Regional Manager of Scientific Marketing.

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[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments (or Regions) as sources of information or for manuals etc. should be understood to mean the comparable WT Department (or corresponding organizational level).

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] References made to Engineering Change requirements should be verified with the local CE office. Although E/C requirements are identical for WT and IBM, availability and shipping dates will differ. NO PRODUCTION COMMITMENTS FOR PROGRAMS WITH E/C LEVEL REQUIREMENTS SHOULD BE MADE TO CUSTOMERS PRIOR TO VERIFICATION WITH LOCAL CE MANAGER OF EC AVAILABILITY.

[A] System/360 Model 44 Programming System

System/360 Model 44 Programming System Release 2, which will be available September 30, 1967, includes:

- Improved performance and a batching facility within the FORTRAN IV Compiler.

- Elimination of the DOS compatibility restriction.

- An additional ADD and SUB processing facility.

- Unlabeled tape processing within a label tape environment.

DOS Compatibility

Disk data sets created under DOS/360 can now be read by the System/360 Model 44 Programming System. A parameter specification in an ACCESS statement will cause control of activity on these data sets to be made through a CCHHR rather than a block count concept. Format labels which are not maintained by DOS/360 will be updated to conform to requirements of the System/360 Model 44 Programming System.

FORTRAN IV

Version 2 of the FORTRAN IV Compiler (360F-FO-618) will replace Version 1 compiler currently in the field. It accepts the USA Standard FORTRAN Language and differs from the Version 1 compiler in that its performance is improved and it provides a batching facility.

Batching

To improve the multiple-compilation performance, the replacement compiler is modified to allow "batching" of compilations. The source input for the second or subsequent compilation in a batch may follow immediately after the END statement which denotes the end of the source input for the previous compilation. Only one //EXEC statement is required for the batch and the /* statement denotes the end of the batch. Any compiler options requested on the //EXEC statement apply throughout the batch. In this way the overhead involved in returning to the supervisor, reloading job control, reading the //EXEC statement, and reloading the control phase of the compiler is eliminated for the second and subsequent compilations of the batch.

Performance

Assumptions

The estimated performance of the compiler is shown below for three typical configurations. It is assumed that a listing is produced in both compilation and link editing.

The configurations are as follows:

	Configuration		
	A	B	C
Source input	2540	Tape	Tape
Output listing	1403N1	Tape	Tape
Linkage editor input	SDSD	Tape	Tape
Scratch file	SDSD	SDSD	Tape

All tapes are 2400 Series Model 3 (90KC) tapes and are assumed to be unlabeled. SDSD refers to the system-residence disk.

All configurations include the Model 44F with standard single disk storage drive for system residence, the console printer-keyboard and high speed general registers. In addition, configurations B and C require a high speed multiplexer channel on a second channel. In these 2 configurations, it is assumed that units are assigned to give optimum channel utilization.

Compiler Performance
(time in seconds)

	Configuration		
	A	B	C
*System factor to be applied once per job.	4.5	4.0	4.0
System and compiler factor to be applied once per batch of compilations.	4.0	2.5	2.5
System and compiler factor to be applied once per compilation.	4.5	4.5	4.5
Compiler factor to be applied once per source card.	0.10	0.05	0.05
*System and Linkage Editor factor to be applied once per link edit.	11.8	10.0	9.6
*Linkage Editor factor to be applied once per source card.	0.04	0.03	0.02

*These factors have been extracted unchanged from the figures published in the Sales Manual.

Capacity

In a Model 44F, about 1000 statements may be compiled.

ADD and SUB

The IPL, ADD and SUB routine has been expanded to allow changes to hold through successive IPLs of the System. Without disrupting the ability to make device changes on a temporary basis, the routine will use the FIX parameter of the SET statement to make all applicable changes to the communication area on the resident volume. Subsequent changes are made by re-use of the FIX parameter.

Unlabeled Tape Option

In a label tape environment, unlabeled tapes may now become part of the mix with the addition of a NO LABEL parameter in the Label statement. Validation of unlabeled tapes will be bypassed.

EC Level

The Engineering Change Level requirements of Release 2 are the same as specified in Release 1 with the exception of the 2044 which should now be 390147.

[B] System/360 Universal Character Set Utility

Version 1, Modification Level 2 of the System/360 BPS Universal Character Set Utility, 360P-UT-048, which provides support for System/360 Model 44, is being distributed to current users.

With this modification the program can also be used to load the universal character set buffer on systems with System/360 Model 44 CPUs.

In addition, the program has been corrected to correctly set the NO DATA CHECK-DATA CHECK indicator when used to load multiple printers.

————— Side 1 of 2

[C] System/360 Model 50 Emulator Program for 1410/7010 Systems

Version 3 is available [360C-EU-726]. It has been extended to provide support of the 1301 Disk Storage Unit Models 1 and 2, on the 2314 Direct Access Storage Facility, Model 1; and expanded to provide support of the 2302 Disk Storage Unit Models 1 and 2, on the 2314 Direct Access Storage Facility, Model 1.

Version 3 of the 1410/7010 Emulator program obsoletes the prior version and provides the following improvements:

Performance

The extended and expanded disk support provides increased operating speed, thus decreasing the execution time for disk operations by up to 30% of the 1410 time (depending on the operation performed) when the 2314 is used. See appendix C in SRL C28-6568-2 for 2314 Disk Timing Information.

Increased Flexibility of Operations

Due to the changeable disk packs available on the 2314 Direct Access Storage Facility (which are not available on either the 1301 or 2302 Disk Storage Units) greater flexibility of operations will be realized by the user.

Wider User Support

Expansion of disk support to include the IBM 2302 Disk Storage Unit, as well as extension of disk support on the IBM 1301 Disk Storage Unit, enables users of these units to convert to System/360 without the need for burdensome and costly reprogramming. Formerly, only users of the 1301 Disk Storage Unit were benefitted by the disk portion of the Emulator Program.

Core Storage Requirements

The storage requirements of the 1410/7010 Emulator Program on the Model 50 begin at 65K positions of storage, and increase depending on the size of the 1410/7010 system being emulated. A 1410/7010 system having 10K or 20K of storage can be emulated on a Model 50 with 65K of storage. Larger 1410/7010 systems will require a Model 50 with at least 131K of storage.

Users presently emulating a 40K 1410/7010 system on a 65K System/360 Model 50, will require an additional 65K of storage to operate with Version 3 of the 1410/7010 Emulator Program. This requirement applies to any user of the 1410/7010 Emulator Program, Version 3, whether or not his system uses the IBM 2314 Direct Access Storage Facility.

Publications

IBM System/360 Conversion Aids: The 1410/7010 Emulator Program for IBM System/360 Model 50, C28-6568-2 and TNL N27-1280 ... IBM System/360 Conversion Aids: IBM System/360 Component Description 2314 Direct Access Storage Facility, A26-3599-2 ... IBM System/360 Component Descriptions -- 2841 Storage Control Unit, 2302 Disk Storage Unit, Models 3 and 4, 2311 Disk Storage Drive, 2321 Data Cell Drive, Model 1, 2303 Drum Storage, A26-5988-4.

Engineering Changes

Systems using phase encoded tape drives require EC #257246 for proper functioning of the System/360 Model 50 1410/7010 Emulator Program. Systems with both phase encoded tape drives and the 2314 Direct Access Storage Facility require EC #257246 and REA 02-40-497 on the 1410/7010 compatibility feature.

REA 02-40-497 will be in EC #257929 scheduled for availability beginning November 1967. The REA is presently available.

Basic Program Material

SRL Publications -- IBM System/360 Model 50, Emulation of the IBM 1410/7010 Data Processing System C28-6568-2 and TNL N27-1280 ... IBM System/360 Conversion Aids Sample Problems for IBM System/360 Emulator Programs C27-6929-0.

If only the publications or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

Documentation -- Program Material List and Emulator Restrictions
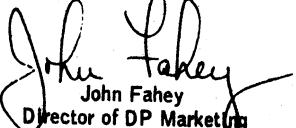
Machine Readable -- Absolute Loader, Emulator Object Deck, Sample Problem and Disk Loader are available on either one 9-track DTR at 800 bpi or 1600 bpi on one 7-track DTR at 800 cpi-- (Data Conversion feature required)

Ordering Procedure: See DP Sales Activity Section of the Branch Office Manual.

Current users of the program will receive a prepunched program order card and a letter announcing the availability of the new version, and instructing the users to order the new version through the branch office. Current users must use this prepunched program order card to order the new version.

When ordering, if the distribution medium is not specified on the program order card, 9-track at 800 bpi will be forwarded.

DTRs are provided by PID; no tape submittal is required.

John Fahey
Director of DP Marketing

IBM 1130 Numerical Surface Techniques and Contour Map Plotting

This program is now available (1130-CX-11X). It permits various kinds of numerical approximations of surfaces and the display of these surfaces in the form of contour maps on the IBM 1627 Plotter. The program also provides for posting of identifying information on these maps, as well as for a number of useful calculations relative to single surfaces or combinations of surfaces.

The program provides the user with a variety of techniques which may be carried out singly or in various combinations with no intermediate output required. Final output is either numerical data on cards or typewriter or maps drawn by the IBM 1627 Plotter.

This program applies to all applications requiring the definition and display of surfaces.

See the back of this letter for program details, ordering information, and a description of the program material available.

For further information contact the IBM Petroleum Industry Marketing Representative at 6900 Fannin Street, Houston, Texas 77025, 713 RI8-3300.

John Fahey
Director of DP Marketing

Release Date: July 31, 1967

Distribution: All Areas

P67-76

Numerical Surface Techniques and Contour Map Plotting: Supports a wide range of applications requiring the analysis of numerical surfaces and the display of contour maps that describe these surfaces. This program can be applied in the medical, oceanography, mining, meteorology, manufacturing, and petroleum exploration and production areas. (1130-CX-11X)

Description: In many sciences and fields of industry there is a need to express surfaces analytically by equations or numerically by a set of data points. This program provides the user with a number of techniques which may be carried out singly or in various combinations without the requirement of intermediate output. Final output is either numerical data in cards or on typewriter or maps drawn by the IBM 1627 Plotter.

The programs included in the set are:

. Utility Programs -- load user data of intermediate results to disk storage ... dump intermediate or final results from disk to cards ... initialize disk storage ... modify data sets in disk storage.

. Numerical Approximation over a Uniform Grid -- takes irregularly spaced data points that define a surface and produces values at the mesh points of a square grid system superposed on the surface.

. Interpolation to a Finer Grid -- takes the values that define a surface at the mesh points of a square grid and, by nonlinear interpolation, defines the surface on a grid with one-half the spacing.

. Smoothing -- applies a controllable degree of smoothing to the values that define a surface, thereby eliminating unwanted minor irregularities in the surface.

. Surface Fitting with Orthogonal Polynomials -- fits orthogonal polynomials to either regularly or irregularly distributed data.

. Equation Evaluation over a Uniform Grid -- produces representative values for a surface by evaluating a defining equation at the mesh points of a square grid.

. Grid-to-Grid Operations -- adds, subtracts, multiplies, or divides the values at the common points on two grid networks ... an option provides the capability to modify the boundaries of a grid network to conform to the common area of two overlapping grids ... another option provides the capability of output the greater of lesser of the two values at each grid point.

. Numerical Integration -- takes a surface defined at the mesh points of a square grid and computes surface areas, projected areas, or volumes by techniques of numerical integration.

. Contouring -- takes a surface defined by values on a square grid and produces a contour map using the IBM 1627 Plotter.

. Map Annotation -- draws letters, numbers, special symbols of various sizes, map boundaries, and titles of maps.

Features: The program uses a data set concept for disk storage of intermediate results ... this offers the user a great deal of convenience in establishing solutions for a variety of problems ... output data sets are named so that they may be called as input to subsequent subprograms.

A nonlinear contouring technique produces maps which closely resemble those produced by hand ... an option provides for rapid linear contouring of intermediate maps ... another option provides for contouring of a series of maps without operator intervention.

Use: Data input consists of a series of control points at which two independent variables (X and Y) and up to thirteen dependent variables (Z values) are recorded. To use the program the customer describes the format in which these data are recorded, names intermediate data sets, prepares program parameter cards according to specified formats, establishes the sequence of subprograms required for solution of a particular problem, and prepares monitor control cards for execution of the program sequence.

Customer Responsibility: The customer is responsible for placing his data in machine readable form and for providing a disk containing the 1130 Disk Monitor System.

Programming Systems: The program is written in 1130 Assembler Language and 1130 FORTRAN. It is designed to run under control of the 1130 Disk Monitor System.

Minimum System Requirements: 1131 Model 2B ... 1442 Card Read Punch ... 1627 Plotter.

Basic Program Material:

Publications* -- Application Directory ... Programmers Manual (H20-0357) ... Operators Manual (H20-0356).

Machine Readable** -- Object Program and Sample Problem Decks are available in card form.

Optional Program Material:

. Machine Readable** -- The Source Decks are available on one 9-track Magnetic tape† (at either 800 bpi or 1600 bpi).

Ordering Procedure: See the DP Sales Activity Section of the Branch Office Manual.

*If only the form numbered publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not PID.

**If the distribution medium is not specified on the back of the program order card, 9-track magnetic tape at 800 bpi will be forwarded.

†Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form).

Additional Program Support Material: Application Description (H20-0140-2) ... Systems Manual (availability and number will be announced in a PRL).

Reference Material: IBM 1130 Principles of Operation (A26-5881) ... IBM Disk Monitor System, Reference Manual (C26-3750) ... IBM 1130 Assembler Manual (C26-5927) ... IBM 1130 Subroutine Library (C26-5929) ... IBM 1130/1800 Plotter Subroutines (C26-3755) ... IBM 1130 FORTRAN Language (C26-5933).

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[A] OS/360 Remote Job Entry (RJE)

Remote Job Entry is being added to OS/360. This additional OS/360 capability uses the Binary Synchronous Communications version of the Basic Telecommunications Access Method (BTAM) (see Item C) and provides an efficient and convenient method of entering OS/360 jobs from remote work stations. Remote Job Entry provides your customer with the following capabilities:

. A job entry control language which complements OS/360 Job control language to provide additional flexibility and control.

. An OS/360 job may be submitted at a remote work station. This job can be identical to a job submitted at the central System/360 input device.

. The Job output may be directed to return to the work station immediately or held until requested by command.

. Output may be directed to the user submitting the job or to an alternate recipient.

. The user can request notification of job completion. This notification includes normal/abnormal job completion and any specified user information.

. RJE acknowledges the receipt of each job with the number of jobs ahead on the job queue. An exit is provided to allow a user - written program to modify this acknowledgement.

. Job output data sets may be optionally directed to the central installation output writers for transcription.

. Users are provided with LOGON and LOGOFF feature which uniquely identifies them and therefore provides work station independence. In addition, it prohibits unauthorized access to job results.

. Status of remotely entered jobs currently in process is given upon request.

. The RJE user may request to be alerted when any output becomes available for him.

. Messages reflecting the status of the central RJE system are available upon request.

. The central and remote operators and RJE users may communicate among themselves.

. Receipt of job output data sets at the work stations may be discontinued and re-started to satisfy forms requirements.

. Users at a work station can delete their output data sets residing at the central processor.

. Job output may be retrieved by a valid recipient at any work station in the system regardless of the work station from which the job was submitted.

. Commands are provided for the central operator to allow additional external control and flexibility for the RJE system.

. System Restart and error recovery procedures are provided.

. Commands are provided to logically attach and remove a work station from the system as desired.

Devices Supported:

The Dual Communications Interface (#3463, #3464, #3465) special feature is optional on the 2701.

Remote Work Stations on separate lines may be any combination of:

1. System/360 Model 30, 40, 50, 65, 67 (65 mode) or 75 using BOS/360 or BPS/360 with:

A minimum of 16K of core storage
2701 with Synchronous Data Adapter, Type II, for EBCDIC code with transparency (#8029)
Card Read Punch
Printer
1052 Console Printer-Keyboard

CONTENTS

————Published by DP Sales Publishing Services, WTHQ————

2. 2780 Data Transmission Terminal, Model 1 or 2, with:

EBCDIC Transmission Code
EBCDIC Transparency (#8030)
120 or 144-character print line
Automatic Turnaround (Model 2 only) (#1350)
Multi-point line control (optional) (#5020)
Multiple record transmission (optional) (#5010)

Availability

Availability depends on the remote work station involved:

An IBM computer system equipped with Binary Synchronous Communication adapter -- July 31, 1968

An IBM 2780 Data Transmission Terminal -- October 31, 1968

Publications

IBM System/360 Operating System: Remote Job Entry. Availability will be announced in a future Publication Release Letter.

Minimum System Configurations

System/360 Model 50, 65, 67 (65 mode) or 75 with 512K bytes of main storage.
Operating System/360 (MVT) device requirements apply.
The 2701 with either switched or non-switched lines may be attached to the multiplexer channel, or with non-switched lines to the selector channel. The 2703 may be attached only to the multiplexer channel. The RJE program permits multiple 2701/2703 units, up to normal system/360 maximums. Also required is Binary Synchronous Communication in EBCDIC code, with full transparency mode.
Direct Access Storage Space for RJE tables and queue areas. Normally less than one 2311 Disk Storage Drive capacity. Exact requirements depend on system loading, number of communication lines and work stations supported.

[B] BOS/360, BPS/360 Remote Job Entry Work Station Programs

The Work Station Programs permit IBM System/360 Model 30, 40, 50, 65, 67 (operating in 65 mode), or 75 using BOS/360 or BPS/360 and connected to a central processor by a high-speed communication facility to be used as an RJE work station. This program operates in conjunction with the IBM Operating System/360 Remote Job Entry program resident at the central processor. The program provides the RJE user the ability to submit OS/360 jobs to be run at a central computing facility and receive the output of these jobs at his remote System/360.

The Remote RJE Work Station programs provide three basic functions:

1. Input of OS/360 jobs and RJE commands through input devices attached to the remote system.

2. Data transmission to and from the central computing system.

3. Data output to a printer or punch attached to the remote system, or passed to a user-written output routine for processing.

OS/360 jobs are entered through the card reader of the remote system. Work Station commands are entered either through the card reader or the printer-keyboard. Prior to transmission to the central computer, a sequence check is made of the RJE control statements associated with each job.

Remote job output is directed to the remote system printer, punch, or pass-

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ed to a user-written output routine. Messages are sent to the printer keyboard or the system printer.

Minimum System Configurations

a) The minimum system requirements for BOS/360 and for BPS/360 permit the generation of this program.

b) For Execution, the program requires a System/360 with 16K bytes of main storage (excluding user written routines). If user-written routines are included, a System/360 with at least 24K bytes of main storage is required. The following input/output devices are required:

- Card Punch
- Printer
- 2701 Data Adapter Unit with Synchronous Data Adapter Type II for EBCDIC code and Transparency (#8029).
- 1052 Printer-Keyboard

Special features supported on the 2701 are:

- Autocall (#1314)
- Dual Communications Interface (#3463, #3464, #3465)

Availability

This program will be available from PID July 31, 1968.

Programming Publications:

SRL: IBM System/360 Operating System: Remote Job Entry (containing information on the operation of a System/360 work station). Availability will be announced in a future Publications Release Letter.

Major
Revisions: IBM System/360 Basic Programming Support Basic Tape System, Programmers' Guide (C24-3354-6).

TNL: N24-5316 to IBM System/360 Basic Operating System Programmers' Guide (C24-3372-5) and N24-5262.

[C] Operating System/360 BTAM with Binary Synchronous Communications (BSC)

Binary Synchronous Communications is being added to the OS/360 Basic Telecommunications Access Method. The addition of BSC support to the existing START-STOP terminal support significantly expands the application potential of BTAM. For the first time you can offer your customers the flexibility of support for low, medium, and high speed devices with one access method.

With BSC BTAM, OS/360 now supports an extended range of terminal configurations and processor terminals in a multiprogramming environment. Binary Synchronous Communication is supported for the following configurations:

Point-to-Point, nonswitched and switched lines:

- System/360* to System/360*
- System/360* to 2780 Data Transmission Terminal
- System/360* to 1130 (Binary Synchronous Communication Adapter)

Multipoint - nonswitched lines:

- System/360* to multidropped 1130 (Binary Synchronous Communication Adapter)
- System/360* to multidropped 2780

OS/360 BTAM Binary Synchronous Communication Support will communicate with other System/360s which use DOS/360 BTAM, OS/360 BTAM, or BOS/BPS/360 Binary Synchronous Communication support.

Refer to letters P67-54 and P67-55 for information regarding the Model 20.

Availability

BTAM for System/360* to System/360* and for System/360* to 1130 will be available April 30, 1968. System/360* to 2780 will be available as follows:

6 Bit Transcode	7/31/68
EBCDIC	10/31/68
USASCII	To be Announced

BTAM provides the following Binary Synchronous line control functions and features:

System/360* to System/360*

Contention (point to point)
Headers and normal text
Inquiry and alternating replies
WABT (optional reply)
Full Transparent Text
Autocall
Dial with and without identification
Disconnect
Conversational
EBCDIC Code
USASCII Code
Dual Communication Interface
Dual Code Feature
Intermediate Block Checking
Leading Graphics

System/360* to 1130

Contention (point to point)
Headers and normal text
Inquiry and alternating replies
EBCDIC Code
Full Transparent Text
Autocall
Disconnect
Multipoint (centralized)
Dual Communication Interface

System/360* to Terminal**

Contention (point to point)
Normal Text
Inquiry and alternating replies
EBCDIC Full Transparent Text
Autocall
Disconnect
EBCDIC, USASCII and Transcode (6-bit)
Multipoint (centralized)
Multiple Record Transmission
Intermediate Block Checking

* Model 30, 40, 50, 65, 67 (65 mode) or 75 with BSC

** 2780 Terminal Configurations
Printer
Printer - card reader
Printer - card reader/punch
Card Reader - punch

2701/03 Error Recovery Procedures and Error Statistics are provided.

Note: On Line Terminal Tests are not included. Your customers should be informed that it may be necessary for the affected BTAM partition to be terminated in order to service a communication line should the user require immediate FE service.

Devices Supported

Local or Remote

For Binary Synchronous Transmission, one of the following telecommunication control units must be attached to the S/360 channel:

- 2701 Data Adapter Unit with Synchronous Data Adapter Type II (SDA-II). The 2701 may be attached to either the multiplexer (switched or nonswitched lines), or the selector channel (nonswitched lines only).

- 2703 Transmission Control Unit with Synchronous Base Type I. The 2703 may be attached only to the multiplexer channel.

Beyond this minimum, the following features are supported:

2701 Synchronous Data Adapter - Type II (#7697, #7698, #7699)

EBCDIC (#9060), USASCII (#9061), 6-bit Transcode (#9062), Dual Communications Interface (#3463, #3464, #3465), Transparency (#8029), Autocall (#1314), Dual Code (#3455).

2703 Transmission Control Unit with Synchronous Base - Type I (#7703, #7704)

Synchronous Terminal control EBCDIC (#7715)†, USASCII (#7716), 6-bit Transcode (#7717)†, Full Transparency for USASCII (#9100), Autocall (#1340, #1341).

Note: Two Processor Switch (#8110) feature for the 2702, 2703 is not program supported. The 2870 multiplexer channel must be at EC #705801.

† includes full transparency

Remote Location

2780 Data Transmission Terminal

Multipoint Line Control (#5020), Automatic Answering

(#1340), Multiple Record Transmission (#5010), Automatic Turnaround (#1350), EBCDIC Transparency (#8030), 6-bit Transcode (#9760), USASCII (#9761), EBCDIC (#9762).

1130 System with Synchronous Communications Adapter (#7690) (BSC Mode)

Publications

IBM System/360 Operating System: Basic Telecommunications Access Method, C30-2004.

Minimum System Configurations

OS/360 (MFT or MVT) device requirements apply.
A 2701/3 attached to a multiplexer channel and/or a 2701 attached to a selector channel.
Communication equipment necessary to interface to the communication line.

[D] System/360 Basic Operating System and Basic Programming Support with Binary Synchronous Communications (BSC)

System/360 Basic Operating System and Basic Programming Support is being expanded to support Binary Synchronous Communications for the 2701 SDA-Type II Adapter.

BOS/360 and BPS/360 provide Binary Synchronous Communications using EBCDIC code for an IBM System/360* via a 2701 equipped with a SDA-Type II Adapter to another System/360* via (a) a 2701 equipped with a SDA-Type II Adapter or, (b) a 2703 equipped with Binary Synchronous features. Point-to-Point support is provided for both non-switched and switched lines. Included with this new capability are the 2701 Error Recovery Procedures and Error Counts.

BOS/360 and BPS/360 Binary Synchronous Communications provide communications with other System/360 using DOS/360 BTAM, OS/360 BTAM, BOS/360 BSC, and BPS/360 BSC.

Binary Synchronous Line Control functions which are provided for are:

Contention (point-to-point)   * Model 30, 40, 50, 65, 67 (working in
Headers and normal text   65 mode) or 75.
Inquiry and alternating replies
WABT (optional reply)
Full Transparent Text
Dial with and without identification
Disconnect
Conversational

The 2701 features supported are:

EBCDIC Code (#9060)
Transparency (#8029)
Autocall (#1314)
Dual Communication Interface (#3463, #3464, #3465)

Note: 2701 support on a selector channel is limited to non-switched (leased or private direct connection).

Availability

The BPS/360 Binary Synchronous Communication support will be available January 30, 1968.

BOS/360 Binary Synchronous Communications support will be available March 30, 1968.

Publications

BOS Assembler with I/O Macros, C24-3361-5 - TNL N24-5314.
BPS Assembler with I/O Macros, C24-3355-4 - TNL N24-5313.
BOS Programmer's Guide, C24-3372-5 - TNL N24-5316.
BPS Programmer's Guide, C24-3354-6 - (major revision).

Minimum System Configurations

The minimum system requirements for BOS/360 and BPS/360 for the generation and execution of this program are:

System/360 16K bytes or larger
Card Reader
Card Punch
Printer
2701 SDA-Type II attached to a multiplexer or selector channel.
Communication equipment necessary to interface to the communication line.

Note: It is strongly recommended that a 1052 Console be used to facilitate the printing of error messages and error counts. This facility will aid in system repair and preventive maintenance.

Devices Supported

2701 Synchronous Data Adapter - Type II (#7698, #7697, #7699)

EBCDIC (#9060), Dual Communications Interface (#3463, #3464, #3465), Transparency (#8029), Autocall (#1314).

John Fahey
Director of DP Marketing

[A] IBM System/360 AUTOSPOT Numerical Control Processor

The AUTOSPOT Numerical Control Processor may now be ordered (360A-CN-08X). Shipments will begin August 16, 1967.

This program is designed to implement computer preparation of input to machine tool controllers for point-to-point operations and simple milling operations. Significant time savings can be realized when this technique is used in place of tedious manual methods.

The AUTOSPOT Numerical Control Processor is an interpreter for calculating machine tool coordinates required to perform point-to-point and simple milling operations defined in a "part program."

The processor includes geometric definition capabilities, extensive pattern definition and manipulation capabilities, FORTRAN-like computing capabilities, and the generation of cutter motions required to perform simple milling operations. The System/360 AUTOSPOT Processor now establishes a precedent in that it provides interpretation of machine verbs if desired. This capability greatly reduces the complexity of the user-supplied post processor required to produce the final output to the machine tool controller.

The customer is required to load the processor into a core image library (on disk) using the supplied material. The customer will also be required to provide any post processors necessary to produce the output needed for a specific machine tool.

The processor is written in System/360 Assembly Language and operates under the Disk Operating System.

Special Sales Information

The AUTOSPOT Processor will not run in an operating environment where the File Protect option of DOS is used. Under these circumstances, a separate system pack is required for operation of the AUTOSPOT Processor.

The prefix (component code) for AUTOSPOT (360A-CN-08X) and AD-APT/AUTOSPOT (360A-CN-09X) are the same. AUTOSPOT and AD-APT/AUTOSPOT should not be placed in the same library.

The S/360 AUTOSPOT Numerical Control Processor System Manual (Y20-0119) will be available September 15; Application Description Manual (H20-0462), August 9.

Additional details are on the back. For further information contact your Manufacturing Industry Marketing Representative.

[B] IBM System/360 AD-APT/AUTOSPOT Numerical Control Processor

The AD-APT/AUTOSPOT Numerical Control Processor may now be ordered (360A-CN-09X). Shipments will begin August 16, 1967.

This program is designed to implement computer preparation of input to machine tool controllers for point-to-point operations and contour milling operations with a fixed cutter axis.

The AD-APT/AUTOSPOT Processor provides for the first time a single Numerical Control Processor designed to process both point-to-point and contour milling operations on a small computing system. The processor provides every capability included in S/360 AUTOSPOT (360A-CN-08X) plus the contouring capabilities of the AD-APT language at no sacrifice in processing speed. The processor is significantly faster than the 1620 AD-APT Processor.

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The AD-APT Numerical Control Language provides contour milling capabilities involving constant cutter contact with vertical surfaces of many shapes and non-vertical planes. In addition, macro capabilities are provided for repeating a set of operations. The processor allows variety of geometric definitions and FORTRAN-like computing statements.

The customer is required to load the processor into a core image library (on disk) using the supplied material. The customer will also be required to provide any post processors necessary to produce the output needed for a specific machine tool.

The processor is written in System/360 Assembly Language and operates under the Disk Operating System.

Special Sales Information

The AD-APT/AUTOSPOT Processor will not run in an operating environment where the File Protect option of DOS is used. Under these circumstances, a separate system pack is required for operation of the AD-APT/AUTOSPOT Processor.

The prefix (component code) for AD-APT/AUTOSPOT (360A-CN-09X) and AUTOSPOT (360A-CN-08X) are the same. AD-APT/AUTOSPOT and AUTOSPOT should not be placed in the same library.

The use of the General Conics as a Drive Surface feature is restricted and cannot be used as described in the AD-APT/AUTOSPOT Part Programming Manual (H20-0375). An announcement lifting the restriction will be made about Sept. 15, 1967. The S/360 AD-APT/AUTOSPOT Numerical Control Processor System Manual (Y20-0118) will be available September 15; the Application Description Manual (H20-0463), August 9. The S/360 AUTOSPOT Numerical Control Processor System Manual (Y20-0119) will be available September 15.

Additional details are on the back. For further information contact your Manufacturing Industry Marketing Representative.

John Fahey
Director of DP Marketing

Numerical Control Processors: Consists of three programs: AUTOSPOT (Point-to-Point) ... AD-APT (two dimensional contouring with point-to-point capability) ... APT (three dimensional contouring).

AUTOSPOT (360A-CN-08X)

Description: This processor is designed to implement computer preparation of input to machine tool controllers for point-to-point operations and simple milling operations. Significant time savings can be realized when this technique is used in place of tedious manual methods.

Features: The processor includes geometric definition capabilities, extensive pattern definition and manipulation capabilities, FORTRAN-like computing capabilities, and the generation of cutter motions required to perform simple milling operations. The AUTOSPOT Processor establishes a precedent in that it provides interpretation of machining verbs if desired. This capability greatly reduces the complexity of the user-supplied post processor required to produce the final output to the machine tool controller.

Use: The AUTOSPOT Processor is an interpreter for a "part program" describing the machining operations to be performed.

Special Sales Information: The AUTOSPOT Processor will not run in an operating environment where the File Protect option of DOS is used. Under these circumstances, a separate system pack is required for operation of the AUTOSPOT Processor.

The prefix (component code) for AUTOSPOT (360A-CN-08X) and AD-APT/AUTOSPOT (360A-CN-09X) are the same. AUTOSPOT and AD-APT/AUTOSPOT should not be placed in the same library.

Customer Responsibilities: The customer is required to load the processor into a core image library (on disk) using the supplied material. The customer will also be required to provide any post processors necessary to produce the output needed for a specific machine tool.

Programming Systems: The processor is written in System/360 Assembly Language and operates under the Disk Operating System (6K Supervisor). The processor requires approximately 25K of core exclusive of the DOS supervisor.

Minimum System Requirements: A 2030 Model E with Floating Point Arithmetic (#4427) and 1051 Attachment (#7915) ... 1051 Control Unit Model N1, First Printer Attachment (#4409), First Punch Attachment (#4410), First Reader Attachment (#4411), CPU Attachment (#3130) ... 1052 Printer Keyboard Model 6 ... 2501 Card Reader Model B1 ... 1442 Card Punch Model N2 ... 1443 Printer Model N1 ... 2841 Storage Control ... 2311 Disk Storage Drive.

Note: If a 2030 Model F or large processing unit is available, significant performance increases will be realized with the use of the AD-APT/AUTOSPOT (360A-CN-09X).

Basic Program Material:

Publications* -- Application Directory ... Part Programming Manual (H20-0373) ... Operator's Manual (H20-0374).

Machine Readable ** -- One 9-track DTR (800 or 1600 bpi) or one 7-track DTR (800 cpi) or a card deck. The Machine Readable contains the control cards and object modules necessary to load the processor into the core image library and a sample problem with control cards for execution.

Optional Program Material:

Machine Readable -- Source programs and flowcharts on one 9-track 2400' reel of magnetic tape (800 or 1600 bpi) or one 7-track 2400' reel of tape (800 cpi).

Ordering Procedure: See Branch Office Manual, DP Sales Activity section.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the distribution medium required is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

Card decks for the Basic Machine Readable Material will be supplied only to users who do not have magnetic tapes available.

DTRs will be provided by PID; no tape submittal is required.

Additional Program Support Material: Application Description Manual (H20-0462) ... System Manual (Y20-0119).

Reference Material: IBM System/360 Disk and Tape Operating Systems Assembler Specifications (C24-3414) ... IBM System/360 Disk Operating System, System Control and Service Programs (C24-5036) ... IBM System/360 Disk and Tape Operating Systems Utility Programs Specifications (C24-3465) ... IBM System/360 Disk Operating System Operating Guide (C24-5022) ... IBM System/360 Principles of Operation (A22-6821).

AD-APT/AUTOSPOT (360A-CN-09X)

Description: This processor is designed to implement computer preparation of input to machine tool controllers for point-to-point operations and contour milling operations with a fixed cutter axis.

Features: The AD-APT/AUTOSPOT Processor provides for the first time a single Numerical Control processor designed to process both point-to-point and contour milling operations on a small computing system. The processor provides every capability included in S/360 AUTOSPOT (360A-CN-08X) plus the contouring capabilities of the AD-APT language at no sacrifice in processing speed. The processor is significantly faster than the 1620 AD-APT Processor.

The AD-APT Numerical Control Language provides contour milling capabilities involving constant cutter contact with vertical surfaces of many shapes and non-vertical

planes. In addition, macro capabilities are provided for repeating a set of operations. The processor allows a variety of geometric definitions and FORTRAN-like computing statements.

Use: The AD-APT/AUTOSPOT Processor is an interpreter for a "part program" describing the machine operations to be performed.

Special Sales Information: The AD-APT/AUTOSPOT Processor will not run in an operating environment where the File Protect option of DOS is used. Under these circumstances, a separate system pack is required for operation of the AD-APT/AUTOSPOT Processor.

The prefix (component code) for AD-APT/AUTOSPOT (360A-CN-09X) and AUTOSPOT (360A-CN-08X) are the same. AD-APT/AUTOSPOT and AUTOSPOT should not be placed in the same library.

Customer Responsibilities: The customer is required to load the processor into a core image library (on disk) using the supplied material. The customer will also be required to provide any post processors necessary to produce the output needed for a specific machine tool.

Programming Systems: The processor is written in System/360 Assembly Language and operates under the Disk Operating System. The AD-APT/AUTOSPOT Processor requires approximately 52K core exclusive of DOS supervisor.

Minimum System Requirements: A 2030 Model F with Floating Point Arithmetic (#4427) and 1051 Attachment (#7915) ... 1051 Control Unit Model N1, First Printer Attachment (#4409), First Reader Attachment (#4411), CPU Attachment (#3130) ... 1052 Printer Keyboard Model 6 ... 2501 Card Reader Model B1 ... 1442 Card Punch Model N2 ... 1443 Printer Model N1 ... 2841 Storage Control ... 2311 Disk Storage Drive.

Basic Program Material:

Publications* -- Application Directory ... AD-APT/AUTOSPOT Part Programming Manual (H20-0375) ... AUTOSPOT Part Programming Manual (H20-0373) ... Operator's Manual (H20-0374).

Machine Readable** -- One 9-track DTR (800 or 1600 bpi) or one 7-track DTR (800 cpi) or a card deck. The Machine Readable contains the control cards and object modules necessary to load the processor into the core image library and a sample problem with control cards for execution.

Optional Program Material:

Machine Readable** -- Source programs and flowcharts on one 9-track 2400' reel of magnetic tape (800 or 1600 bpi) or one 7-track 2400' reel of magnetic tape (800 cpi).

Note: The optional material will not be available until September 15, 1967. Availability will be announced in a program letter. Orders should not be submitted for optional material until it is announced.

Ordering Procedure: See Branch Office Manual, DP Sales Activity section.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the distribution medium required on the back of the program order card is not indicated, 9-track at 800 bpi will be forwarded.

Card decks for the Basic Machine Readable material will be supplied only to users who do not have magnetic tapes available.

DTRs will be provided by PID; no tape submittal is required.

Magnetic tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form).

Additional Program Support Material: AD-APT/AUTOSPOT Application Description Manual (H20-0463) ... AUTOSPOT Application Description Manual (H20-0462) ... AD-APT/AUTOSPOT System Manual (Y20-0118) ... AUTOSPOT System Manual (Y20-0119).

Reference Material: IBM System/360 Disk and Tape Operating Systems Assembler Specifications (C24-3414) ... IBM System/360 Disk Operating System, System Control and Service Programs (C24-5036) ... IBM System/360 Disk and Tape Operating Systems Utility Programs Specifications (C24-3465) ... IBM System/360 Disk Operating System Operating Guide (C24-5022) ... IBM System/360 Principles of Operation (A22-6821).

For further information contact your Manufacturing Industry Marketing Representative.

[A] System/360 Model 44 1620 Simulator Program

The System/360 Model 44 Simulator of the 1620, to be available November 15, 1967, assists customers in their transition from a 1620 Model 1 or 2 to System/360 Model 44. Without additional hardware, the Simulator enables programs that have been operating on the 1620 to be executed on any suitable System/360 Model 44 configuration. By providing program compatibility, the Simulator relieves reprogramming schedules, and can eliminate the need to convert infrequently used programs.

The 1620 Simulator is a stand-alone System/360 Model 44 program that uses Model 44 components and logic to represent the simulated system. By interpreting 1620 programs and data, the Simulator reproduces the results that would be obtained on the original system.

Reference Material: System/360 Principles of Operation, A22, 6810 ... IBM System/360 Model 44 Functional Characteristics, A22-6875 ... 1620 Central Processing Unit Model 1, A26-5706 ... 1620 Central Processing Unit Model 2, A26-5781.

An SRL Publication, "IBM System/360 Conversion Aids: The 1620 Simulator for IBM System/360 Model 44," will be announced in a future Publication Release Letter.

The sales manual text printed on the reverse side contains more detailed information on the program and performance estimates.

[B] OS/360 - Linkage Editor F Withdrawal

Effective with Release 12 of OS/360, Linkage Editor F (360S-ED-521) is withdrawn. Linkage Editor E, which has increased function when used with its 44K option provides equivalent function and performance for most users, plus providing an improvement in reliability. The Linkage Editor E continues to offer options which operate in 15K and 18K.

Three differences in functional capability between LE E (44K) and LE F are:

1. LE E (44K) accepts grouped control sections, but does not produce them.

2. LE E (44K) does not accept or produce records larger than 3K bytes. In cases where existing programs are blocked larger than 3K (residing on 2301, 2302, 2303, or 2314) and must later serve as input to LE E (44K), a conversion process will be necessary using an existing copy of LE F from Release 11 or earlier. This procedure was described in the Installation Newsletter 67-12, June 16, 1967.

3. The capacity of two internal tables related to structured overlays is smaller in LE E (44K) than in LE F. With LE E (44K), the table capacity is increased if extra main storage is available. The detailed description below compares the two editors and shows that table capacities are about equal if LE E (44K) is executing in a space of 168K.

TABLE	LE E (44K) in 88K		LE F 88 in 88K	
	# Bytes	# Entries	# Bytes	# Entries
Entry List	876	146	1524	254
Calls List	2308	1154	5000	2500

The above tables affect a program only when it is in overlay structure.

The ENTRY list contains an entry for each CALL from the module, i.e., each external downward reference in its path of the segment. The CALLS list contains RLD information for V-type address constants. The number of entries is equal to:

$$2n + \sum_{1}^{n} i$$

where: n = number of CSECTs with V-type address constants

i = number of external references in each CSECT.

For example, there are 10, 20, and 30 external references in CSECT 2, 3, and 5 respectively; there is none in CSECT 1 and 4. The total number of entries in CALLS list is:

$$(2 \times 3) + 10 + 20 + 30 = 66$$

Linkage Editor F88 does not expand these tables, while E (44K) expands linearly both the ENTRY list and CALLS list when there is additional space available. The rate of expansion is 20/602 (about 1/30) for the CALLS list and 6/602 (about 1/100) for the ENTRY list. If LE E (44K) executes in a space of 168K, the above tables will become:

CALLS List   2308 bytes + 1/30 (168K - 88K)
= 2308 + 2730 = 5038 bytes
or about 2519 entries

ENTRY List   876 bytes + 1/100 (168K - 88K)
= 876 + 810 = 1695 bytes
or about 282 entries

John Fahey
Director of DP Marketing

Release Date: August 4, 1967
Distribution: All Areas

IBM System/360 Model 44 Simulator of the IBM 1620 Data Processing System

The System/360 Model 44 Simulator of the 1620 is a stand-alone System/360 Model 44 program that, without additional components, enables programs that have been operating on a 1620 to be executed on any System/360 Model 44, having a suitable configuration. By providing program compatibility, the Simulator relieves reprogramming schedules, and can eliminate the need to convert infrequently used programs.

1620 core storage capabilities from 20,000 to 60,000 decimal digits are simulated, as well as all standard features and the following optional features:

. Additional instructions for 1620, Model 1 (#1021)

. Automatic divide for 1620, Model 1 (#1285)

. Automatic floating point (#1288, 1289)

. Indirect addressing (#4650)

. Index registers for 1620, Model 2 (#4627)

. Additional core storage - 20K and 40K

. 1443 Printer, Model 2

. 1311 Disk Storage Drive, Models 2 and 3

The Simulator uses the System/360 Model 44 Instruction set. It also requires:

2044 Processing Unit

   65,536 bytes (Model F) if simulated system is 20K or 40K
   131,072 bytes (Model G) if simulated system is 60K

. One Multiplexer Channel (#5248 or #4598)

. One 1052 Console Printer-Keyboard

. One device for input of the 1620 program.

. One device for simulator control information input

. For each device simulated, one of the devices shown for it in the following table:

1620 Device	System/360 Model 44 Device
1620 Console Typewriter	1052 Printer-Keyboard
1621 Paper Tape Reader	2671 Paper Tape Reader with 2822 Paper Tape Control Unit
	2540 Card Read Punch with 2821 Control Unit
	1442 Card Read Punch, Model N1
	2520 Card Read Punch, Model B1
	2501 Card Reader, Model B1 or B2
1621 Paper Tape Punch	2540 Card Read Punch with 2821 Control Unit
	1442 Card Read Punch, Model N1
	1442 Card Punch, Model N2
	2520 Card Read Punch, Model B1
	2520 Card Punch, Model B2 or B3
1622 Card Read Punch	2540 Card Read Punch with 2821 Control Unit
	1442 Card Read Punch, Model N1
	2520 Card Read Punch, Model B1
	A combination of
	2501 Card Reader, Model B1 or B2
	1442 Card Punch, Model N2
	2520 Card Punch, Model B2 or B3
1311 Disk Storage Drive (Model 2 or 3)	2311 Disk Storage Drive with 2841 Control Unit
1443 Printer, Model 2	1403 Printer, Model 2, 3, or N1, with 2821 Control Unit
	1443 Printer, Model N1

In some cases, the program input, control information input, and simulated-device functions can be handled by the same device.

The Simulator produces correct results only for programs that work properly on the original system, and may produce incorrect results for time-dependent programs.

The following features and functions are not simulated:

, Binary Capabilities for 1620 Model 2

. 1627 Plotter and 1626 Plotter Control

. 1710 Control System

. Magnetic Tape Units

. 1620 Stop/SIE Key

. Synchro-check of the 1443 Printer

The following may impose a limitation for certain programs:

. The Simulator stops, enters 1620 manual mode, and prints an error message in any of the following cases: illegal operation code--non-decimal character in address--wrong I/O code--branch to odd location--even address in alphameric I/O operations.

. Unpredictable results can occur from: invalid codes in arithmetic and floating-point operations--use of mantissas of different lengths--overlapped I/O and CPU operations that rely on 1620 internal timing.

. Core storage wrap-around is limited to: Transmit Field and Transmit Field immediate--Transmit Record and Transmit Record No Record Mark--Transfer Numerical Strip--Transfer Numerical Fill--Transmit Floating--Read Numerically --Read Alphamerically--Write Numerically--Write Alphamerically--Dump Numerically (cards).

. Wrap-around cannot occur for instructions which do not fit in at the end of simulated core storage.

. The function of the 1620 Model 2 correction key is performed by a 1052 cancel operation.

. A parity check in CPU operations causes a System/360 halt in the wait and disabled states.

. Testing the Memory Buffer Register parity indicators (MBR-E or MBR-O) results in a negative (off) response.

. The "Quotient plus Remainder" and "Product" area is limited to 100 positions (1620 addresses 00000 through 00099).

. All digits must be decimal in the Add and Multiply tables.

. Special characters in the P field are processed, but not checked.

. Step-by-step execution of 1620 instructions cannot be accomplished with the simulated Stop key.

. One 2311 Disk Pack is required to simulate each 1311 Disk Pack.

. A special procedure (described in the Simulator SRL) must be used to turn off printer channel 9 and channel 12 indicators.

. Flags are not printed, but special and alphabetic characters are substituted for flagged numbers.

. When simulating the 1622 Card Read Punch by one 1442 Card Read Punch, Model N1, or one 2520 Card Read Punch, Model B1, reading and punching cannot be performed simultaneously. When only one unit is used for both functions, it will be the user's responsibility to perform the necessary card merging and sorting operations.

. Each valid punched 1620 paper tape character corresponds to a System/360 card punch character. Any paper tape record format that can be punched by the 1621 is punched by the simulator. The data on the cards punched by the simulator are images of the data in main storage, in the simulator internal code (EBCDIC).

Machine Requirements

The simulator system will be distributed on a magnetic tape (which may be punched optionally).

To adapt the simulation program for the particular 1620 configuration, an edit run must be made. After it has been edited, the program must be assembled from symbolic by the Model 44 Programming System. At least one magnetic tape or 2311 Disk Drive is required for the assembly. If the symbolic input to the assembly is from tape rather than cards, then a dedicated magnetic tape drive is required for this input at assembly time.

Performance: Performance under simulation is represented by the performance ratio, defined as the ratio of the total execution time on the 1620 to the total execution time on the System/360 Model 44. The performance ratio for a given program depends heavily on the relative amounts of CPU and I/O activity, the CPU instruction mix, and the I/O devices used. A ratio greater than 1.0 means that simulation on System/ 360 Model 44 is faster than execution on the original system.

1620 Configuration	System/360 Model 44
Model 1, Paper Tape	0.55 to 2.85
Model 1, Cards	0.55 to 1.90
Model 2, Paper Tape	0.15 to 2.85
Model 2, Cards	0.15 to 1.90

67-80

DISK OPERATING SYSTEM/360

Here's important information. Significant
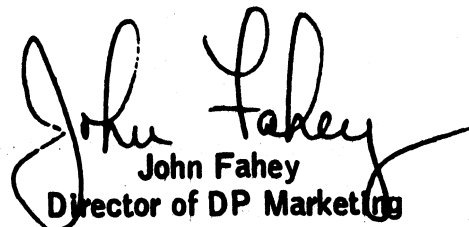extensions to DOS/360 have been made
which will provide your customers with:

- Improved Performance
- Increased Function
- Greater Usability

The highlights of these extensions are listed
below ... details, including availability,
are described on the inside pages.

- IBM 2314 Direct Access Storage Facility Support

- Expanded DASD Support In Function And Performance

    Additional Index Sequential Options
    QTAM Queues
    New Utilities

- Multiprogramming Improvements

    Batched Job Foreground Options
    Checkpoint/Restart In Foreground
    Seek Separation Feature

- New System Facilities

    Device Independent Access Method
    Private Source And Relocatable Libraries
    CSERV

- Tape And Disk Label Simplification

John Fahey
Director of DP Marketing

Release Date: August 8, 1967

Distribution: All Areas

2314 -- DIRECT ACCESS STORAGE FACILITY

Full device support will be furnished for the 2314:

- Systems Residence -- includes all DOS/360 components currently supplied except Autotest.
- System Input/System Output
- Full Data Management -- Supported by:
  - QTAM
  - Sequential Access Method
  - Direct Access Method
  - Index Sequential Access Method
  - Device Independent Access Method (announced in this letter)
- Private Source and Relocatable Libraries

EXPANDED DOS/360 DASD SUPPORT FOR 2311 and 2314

Index Sequential Performance Options for Assembler:

- Channel time significantly reduced via Cylinder Indices in core option.
- Records can be added to a file in a fraction of the time via the Full Track ADD option.

QTAM:

The QTAM queues will be maintained in a file on either the 2311 or 2314 DASD. The file on either DASD may be expanded to include up to 16 extents. The extents may exist on one or more DASD's of the same type.

New Utilities:

- VTOC Display
- Initialize Disk
- Assign Alternate Track
- Copy-Restore: Disk with Tape
- Copy-Restore: Disk with Card
- Copy: Disk to Disk

MULTIPROGRAMMING IMPROVEMENTS

Batch Job Foreground (BJF): This option provides processing capability in the foreground partitions similar to that presently available in the background. Single Program Initiator Mode (SPI) is also available as in the current system. Highlights are:

- Permits full job control in the foreground partitions
- Multiple communication regions
- Checkpoint/Restart
- All system class logical units except SYSLNK available to foreground
- All object programs produced by the language processors will execute without restriction
- Single Program Initiator Mode (SPI) may be used concurrently in one partition while other is operating as Batch Job Foreground (BJF)

Requirements for operating a Foreground Partition in Batch Job Mode are:

1. Partition must be at least 10K
2. Separate system I/O files have been assigned
3. Batch Job Foreground (BJF) has been specified at Systems Generation time
4. Will add approximately 350 bytes to size of the Multiprogramming Supervisor (including communication regions). If Disk SYSIN/SYSOUT is specified this will expand to 600 bytes.

Seek Separation Feature:

This SYSGEN option improves system performance and is available automatically for all DASD operations. This provides increased channel time for other I/O operations, significantly improving multiprogramming environments. The option adds approximately 200 bytes to the supervisor plus a 4-byte entry for each DASD device.

NEW SYSTEM FACILITIES

Device Independent Access Method:

A new access method will be supported in Assembler that provides device independence for System Units. This access method, Define The File Device Independent (DTFDI), will support sequential processing of unblocked records for files on SYSLST, SYSIPT, SYSPCH, and SYSRDR. With the new access method users can change device assignments without a re-assembly of the source programs. Furthermore, device independence for System Units will reduce main storage requirements and the number of parameters to define a file.

Private Source and Relocatable Libraries:

A facility will be added to the librarian that allows users to create and use private source and relocatable libraries on a pack other than the system residence pack.

The number of private libraries that can be created is unlimited; however, only a single set of private libraries can be operative on the system at one time.

Relocatable and Source libraries on system residence may be used in combination with private Relocatable and Source libraries.

CSERV:

This added librarian function will allow the user to display and/or punch a specified phase or complete program from the core image library.

This will allow the user to transfer programs or phases from the core image library of one system residence pack to another.

TAPE AND DISK LABEL SIMPLICATION

A Major change to the Label Control Statements for disk and tape will provide significant improvement and simplification of labeling operations.

- Label Statement Cards may be used from day to day without change
- Simplified Field Definition
- Variable Field Lengths
- Optional Fields
- VOL Statements have been eliminated
- One Statement for tape - one or two for disk
- Current Label Statements are accepted
- Same Tape Statements usable for Input and Output files
- Four Standard Label Tracks - currently only one
- Index Sequential and Direct Access Method Labels may be placed in Standard Label area
- Separate Standard Label Track for each partition
- Processing of Multi-volume Tape Files may begin on other than the first volume

MINIMUM SYSTEM REQUIREMENTS FOR MULTIPROGRAMMING:

Multiprogramming, using only Single-Program Initiator facilities will require 24K bytes of main storage; multiprogramming with Batch Job Foreground capability will require 32K bytes of main storage to support a single foreground partition in this mode, and 64K bytes to support both foreground partitions as batch job processors. Since separate system Input/Output files are required for Batch Job Foreground processing, additional disk extents or additional Input/Output devices are required.

		ifications (C24-3414-2-3-4)
TNL N21-5063	to	IBM System/360 Disk and Tape Operating Systems, Utility Programs Specifications (C24-3465-2-3)
TNL N21-5058	to	IBM System/360 Disk and Tape Operating Systems, Report Program Generator Specifications (C26-3570 -4)
TNL N30-5014	to	IBM System/360 Disk Operating System QTAM Message Control Program (C30-5004-0)

AVAILABILITY:

The extended support of DOS/360 will be available as indicated:

2314 Device Support:

. Assembler	4/5/68
. COBOL	4/5/68
. Data Management	4/5/68
. Basic FORTRAN	4/5/68
. RPG	4/5/68
. System Control	4/5/68
. Utilities	4/5/68
. QTAM	4/5/68
. SORT Information to be available	P67-51
. PL/1 at a later date see:	

Multiprogramming Improvements	4/5/68

System Control Enhancements:

. Seek Separation Feature	4/5/68
. New Librarian Facilities	4/5/68
. New Labeling Facilities	
Tape	11/17/67
Disk	4/5/68

Data Management Extensions:

. New Access Method-DTFDI	4/5/68
. ISAM Improvement Features	
Indices in Core	4/5/68
Full Track Add	4/5/68

PROGRAM DISTRIBUTION FOR IBM 2314 RESIDENT SYSTEMS:

Program distribution medium for DOS/360 2314 resident systems will be on either 7- or 9-track magnetic tape.

System configurations which do not include tape must make local arrangements for a system with both 2314 and tape to perform the tape to 2316 disk pack restore operation.

A branch office unable to arrange for tape to 2316 disk pack conversion should contact the Regional Manager of Programming Systems Marketing for assistance.

This announcement cancels Statement of Intent P67-51, except the information on SORT and PL/1.

REFERENCE PUBLICATIONS:

TNL N24-5276	to	IBM System/360 Disk Operating System, Data Management Concepts (C24-3427-1)
TNL N28-0237	to	IBM System/360 Disk and Tape Operating Systems, COBOL Language Specifications (C24-3433-3)
TNL N24-5275	to	IBM System/360 Disk and Tape Operating Systems, Concepts and Facilities (C24-5030-2)
TNL N24-5279	to	IBM System/360 Disk Operating System, System Control and System Service Programs (C24-5036-1)
TNL N24-5285	to	IBM System/360 Disk Operating System, Supervisor and Input/Output Macros (C24-5037-2)
TNL N24-5318	to	IBM System/360 Disk and Tape Operating Systems, Utility Macros Specifications (C24-5042-1)
TNL N26-0544	to	IBM System/360 Disk and Tape Operating Systems, Assembler Spec.

OS/360

Release 12 may now be ordered. Shipments will begin the week of August 14. It includes maintenance and the following new features:

. The MVT control program - full multijob capability

. Compiler and control program improvements

Users who have installed PCP and MFT must advance to Release 12, regardless of plans to use the MVT control program, in order to obtain current improvements. Details on this release are given below:

Multiprogramming with a Variable Number of Tasks (MVT)

Release 12 provides comprehensive operating system capabilities for priority scheduling, multijob operation, and subtask creation. The MVT configuration of OS/360 will operate in a minimum of 256K byte main storage, but is expected to be most effective on System/360 with 512K or more. MVT provides capabilities for:

. Faster job turnaround time; integrated system input and output functions speed job turnaround as compared to basic SYSIN/ SYSOUT used with peripheral systems.

. More efficient system utilization by its ability to run multiple jobs, multiple readers and writers concurrently, vary region sizes for each job step.

. Operational flexibility by new operator commands, priority job scheduling, system input and output automatically queued on DASD, multiple classes of output, job separators, time limits on job execution, system log.

. Program design flexibility using the ATTACH subtask facility, special exits for abnormal subtask termination, task interval timing.

MVT Features

MVT features that differ from the PCP and MFT capabilities already delivered include:

. Independently operating input Readers/Interpreters which transcribe and enqueue the input job streams to direct access storage. The number of readers is under operator control.

. Priority job selection which permits automatic scheduling of high priority jobs ahead of low priority ones.

. Multijob operation which provides independent scheduling of up to 15 different jobs. The number of jobs executing concurrently is under operator control.

. Small region initiation which permits individual jobs during step execution, to occupy as little as 12K when the termination routine is made resident.

. Multiple system output classes which permit several logically distinct outputs from a single job, for later priority controlled transcription by an output writer.

. Independently operating output writers which transcribe system output data and messages from temporary DASD locations to card punch, printer, or magnetic tape.

. Variable region size, set dynamically at job step initiation time which allows greater efficiency in use of main storage where a mixture of large and small jobs is being executed.

. Dynamically controllable task dispatching priorities which gives users the ability to improve system efficiency by executing CPU-limited jobs at lower priority than I/O bound jobs (CHAP macro instructions).

. Dynamic subtask ATTACH capability which permits greater program design flexibility and system efficiency. Subtasks compete for system facilities and proceed independently in much the same way as multiple jobs run concurrently.

Other MVT facilities include:

. Special printed or punched separators between jobs transcribed by each output writer.

. A system restart facility that permits input and output work queues to be recovered in case of system failure (except for jobs

in execution, which must be resubmitted).

. Operator command display active jobs.

. A link pack area for user-specified resident code modules that are to be shared among all active tasks being performed.

. Multiple transient areas for non-resident SVC routines.

. Task time intervals.

. Job execution time limit.

. Exclusive control requests for data sets.

. Asynchronous program overlay fetching.

. "Scatter" loading of programs.

. System log.

Compiler and Control Program Improvements

. COBOL E now supports the Sterling Currency Feature, which provides facilities for handling Sterling Currency items by means of an extension to the PICTURE clause. This feature allows the COBOL programmer to read, write, move, add, and subtract fields described as Sterling Currency items.

. COBOL F - A number of significant improvements to Release 11 were made available as PTF 8162; these improvements are now incorporated in Release 12. PTF 8162 was widely distributed to COBOL F users and required that all object programs be recompiled. The Release 12 level of COBOL F does not represent any further change for them.

. PTF 10584 improves COBOL F.

. FORTRAN G - The number of source statements that can be compiled in the minimum dynamic main storage area of 80K bytes has been increased to 300. This represents more than a two-fold increase in the size of the object program that can be compiled in one pass of the FORTRAN G compiler.

. Linkage Editor E (44K) now supports up to 255 segments in structured overlay when an 88K main storage area is used, as compared to its previous limit of 63. With this improvement, Linkage Editor E provides all of the most significant capabilities available formerly in Linkage Editor F (withdrawn). Linkage Editor E continues to provide options operating in 15K and 18K, whose functional ability remains unchanged.

Functional Improvements

. System Output Class B - for PCP and MFT punched output, the output class B designation is treated as a request for a card punch.

. DASDI - surface analysis capability improved.

. BDAM - read exclusive extended to function across tasks and jobs in both MFT and MVT.

. TESTRAN, now allows the user to specify the TESTRAN Interpreter DD statement name. This feature must be used in MVT when a task using TESTRAN creates a subtask also using TESTRAN. Use is optional otherwise.

. QTAM -- The functional capabilities of QTAM available with MFT in Release 11 may now also be used with MVT.

Due to the complex environments into which OS/360 QTAM is being installed, the Branch Manager must review the plans of each QTAM user prior to submission of the customer's order for this component. Refer to Memorandum to DP and FE Branch Managers dated May 12, 1967, for further information and instructions.

Performance Improvements

. The PCI fetch capability for PCP and MFT configurations is further improved in this release, reducing the number of SYSRES device rotations used when loading overlay programs.

Release Date: August 8, 1967
Distribution: All Areas

APAR Maintenance

Corrections for approximately 200 APARs are included in Release 12. The major changes are in Primary Control Program, Data Management, PL/I F, and Utilities; other changes apply to most system components. OS/360 users should be encouraged to upgrade to this release level to minimize exposure to known errors which are now corrected.

Both the FE and SE technical organizations should be informed of any Type I Program situation that prevents an OS installation from advancing to the current release. If an inquiry cannot be satisfied, the CE should consult the FE area office for the latest information on Release 12. The SE should also utilize information available from Field System Centers. New topical entries have been provided in SECOM and RETAIN for Release 12 System Generation information.

New Improved PTF Procedures

Release 12 inaugurates several new procedures designed to speed up the flow of maintenance changes to customer locations and to improve communications regarding known programming restrictions. Here is a summary of the documentation for maintenance information:

1. System Prose - designed primarily for customer system programmers responsible for system generation plus IBM personnel. The system prose describes known restrictions judged to be significant to most users. It will be distributed with the system when shipped from PID.

2. Installation Considerations - a new document containing guidelines, tips, and cautions based on experience during testing and early use at the Programming Center and other IBM locations. It will be distributed with the system from PID. An early version of this document is in the Installation Newsletter 67-15 dated July 28.

3. Programming Systems Memorandums (PSMs) - the format and content have been expanded and now include:

   A brief description of all outstanding APARs.

   A symptom index to help associate observed problems with previous APARs and known solutions.

   An EC level chart which correlates hardware level requirements with OS components.

   A PTF applicability chart listing all PTFs that are generally available and showing which of the OS releases they apply to. Also, a projected release number for permanent correction.

While PSMs are designed primarily for Field Engineering use, the ordering procedure* now permits subscriptions for direct mailing on an individual basis. The normal updating cycle is every two weeks. PSMs are not IBM Confidential and may be of great value when planning for system generation and maintenance.

   *The procedure for ordering automatic shipment of PSMs is described in Branch Office Manual, DP Sales Activity Section, pages 4-551 and 4-552.

4. Maintenance Prose - designed for both systems engineers and system programmers; identifies specific APAR problems corrected in the release. It will be distributed with the memorandum to current users by PID.

FE - SE System Generation Planning

Close cooperation between Field Engineering and Systems Engineering is vitally important, particularly when planning to install a new release. The following procedure is strongly recommended before any Operating System generation and installation is attempted:

Field Engineering and Systems Engineering representatives should meet before system generation will be performed. All programming components to be used by the customer should be reviewed for known restrictions or PTFs. Applicable PTFs should be installed before attempting customer operations. The review should consider all available published information plus information carried in RETAIN or SECOM. Required PTFs should be ordered and on site before system generation is attempted (see "PTF distribution" below).

PTF Distribution

A trial procedure is in effect with Release 12. Automatic distribution of all PTFs will be made to every account ordering Release 12, marked for delivery to the customer engineer. This will assure that most PTFs are on hand if needed. The PTFs are to be given to the responsible programming systems customer engineer for handling.

PTFs represent changes which have not been fully integrated into the system; their testing is not as complete as normal distribution components. PTFs should be installed only where required. All distributed PTFs should not be installed at every customer location.

MVT Installation Considerations

The success of early installations is based on proper installation and planning. There are major areas of difference between MVT and previous levels of the Operating System, that must be understood. These include:

New JCL parameters.

Logical consequences of having separate reader, initiator, and writer functions.

The use of catalogued procedures to specify reader, initiator, and writer operating parameters.

Logical changes needed in catalogued procedures to allow multijob operation.

New operator commands.

Operational characteristics related to region sizes and relative job priorities.

Implementation of internal functions such as PCI fetch.

Sub-pools and main storage allocation.

Automatic Volume Recognition which is supported only with PCP and MFT.

IBM and field test locations using MVT all agree that additional training is needed to effectively install and use MVT. Each account planning MVT use should have at least one SE available who has had formal education and hands-on experience using the system. Customer training for system programmers and operators must be planned to precede actual installation of MVT. Study materials will be made available directly to those accounts who intend to use this initial release of MVT by DP Education Development Department, Poughkeepsie.

Deferred Functions

As announced in letter P66-119 and associated sales manual pages, some items of support under MVT are not supported at this time. Release 12 MVT support excludes these features:

COBOL E, Assembler E, ALGOL F, Rollout/Rollin, checkpoint/restart, disk SYSIN/SYSOUT (as initial input to a Reader/Interpreter or final output from a writer), By Pass Label Processing (BLP), and Accounting Routines provided with Release 11.

Performance

Test job stream results show that MVT can perform multijob operations efficiently where adequate resources are available to meet the demands of concurrently operating jobs. Performance depends on application, CPU, channels, I/O devices, and installation operation decisions to the degree that no generalized way to predict performance yet exists. Optimum performance may require some job sequence preplanning and operator action to assure that appropriate job combinations run concurrently.

Accounting Routines

MVT provides the same "user exit" accounting routine capability as OS Release 10, plus the option to accumulate individual job step time and use the System log. Note that the improved job accounting facilities delivered with Release 11 are not in MVT, Release 12.

Engineering Requirements

EC 257674 is required for Model 50 operation using MVT. EC 257672 is a prerequisite. These two ECs may be applied to a Model 50 at EC level 257238.

Basic Program Material

The following SRL publications and documentation appropriate to the components ordered will be shipped by PID with each initial order. Machine readable material is distributed as indicated below.

SRL Publications

System/360 Operating System:

Job Control Language TNL N28-2214, N28-2226, N28-2242*	C28-6539-4
Operator's Guide TNL N28-2209, N28-2218, N28-2240*	C28-6540-4
Supervisor and Data Management Services TNL N28-2202, N28-2246*	C28-6646-0
Supervisor and Data Management Macro Instructions TNL N28-2217, N28-2223, N28-2248*	C28-6647-0
Checkpoint and Restart	C28-6656-0
System Programmer's Guide TNL N28-2221, N28-2241*	C28-6550-2
Storage Estimates	C28-6551-4*
System Generation TNL N28-2230, N28-2252*	C28-6554-2
Messages and Completion Codes and Storage Dumps TNL N28-2235, N28-2250*, N28-2258*	C28-6631-1
Starter System Operating Guide TNL N28-2254*	C28-6630-1
Maintenance TNL N28-2160	C27-6918-0
Utility Programs	C28-6586-5*
TESTRAN TNL N28-2249*	C28-6648-0
Sort/Merge TNL N28-2216, N28-2238, N28-2253*	C28-6543-3
Assembler F Programmer's Guide	C26-3756-2*
Assembler E Programmer's Guide TNL N28-2140	C28-6595-0
FORTRAN IV E Programmer's Guide TNL N28-0211, N28-0233*	C28-6603-1
FORTRAN IV G Programmer's Guide TNL N28-2212, N28-0212, N28-0234*	C28-6639-0
FORTRAN IV H Programmer's Guide TNL N28-2211, N28-2228, N28-2247*	C28-6602-0
FORTRAN IV Library Subroutines	C28-6596-2
COBOL E Programmer's Guide	C24-5029-2
COBOL F Programmer's Guide TNLs N28-0177*, N28-0238*	C28-6380-0
ALGOL F Programmer's Guide	C33-4000-0
Linkage Editor TNL N28-2201, N28-2224, N28-2239*	C28-6538-3
PL/I F Programmer's Guide TNL N33-6000, N33-6002*	C28-6594-1
PL/I F Library Computational Subroutines	C28-6590-0
Graphic Programming Services for 2250 Display Unit TNL N27-1278*	C27-6909-3
Graphic Programming Services for 2260 Display Station (Local) TNL N27-1279*	C27-6912-3
QTAM Message Control Program TNL N30-5006	C30-2002-1
QTAM Message Processing Program TNL N30-5005	C30-2003-1
Basic Telecommunications Access Method TNL N30-5007, N30-5013	C30-2004-0

* Denotes change from previous release.

If only the form numbered manuals or additional manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

Documentation -- Program Material List ... OS/360 Prose

Machine Readable -- The complete OS/360 is distributed:

For the three Drive 2311 User -- On three 2400 foot reels of magnetic tape, either 9-track (800 or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required), or three 1316 Disk Packs.

For the 2314 User -- On one 2400 foot reel of magnetic tape, either 9-track (800 or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required).

For the Two Drive 2311 User -- The customized OS/360 is distributed on two 2400 foot reels of magnetic tape, either 9-track (800 or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required), or two 1316 Disk Packs.

Ordering Procedure

For new users the branch office must have the Program Order Form for System/360 Operating Systems (120-1411). Current users of OS/360 will receive a prepunched Program Order Card and a letter announcing the availability of release 12 instructing them to order the new release through the branch office, using this prepunched card. Complete ordering instructions are provided in the letter to users.

In either case, the order form used (120-1411), or the prepunched Program Order Card, must contain the program number for each OS/360 component (if being ordered for the first time) for which program documentation and maintenance material is required.

All orders must indicate the number of 2311 disk storage drives available to perform system generation. Only those orders stating "Two drives to be used for SYSGEN" will be customized, as described in letter P67-1. All other 2311 users will be sent the entire system, for which three disk packs or three reels of tape are required.

Special Notes for Two-Drive Users

1. See Table 1 of this P Letter for sizes of distributed components (reference P67-1 for descriptive information).

2. Branch offices are responsible to assure that valid combinations of components are ordered.

3. Individual components (such as FORTRAN IV H) require the corresponding level of SYS1. GENLIB, which is distributed as a part of the Primary Control Program (360S-CI-505). PCP should therefore be ordered in all cases.

Special Note for 2314 Direct Access Storage Facility Users

OS/360 Release 12 provides a starter system for 2314 residence. Program distribution medium for 2314-resident systems will be on one reel of either 7- or 9-track magnetic tape. Tapes will be in the dump/restore format. Users who order the 2314 Starter System should indicate 2314 on the back of the program order card.

Since all 2314s provide sufficient capacity for system generation from the full OS/360 libraries, no customization (see P67-1) is planned for 2314-resident systems.

A 2314 user having two or more 2311 Disk Drives but no tape may order the 2311-resident system using the 1316 Disk Pack as the distribution medium. System configurations which do not include either 2311s or tape must make local arrangements for a system with both 2314 and Tape to perform the tape-to-2316 Disk Pack restore operation.

A branch office unable to arrange for tape-to-2316 Disk Pack conversion should contact the regional manager of Programming Systems Marketing for assistance.

Program components may be selected from the following list. Each component for which program documentation and maintenance material is required must appear on the order form.

Starter System for 2311 Residence	360S-CI-514
Starter System for 2314 Residence	360S-CI-534
Primary Control Program	360S-CI-505**
Primary Data Management	360S-DM-508**
OS/360 Utilities	360S-UT-506
Independent Utilities	360S-UT-507**
Assembler E	360S-AS-036+
Assembler F	360S-AS-037
Linkage Editor E	360S-ED-510**
TESTRAN	360S-PT-516**
Basic Direct Access Method (BDAM)	360S-DM-509**
Basic Telecommunications Access Method (BTAM)	360S-CQ-513
QTAM Queued Telecommunications Access Method (QTAM)	360S-CQ-519
Graphic Programming Services	360S-IO-523**
Indexed Sequential Access Methods (BISAM, QISAM)	360S-IO-526
Sort/Merge	360S-SM-023
FORTRAN IV E	360S-FO-092 Note 1
FORTRAN IV G	360S-FO-520 Note 1**
FORTRAN IV H	360S-FO-500 Note 1
FORTRAN IV Library	360S-LM-501
COBOL E	360S-CO-503+Note 1**
COBOL E Library	360S-LM-504
COBOL F	360S-CB-524 Note 1**
COBOL F Library	360S-LM-525
PL/I F	360S-NL-511 Note 1
PL/I Subroutine Library	360S-LM-512**
ALGOL F	360S-AL-531+
ALGOL F Library	360S-LM-532 Note 1
SER0, SER1, &EREP for Model 40	360S-DN-527**
SER0, SER1, &EREP for Model 50	360S-DN-528**
SER0, SER1, &EREP for Model 65	360S-DN-529**
SER0, SER1, &EREP for Model 75	360S-DN-530**
Report Program Generator	360S-RG-038
MVT	360S-CI-535***

** Component change with this release.
*** Component new with this release.
+ Components not supported for operation in an MVT (360S-CI-535) environment.
Note 1: To use language compilers, the corresponding library is required.

If either 9-track (800 bpi or 1600 bpi) or 7-track (800 cpi) magnetic tape is not specified on the IBM Program Order form, 9-track at 800 bpi will be forwarded.

Magnetic tapes may be ordered or forwarded or disk packs may be forwarded in accordance with current procedures as described in the DP Sales Activity section of the Branch Office Manual.

Orders currently in transit to PID will be filled with the Release 12.

Table #1

OS/360 Release 12 Component Sizes:

Distribution Volume Library Space (2311 tracks)

Component Name	360S	Notes	Starter System	SYS1.PROCLIB	SYS1.PL1LIB	SYS1.FORTLIB	SYS1.COBLIB	SYS1.SORTLIB	SYS1.MODLIB	SYS1.GENLIB	SYS1.MACLIB	SYS1.SAMPLIB
			DLIB01								DLIB02*	
Starter System (2311)	CI-514	7	590									
Primary Control Program	CI-505	1, 8		2					118	959	104	13
MVT	CI-535	9		5					79			4
Primary Data Management	DM-508	1							57		118	
Direct Access Method (BDAM)	DM-509	5							8		3	
Indexed Sequential (ISAM)	IO-526	6							46		4	
Basic Temecommunications (BTAM)	CQ-513								6		43	
Queued Telecommunications (QTAM)	CQ-519								19		44	
Graphic Programming Service	IO-523								18		120	23
Assembler E	AS-036	1		4					43			10
Assembler F	AS-037	4		4					38			10
TESTRAN	PT-516			5					25		52	
Sort/Merge	SM-023			2				10	72			23
Linkage Editor E	ED-510	1		3					30			
OS/360 Utilities	UT-506	1		2					78			12
Independent Utilities	UT-507	1										49
COBOL E	CO-503	5		3					101			29
COBOL E Library	LM-504	3					11					
COBOL F	CB-524	5		4					83			5
COBOL F Library	LM-525	3					9					
FORTRAN E	FO-092	5		4					30			8
FORTRAN G	FO-520	5		4					23			77
FORTRAN H	FO-500			4					197			7
FORTRAN Library	LM-501	3				1			28			
PL/I F	NL-511	5, 6		4					240			6
PL/I Library	LM-512	3			52				26			
RPG	RG-038			4					52			5
SER0, SER1, EREP Model 40	DN-527	2							12			
SER0, SER1, EREP Model 50	DN-528	2							13			
SER0, SER1, EREP Model 65	DN-529	2							12			
SER0, SER1, EREP Model 75	DN-530	2							14			
ALGOL	AL-531			4					30			4
ALGOL Library	LM-532	3							17			

* DLIB01 if space is available and if the Starter System or the Primary Control Program or both are not ordered.

** On DLIB03 if the full OS/360 is received.

Notes:

1. Minimum component for a system able to perform system generation. See also Note 4 where appropriate.

2. Recommended use.

3. Used by and required with the preceding component(s) in the chart.

4. Alternative component to the preceding component in the chart. Either or both may be selected.

5. BDAM is required by the direct access statements of COBOL, FORTRAN, and PL/I.

6. ISAM is required by object programs using the Indexed Organization.

7. Required with initial orders; subsequent orders may be processed by the user's own system. The Starter System actually contains several libraries, as described in the Starter Guide SRL (C28-6630).

8. Required with orders for processors, since the SYS1.GENLIB contains the related system generation macro instructions.

9. MVT users must order both 360S-CI-505 and 360S-CI-535.

Reference Publications: OS/360 User Libraries, C20-1663 ... OS/360 TESTRAN User Guide, C20-1652 ... OS/360 Utilities User Guide, C20-1661 ... OS/360 System Generation Configurator, C20-1660 ... OS/360 JCL Charts, C28-6632-1 ... System Control Blocks, C28-6628-1.

Reference Cards: Linkage Editor, X20-1739 ... Supervisor Macros, X20-1738 ... Data Management Macros, X20-1733 ... Magnetic Tape Record Characteristics, X22-6837-5.

John Fahey
Director of DP Marketing

Disk Operating System/360 [A]

Release 13 can now be ordered. Shipments will begin the week of August 14. In addition to the normal maintenance for APARs it includes:

> DOS/360 QTAM Extensions
> Communications Serviceability Facilities (CSF) ... highlights are:
>
>> Error Recovery Procedures
>> Error Counts
>> On-Line Terminal Tests
>> Operator Control (Optional)
>> Checkpoint/Restart (Optional)
>>> See P67-43
>
> 2740 Data Communications Terminal Support.

> DOS/360 COBOL RERUN Clause
>
> RERUN clause enables the user to checkpoint his program periodically during its execution. The RERUN option uses integer RECORDS as outlined in TNL N28-0232. After the checkpoint has been executed, the user may restart his program using the DOS/360 restart procedures.

> DOS/360 COBOL Sterling Features
>
> Sterling Currency Feature provides for the non-decimal nature of Sterling currency. The user defines his Sterling items in a specially formatted PICTURE clause and the compiler makes the adjustments necessary to complete normal operations on the fields.

Reference Material

System/360 DOS/TOS COBOL Programmer's Guide, C24-5025-3, TNL N28-0221* ... System/360 DOS/TOS COBOL Language Specification, C24-3433-3, TNL N28-0232 ... System/360 Disk Operating System QTAM Message Control Program, C30-5004-0, TNL N30-5014 ... System/360 Disk Operating System Queued Telecommunications Access Method Message Processing Program Services, C30-5003-2, TNL N30-5015.

Program Material and Ordering Procedure -- See Reverse Side

Tape Operating System/360 [B]

The TOS/360 COBOL RERUN Clause will be available December 16, 1967.

> RERUN Clause
>
> Enables the user to checkpoint his program periodically during its execution. The RERUN option uses integer RECORDS as outlined in TNL N28-0232. After the checkpoint has been executed, the user may restart his program using the appropriate operating system restart procedures.

Publications

IBM System/360 DOS/TOS COBOL Programmer's Guide; C24-5025-3, TNL N28-0221. IBM System/360 DOS/TOS COBOL Language Specification, C24-3433-3, TNL N28-0232.

John Fahey
Director of DP Marketing

Release Date: August 9, 1967
Distribution: All Areas

CONTENTS

DOS/360 ... Release 13 can now be ordered. [A]

TOS/360 ... COBOL RERUN Clause will be available December 1967. [B]

———Published by DP Sales Publishing Services, WTHQ———

Basic Program Material

The following SRL publications appropriate to the components ordered are shipped by the Program Information Department (PID) with each initial DOS/360 order.

SRL Publications: Machine Readable Material is distributed as indicated below --

System/360 Disk Operating System

Operating Guide	C24-5022-2
TNLs N24-5193, N24-5286, N24-5249, N24-5303, N24-5317	
Concepts and Facilities	C24-5030-2
TNLs N24-5182, N24-5191, N24-5233	
Performance Estimates	C24-5032-2
TNLs N24-5293, N24-5310, N24-5319	
Systems Generation and Maintenance	C24-5033-3
TNLs N24-5324, N24-5309, N24-5320	
Data Management Concepts	C24-3427-1
TNLs N24-5122, N24-5169, N24-5197	
System Control and System Service Programs	C24-5036-1
TNLs N24-5218, N24-5289, N24-5248, N24-5302	
Supervisor and Input/Output Macros	C24-5037-2
TNLs N24-5306, N24-5312	
Basic Telecommunications Access Method	C30-5001-4
Utility Macros Specifications	C24-5042-1
TNLs N24-5184, N24-5268	
Vocabulary File Program for the 7772 Audio Response Unit	C27-6924-1
Utility Programs Specifications	C24-3465-3
(Note - SRL C24-3465-2 plus TNLs N21-5024, N21-5044 and N21-5047 may be used in lieu of SRL C24-3465-3)	
Tape Sort/Merge Program Specifications	C24-3438-3
(Note - C24-3438-1 and TNLs N21-5021, N24-5064, N24-5131, N21-5036, N21-5042 and N21-5050 or SRL C24-3438-2 plus TNLs N21-5036, N21-5042 and N21-5050 may be used in lieu of the SRL C24-3438-3)	
Sort/Merge Program Specifications	C24-3444-2
(Note - SRL C24-3444-1 plus TNLs N21-5035 and N21-5049 may be used in lieu of the SRL C24-3444-2)	
COBOL DASD Macros	C24-5039-1
(Note - C24-5039 and TNLs N24-5142, N24-5181 may be used in lieu of C24-5039-1)	
Assembler Specifications	C24-3414-4
TNL N26-0536	
(Note - C24-3414-2 plus TNLs N24-5057, N24-5076, N24-5107, N26-0516, N26-0520, N26-0533 and N26-0536 or C24-3414-3 plus TNLs N26-0516, N26-0520, N26-0533 and N26-0536 may be used in lieu of C24-3414-4, and TNL N26-0536)	
COBOL Programmers Guide	C24-5025-3
TNLs N24-5264, N28-0221	
COBOL Language Specifications	C24-3433-3
TNLs N24-5188, N28-0232	
FORTRAN IV Programmers Guide	C24-5038-1
(Note - SRL C24-5038-0 plus TNL N21-5034 and N21-5053 may be used in lieu of C24-5038-1)	
FORTRAN IV Language	C28-6629
(Note - C24-5014 plus TNLs N21-5018, N24-5041 and N24-5069, or SRL C24-5014-1 may be used in lieu of SRL C28-6629)	
Report Program Generator	C26-3570-4
TNL N24-5195	
Autotest Specifications	C24-5062
QTAM Message Control Program	C30-5004
TNL N30-5014	
Queued Telecommunications Access Method Message Processing Program Services TNL N30-5015	C30-5003-2
PL/I Subset Language Specifications	C28-6809-1
PL/I Programmers Guide	C24-9005-1
PL/I DASD Macros	C24-5059
TNL N24-5301	

Underlined items denote changes from previous release.

If only the publications or if additional copies of the publications are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

Documentation -- Program Material List ... Attachment I - Temporary Restrictions ... Attachment II - Special Instructions.

Machine Readable -- DOS/360 (without the Tele-processing components) is distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required) or one 1316 Disk Pack. These reels of magnetic tapes are in 1316 Disk Pack restore form. The DOS/360 data are preceded by an initialized 2311 Utility Program and a Tape-to-Disk program.

The Tele-processing components are distributed on one 2400 foot reel of magnetic tape, either 9-track (800 bpi or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required), or one 1316 Disk Pack.

Ordering Procedures

See DP Sales Activity section of the Branch Office Manual.

Magnetic Tapes (2400') may be forwarded to PID or ordered. The order card should accompany the tape or the tape order form; disk packs must be forwarded to PID with the program order card.

When ordering on magnetic tape, if the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

New Users -- Program components may be selected from the following list. Each component for which program documentation and maintenance material is required must appear on the order form.

Supervisor (6K)	360N-SV-474 *
Supervisor (8K)	360N-SV-475 *
Supervisor (10K)	360N-SV-473 *
System Control and Basic IOCS	360N-CL-453 *
Direct Access Method	360N-IO-454
Consecutive Disk IOCS	360N-IO-455 *
Consecutive Tape IOCS	360N-IO-456 *
ISFMS	360N-IO-457 *
Consecutive Paper Tape IOCS	360N-IO-458
BTAM	360N-CQ-469 *
QTAM	360N-CQ-470 *
Compiler I/O Modules	360N-IO-476 *
Optical Character Reader	360N-IO-478
Autotest	360N-PT-459
Assembler	360N-AS-465 *
COBOL	360N-CB-452 *
COBOL DASD Macros	360N-CB-468
FORTRAN IV	360N-FO-451 *
Report Program Generator	360N-RG-460 *
Group 1 Utilities - Unit Recd/Disk	360N-UT-461
Group 2 Utilities - Tape	360N-UT-462 *
Group 3 Utilities - Data Cell	360N-UT-463
MPS Utility Macros	360N-UT-471
Vocabulary File Utility Program	360N-UT-472
Disk Sort/Merge	360N-SM-450 *
Tape Sort/Merge	360N-SM-400 *
PL/I	360N-PL-464

*Component changed from previous release.

DOS/360 is distributed as one pre-generated system with a 6K Supervisor ... or one pre-generated system with an 8K Supervisor ... or one pre-generated system with a 10K Supervisor.

The System Control and Basic IOCS component and one of the three Supervisor components are required. To order these components, specify on the IBM Program Order for System/360 Operating Systems (120-1411) -- System Control and Basic IOCS, 360N-CL-453 and Supervisor (6K), 360N-SV-474, or Supervisor (8K), 360N-SV-475, or Supervisor (10K), 360N-SV-473. Supervisor (8K), 360N-SV-475 assumes the users machine size to be at least 32K. If no supervisor is indicated on the order card, PID supplies the (6K), 360N-SV-474.

DOS/360 is available on two reels of magnetic tape or two disk packs.

The first volume contains all of the DOS/360 components listed above except the Tele-processing components (BTAM, QTAM, and the Vocabulary File Utility Program, including the Sample Program, VFU1), which are contained in the second volume.

If the Tele-processing components are required, two volumes must be supplied to PID; if they are not required, only one volume need be supplied.

Current Users -- Current users will receive a prepunched Program Order Card and a letter announcing the availability of DOS Release 13. The letter instructs them to order this release through the branch office. Current users must use the prepunched card to order either the Maintenance Package or the Replacement System for Release 13.

Orders for the Release 13 Maintenance Package should be accompanied by one 9-track magnetic tape or one 7-track magnetic tape (Data Conversion feature required) or one 1316 Disk Pack.

Complete ordering instructions are provided in the letter to users.

The Maintenance Package will be available from PID for a period of 60 days following the announcement of availability of System Release 13.

IBM System/360 Attached Support Processor System (ASP)

We are announcing five major improvements to the ASP system to be made available in two releases.

Version 1 Modification

The following new features will be available in a program modification to be released in November 1967:

- Support of the IBM 2314 for ASP work queue.
- Support of Operating System/360 control program option 2 (Multiprogramming with Fixed Number of Tasks -- MFT) on the Support Processor.
- Support to permit use of Synchronous Transmitter Receiver (STR) terminals for remote job processing.

Version 2

Version 2, which will be available in May 1968, will provide:

- Support for Dual Main Processors.
- A new Job Segment Scheduler to improve the resource management in the ASP system including shared devices.

Highlights

The addition of IBM 2314 support for the ASP work queue enhances the workload capacity of the ASP system by adding a larger, faster, and more versatile device for the work queue. The support of OS/360 control program option 2 (MFT) allows an installation, within the constraints of good system design, to increase the number of OS/360 tasks assigned to the Support Processor. Care must be taken in selecting Support Processor configurations and tasks in an MFT environment to ensure that the ASP system performance will not be degraded for such a configuration.

The ASP system supports two data formats for transmission to and from STR remote terminals: the IBM 1978 (RPQ device) data format in Send Binary and Receive First Character modes, and a specially defined data compression format oriented toward System/360 computer terminals. Provision is made in the ASP STR remote terminal support to permit dedicated or nondedicated lines and programmer-specified data set routing. It is the responsibility of the customer to provide the programming of any remote computer terminals.

Version 2 will replace Version 1. Although Version 2 is very similar to Version 1, differences in the internal structure of the system will require installed users to revise their local system modifications and extensions. Instructions for converting customer-written Dynamic Support Programs from Version 1 to Version 2 will be provided with the release of the Version 2. Preliminary information on this conversion will be available from ASP Regional Marketing Representative by October 15, 1967.

The Version 2 ASP Job Segment Scheduler will provide for more flexible job scheduling, permitting rescheduling for a specific device in addition to scheduling by device class. Incorporated with the new Job Segment Scheduler is a new Main Device Scheduler, which replaces the current system setup and breakdown programs. The Main Device Scheduler provides for the setup of devices on specified Main Processors, taking into account the existence of devices shared between Main Processors or between a Main and a Support Processor. In a Dual Main Processor configuration, the Support Processor will distribute jobs to the Main Processors on a priority basis, taking into account special processing requirements as identified by the application programmer. It is the responsibility of the application programmer to indicate any processor dependencies when he submits his job.

Support Material

System Description Manual -- Version 1 (H20-0223) ... System Description Manual -- Version 2 (H20-0466 -- do not order from Mechancisburg until availability is announced in a PRL). Preliminary copies can be obtained from your ASP Regional Marketing Representative.

See the following pages for detailed information.

For further information contact your ASP Regional Marketing Representative.

John Fahey
Director of DP Marketing

<u>Attached Support Processor (Modification available 11/67)</u>: Provides a multiproc-
essor operating system
as an extension of IBM
System/360 Operating System (OS/360). Through a reduction in required operator
intervention, ASP provides an improved operational environment, enhancing system
workload capacity and reducing turnaround time. The configuration consists of two
IBM System/360 computers connected via the channel-to-channel adapter. The Sup-
port Processor (Model 40 or larger) provides the support functions (including card
reading, punching, and printing) under computer control, while a highspeed Main Proc-
essor (usually Model 50, 65, or 75) perform the application workload. ASP also
permits intermixing OS/360 and 709X Emulator (360C-EU-729) jobs in the input
stream, supports remote job processing from STR terminals, and permits other back-
ground jobs to share Support Processor CPU time with the primary support functions.
(360A-CX-15X)

<u>Description</u>: The ASP Supervisor operates as a task in the Support Processor under
control of OS/360. Either the Primary Control Program or (feature available with
modification) Multiprogramming with Fixed Number of Tasks -- MFT (control program
option 2) may be used. The ASP Supervisor schedules and initiates the various sup-
port and background functions, including input of jobs to the Main Processor, on a
priority basis. Since it is preplanned to provide multiprogramming in the Support Proc-
essor in a well-defined, limited framework, the ASP Supervisor operates as a multi-
program monitor to allocate CPU and channel time, core storage, and devices among
the various functions, with minimal overhead.

The Main Processor operates under OS/360 Primary Control Program. The system
input and output devices for the Main Processor are replaced by the channel-to-channel
connection with the Support Processor. Direct access storage devices for systems
residence and program library are attached to the Main Processor, as are any input/
output devices accessed during execution by the problem programs. The operating
system in the Main Processor provides an environment for the problem program identi-
cal to a standalone system, with the exception of the use of the OS/360 catalog.
The use of the OS/360 catalog for generation data groups will cause operational
problems and should be avoided. The performance of the system is directly related to
the throughput capability of OS/360 on the Main Processor.

Modifications incorporated into OS/360 permit 709X Emulator and OS/360 jobs to
be intermixed in the input stream. Operating System/360 used in the Main Processor
is modified to overlay itself with the Emulator program upon a signal from the Support
Processor. The 709X Emulator program is similarly modified to overlay itself with
OS/360 at the end of an emulation job or a group of consecutive emulation jobs. The
Emulator program is also modified to recognize the channel-to-channel adapter as its
system input and output devices. Thus, the system input and output streams for Em-
ulator jobs are handled by the Support Processor in the same manner as are those for
OS/360 jobs.

The Support Processor will accept job streams from remote computer terminals over
STR transmission lines (feature available with modification). The ASP system will
support two input/output data formats for this remote job processing. One is compat-
ible with the IBM 1974 or the IBM 1978 terminals (RPQ devices). The other is
oriented toward IBM System/360 computers (Model 20 and other System/360 proc-
essors equipped with proper STR features on a 2701 Data Adapter Unit) and the IBM
1130 system. The data format is suitable for any computer which has an eight-bit
byte data format and which can accept STR transmission. Note that the ASP system
does <u>not</u> include the customer programming that is necessary in the remote terminals.

<u>Features</u>: The special features of the ASP system are increased system workload
capacity; reduction of turnaround time; improved operating efficiency; intermixed OS/
360 and 709X Emulator jobs in the input stream (for a Model 65 Main Processor
with the 709X Emulator feature); and workload balancing between two System/360
processors.

These features are made possible by:

1.   Computer-controlled execution of support functions in a multiprogrammed
     mode on a lower cost Support Processor. This feature permits --

     a.   Priority job scheduling
     b.   Automatic processing of system input and output data sets
     c.   Automatic switching between OS/360 and 709X Emulator jobs
     d.   Concurrent processing of peripheral and other user programs (i. e.,
          Card-to-Tape ... Tape-to-Tape ... Tape-to-Printer ... Tape-to-
          Card ... Card-to-Printer ... Card-to-Punch ... 7090/94 Direct
          Couple Operating System (DCS) Tape Format Deblocking ... User-
          written background programs)

2.   Reduction of resource interference on Main Processor in terms of:

     a.   Core Storage. Core buffering of Main Processor input and output data
          sets in the Support Processor.
     b.   CPU Time. Multiplexer channel interference and interrupt service for
          peripheral input/output devices eliminated in Main Processor.
     c.   Data Channels. Selector channel data flow time for system input and
          output on Main Processor reduced.
     d.   Input/Output Devices. Algorithm provided for efficient management of
          direct access storage devices for system input and output data sets.

3.   Pre-execution setup of removable input/output devices on Main Processor.

4.   Support of multiple operator consoles for diversification of system operation.

5.   Concurrent SPOOLing of input/output background processing on Support
     Processor during emulation on Main Processor.

6.   Selective job scheduling for Main Processors and Support Processor devices.

7.   Remote job processing from STR terminals (feature available with modification).

<u>Use</u>: Operational control of the ASP system is exercised by the operator from the
console typewriter or an alternate operator console on the Support Processor. A
command language is provided to start ASP, to delete and restart jobs, to initiate
background processing, to change priority of jobs, and to determine the backlog of
jobs in the queue.

ASP provides a standard sequence of functions for each job in the Support Processor:
Input Service, Main Processor Service, Print Service, Punch Service, and job purge.
This standard sequence may be replaced to adapt to the particular needs of an install-
ation. Special control cards are not required for jobs using the standard sequence.
The ASP control cards provide a simple means of altering this sequence for a particu-
lar job.

The ASP program in the Support Processor requires an OS/360 JOB card with several
additional fields for each job run under the system. These fields are used to convey
accounting and priority information to the ASP Supervisor. They are ignored by OS/
360 when it reads the JOB card in the Main Processor.

For jobs to be executed under the control of the 709X Emulator, the programmer must
use an ASP JOB card and 709X Emulator control cards in addition to the control
cards required by the 7090/94 programming system being used. The ASP system
separates the ASP control cards and 709X Emulator control cards from the job stream,
presenting the 7090/94 programming system with its system input job stream only.
The Support Processor may assume the functions of the on-line unit record devices
for the 709X Emulator provided the operator is not required (through program logic) to
attend to or examine these devices during program execution.

<u>Special Sales Information</u>: ASP is designed for the user (with a large scientific sys-
tem) whose workload consists of many jobs of short duration. The degree to which an
installation will realize the functional and performance advantages of the ASP system
is determined primarily by the nature of the job mix.

<u>Customer Responsibilities</u>: A customer using ASP must take the following steps be-
fore installation to ensure that the use of the system will be satisfactory --

     1.   He must be responsible for ordering and installing satisfactorily all required
          communications equipment.

     2.   Appropriate training must be given the application programmers and system
          operators in OS/360 and the 709X Emulator, in addition to training in the
          use and/or operation of ASP.

     3.   It is highly recommended that a customer system programmer become familiar
          with the internal operations of the system. This knowledge will enable him
          to customize the ASP system to the unique operational environment of his
          installation.

     4.   He is responsible for any programming necessary to operate the remote
          terminals.

     5.   He is also responsible for converting his own modifications and extensions
          of ASP from Version 1 to Version 2.

<u>Programming Systems</u>: The ASP systems programs are written in OS/360 Macro
Assembler Language. Programs to provide additional functions, known as Dynamic
Support Programs (DSPs), can be incorporated into the Support Processor by the cus-
tomer at his installation. These programs also must be written in OS/360 Macro
Assembler Language. The minimum OS/360 control program that will execute ASP
includes the Primary Control Program, a linkage editor, and the OS/360 utility pro-
grams. The OS/360 Macro Assembler program (F-level) must be available if pro-
gram modifications are anticipated.

ASP users must order these programming systems separately: OS/360, the 709X
Emulator program (360C-EU-729), if used, and the Synchronous Transmit-Receive
Access Method for OS/360 (360A-SE-33X), if STR terminals are to be used.

<u>Minimum System Requirements</u>: The configuration requirements for the Main Process-
or are identical with those of a standalone processor operating under OS/360, except
that the channel-to-channel adapter replaces the normal system input and output de-
vices. If the 709X Emulator is to be used, the Main Processor must have at least
one 2311 Disk Storage Drive for OS/360 and 709X Emulator checkpoints. The
modifications to the OS/360 Primary Control Program nucleus that are required for
operation as an ASP Main Processor increase the nucleus by approximately 2,500
bytes.

<u>Support Processor With OS/360 Primary Control Program</u>: The minimum Support
Processor for executing under the Primary Control Program is a Model 40G with two
selector channels (one dedicated to the channel-to-channel adapter), one 1052
Printer-Keyboard Model 7 (Console Typewriter), one 2540 Card Read Punch, one
1403 Printer Model 2 or N1, and three 2311 Disk Storage Drives. This configur-
ation permits queuing of up to 30 jobs. (A job is considered equal to a combined
input and output stream of 5,000 100-byte records). System capacity can be ex-
panded by attaching 1403 Printers Model 2 or N1, 2540 Card Read Punches, 2311
Disk Storage Drives, 2401 Magnetic Tape Units (at least one 9- or 7-track with
Data Conversion feature unit is recommended for system maintenance). The ASP
system supports 2401 Magnetic Tape Units Model 1, 2, or 3 for use by background
programs.

In addition, a 2701 Data Adapter Unit with the Synchronous Data Adapter Type 1
may be attached for remote job processing (feature available with modification). When
the number of functions required or the workload capacity needed exceeds the capabili-
ties of this configuration, larger core storage or a faster processor should be consid-
ered. An IBM 2314 Direct Access Storage Facility may be substituted for the 2311

Disk Storage Drive as the ASP work queue device (feature available with modification). The number and type of direct access storage devices, the type of processor, and the size of core depends upon the individual installation's workload. The user should refer to the ASP System Programmer's Manual (H20-0323), which contains an algorithm for estimating core storage needs.

Devices supported as auxiliary operator consoles in the ASP system are: IBM 2740 Communication Terminal attached on a dedicated line through an IBM 2701 Data Adapter Unit ... IBM 1443 Model N1 Printer (output only) ... IBM 1053 Model 4 Printer attached through an IBM 2848 Display Control (output only) ... IBM 1403 Model 2 or N1 Printer (output only).

Support Processor With OS/360 Control Program Option 2 (MFT): The minimum Support Processor for use of OS/360 control program option 2 (Multiprogramming with Fixed Number of Tasks -- MFT) is the same as for the Primary Control Program except for the following additions:

.   The minimum processor is a Model 40H. For option 2 (MFT) operation, the minimum partition size is 100,000 bytes. Consideration should be given, however, to larger partition sizes, commensurate with planned system facilities.

.   Additional peripheral equipment must be added to support system input and output to the other tasks. Either two 2400 series tape units or an additional 2540 Card Read Punch and a 1403 Model 2 or N1 Printer will satisfy this requirement. Since ASP never terminates, it is unable to share the devices which are allocated to it.

.   At least one IBM 2740 Communication Terminal, attached through the 2701, must be added as the ASP operator terminal. Since the IBM 1052 Printer-Keyboard must be reserved for OS/360 system operations in an MFT environment, it is unavailable to the ASP system for operator communications.

.   At least one IBM 2401 Magnetic Tape Unit (9- or 7-track with Data Conversion feature) should be available for system maintenance.

Note: All ASP configurations are complex configurations and must be system assured.

Engineering Change Levels: In addition to the required engineering changes to run the supported levels of OS/360 and the 709X Emulator, the EC levels required for proper functioning of the ASP system are EC 705754 and EC 254902 on the Channel-to-Channel Adapter (#1850).

Basic Program Material for System currently availability:

Publications* -- Application Programmer's Manual (H20-0322) ... Console Operator's Manual (H20-0321) ... System Programmer's Manual (H20-0323) ... Application Directory.

Machine Readable** -- Object programs, source programs, OS/360 modifications, 709X Emulator modifications, and macro definitions may be obtained on one full reel of magnetic tape in either 9- (800 or 1600 bpi) or 7-track (800 cpi, Data Conversion feature required) mode.

Optional Program Material:

Machine Readable** -- An assembly listing tape and a flowchart listing tape are available, each on a full reel of magnetic tape in either 9- (800 or 1600 bpi) or 7-track (800 cpi, Data Conversion feature required) mode. These tapes may be printed with the OS/360 utility program or the ASP Tape-to-Printer program.

Ordering Procedure: See DP Sales Activity section of the Branch Office Manual.

*If only the form numbered manuals are required, order from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the distribution medium is not indicated on the back of the program order card, a 9-track tape (800 bpi) will be forwarded.

Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form.)

Reference Material: System Description Manual -- Version 1 (H20-0223) ... System Manual (Y20-0069).

For further information see your ASP Regional Marketing Representative.

Attached Support Processor Version 2:   Provides a multiprocessor operating system as an extension of IBM System/360 Operating System (OS/360).

Version 2 extends ASP Version 1 to support Dual Main Processors. In addition, many other improvements have been added to enhance system operation and to facilitate implementation of local modifications and extensions. Through a reduction in required operator intervention, ASP provides an improved operational environment, enhancing system workload capacity and reducing turnaround time. The Version 2 configuration consists of two or more IBM System/360 computers connected via the channel-to-channel adapter. The Support Processor (Model 40 or larger) provides the support functions (including card reading, punching, and printing) under computer control, while one or two high-speed Main Processors (usually Model 50, 65, or 75) perform the application workload. ASP also permits intermixing of OS/360 and 709X Emulator (360-EU-729) jobs in the input stream, supports remote job processing from STR terminals, and permits other background jobs to share Support Processor CPU time with the primary support functions.

Note: Version 2 introduces a new resource scheduling concept and revised control table formats. Consequently, customer program modifications or extensions to Version 1 must be converted to be used with Version 2. Instructions for this conversion will be provided with Version 2. Preliminary information will be available from the ASP Regional Marketing Representatives by October 15, 1967.

Description: The ASP Supervisor operates as a task in the Support Processor under control of OS/360. Either the Primary Control Program or Multiprogramming with Fixed Number of Tasks -- MFT (control program option 2) may be used. The ASP Supervisor schedules and initiates the various support and background functions, including input of jobs to the main Processor, on a priority basis. Since it is preplanned to provide multiprogramming in the Support Processor in a well-defined, limited framework, the ASP Supervisor operates as a multiprogram monitor to allocate CPU and channel time, core storage, and devices among the various functions, with minimal overhead.

The Main Processor operates under OS/360 Primary Control Program. The system input and output devices for the Main Processor are replaced by the channel-to-channel connection with the Support Processor. Direct access storage devices for systems residence and program library are attached to the Main Processor, as are any input/output devices accessed during execution by the problem programs. The operating system in the Main Processor provides an environment for the problem program identical to a standalone system, with the exception of the use of the OS/360 catalog. The use of the OS/360 catalog for generation data groups will cause operational problems and should be avoided. The performance of the system is directly related to the throughput capability of OS/360 on the Main Processor.

Modifications incorporated into OS/360 permit 709X Emulator and OS/360 jobs to be intermixed in the input stream. Operating System/360 used in the Main Processor is modified to overlay itself with the Emulator program upon a signal from the Support Processor. The 709X Emulator program is similarly modified to overlay itself with OS/360 at the end of an emulation job or a group of consecutive emulation jobs. The Emulator program is also modified to recognize the channel-to-channel adapter as its system input and output devices. Thus, the system input and output streams for Emulator jobs are handled by the Support Processor in the same manner as are those for OS/360 jobs.

The Support Processor will accept job streams from remote computer terminals over STR transmission lines. The ASP system will support two input/output data formats for this remote job processing. One is compatible with the IBM 1974 or the IBM 1978 terminals (RPQ devices). The other is oriented toward IBM System/360 computers (Model 20 and other System/360 processors equipped with proper STR features on a 2701 Data Adapter Unit) and the IBM 1130 system. The data format is suitable for any computer which has an eight-bit byte data format and which can accept STR transmission. Note that the ASP system does not include the customer programming that is necessary in the remote terminals.

If the workload capacity at an installation exceeds one Main Processor, the ASP Support Processor can be expanded to support an additional Main Processor, balancing the total installation workload between the two. In this configuration, termed a Dual Main Processor system, the Main Processors need not be identical but may be any combination of permissible Main Processors. Jobs will be distributed to the available system based upon job priority, device requirements (including the requirement for 709X Emulation), and processor dependency. The application programmer will be responsible for specifying processor dependency (for example, data set dependency), via an ASP control card, if such a dependency exists. The system will provide the programmer with adequate information concerning job execution to enable him to direct subsequent job submissions to the correct processor if required.

Features: The special features of the ASP system are increased system workload capacity; reduction of turnaround time; improved operating efficiency; intermixed OS/360 and 709X Emulator jobs in the input stream (for a Model 65 Main Processor with the 709X Emulator feature); and workload balancing between two System/360 processors.

These features are made possible by --

1. Computer-controlled execution of support functions in a multiprogrammed mode on a lower cost Support Processor. This feature permits --

    a. Priority job scheduling

    b. Automatic processing of system input and output data sets

    c. Automatic switching between OS/360 and 709X Emulator jobs

    d. Concurrent processing of peripheral and other user programs (i.e., Card-to-Tape ... Tape-to-Tape ... Tape-to-Printer ... Tape-to-Card ... Card-to-Printer ... Card-to-Punch ... 7090/94 Direct Couple Operating System (DOS) Tape Format Deblocking ... User-written background programs).

2. Reduction of resource interference on Main Processor in terms of:

    a. Core Storage. Core buffering of Main Processor input and output data sets in the Support Processor.

    b. CPU Time. Multiplexer channel interference and interrupt service for peripheral input/output devices eliminated in Main Processor.

    c. Data Channels. Selector channel data flow time for system input and output on Main Processor reduced.

    d. Input/Output Devices. Algorithm provided for efficient management of direct access storage devices for system input and output data sets.

3. Pre-execution setup of removable input/output devices on Main Processor.

4. Support of multiple operator consoles for diversification of system operation.

5. Concurrent SPOOLing of input/output background processing on Support Processor during emulation on Main Processor.

6. Selective job scheduling for Main Processors and Support Processor devices.

7. Remote job processing from STR terminals.

Use: Operational control of the ASP system is exercised by the operator from the console typewriter or an alternate operator console on the Support Processor. A command language i; provided to start ASP, to delete and restart jobs, to initiate background processing, to change priority of jobs, and to determine the backlog of jobs in the queue.

ASP provides a standard sequence of functions for each job in the Support Processor: Input Service, Main Processor Service, Print Service, Punch Service, and job purge. This standard sequence may be replaced to adapt to the particular needs of an installation. Special control cards are not required for jobs using the standard sequence. The ASP control cards provide a simple means of altering this sequence for a particular job.

The ASP program in the Support Processor requires an OS/360 JOB card with several additional fields for each job run under the system. These fields are used to convey accounting and priority information to the ASP Supervisor. They are ignored by OS/360 when it reads the JOB card in the Main Processor.

For jobs to be executed under the control of the 709X Emulator, the programmer must use an ASP JOB card and 709X Emulator control cards in addition to the control cards required by the 7090/94 programming system being used. The ASP system separates the ASP control cards and 709X Emulator control cards from the job stream, presenting the 7090/94 programming system with its system input job stream only. The Support Processor may assume the functions of the on-line unit record devices for the 709X Emulator provided the operator is not required (through program logic) to attend to or examine these devices during program execution.

Special Sales Information: ASP is designed for the user (with a large scientific system) whose workload consists of many jobs of short duration. The degree to which an installation will realize the functional and performance advantages of the ASP system is determined primarily by the nature of the job mix.

Customer Responsibilities: A customer using ASP must take the following steps before installation to ensure that the use of the system will be satisfactory --

1. He must be responsible for ordering and installing satisfactorily all required communications equipment.

2. Appropriate training must be given the application programmers and system operators in OS/360 and the 709X Emulator, in addition to training in the use and operation of ASP.

3. It is highly recommended that a customer system programmer become familiar with the internal operations of the system.

   This knowledge will enable him to customize the ASP system to the unique operational environment of his installation.

4. The customer is responsible for any programming necessary to operate the remote terminals.

5. He is also responsible for converting his own modifications and extensions of ASP from Version 1 to Version 2.

Programming Systems: The ASP systems programs are written in OS/360 Macro Assembler Language. Programs to provide additional functions, known as Dynamic Support Programs (DSPs), can be incorporated into the Support Processor by the customer at his installation. These programs also must be written in OS/360 Macro Assembler Language. The minimum OS/360 control program that will execute ASP includes the Primary Control Program, a linkage editor, and the OS/360 utility programs. The OS/360 Macro Assembler program (F-level) must be available if program modifications are anticipated.

ASP users must order these programming systems separately: OS/360, the 709X Emulator program (360C-EU-729), if used, and the Synchronous Transmit-Receive Access Method for OS/360 (360A-SE-33X), if STR terminals are to be used.

Minimum System Requirements: The configuration requirements for the Main Processor are identical with those of a standalone processor operating under OS/360, except that the channel-to-channel adapter replaces the normal system input and output devices. If the 709X Emulator is to be used, the Main Processor must have at least one 2311 Disk Storage Drive for OS/360 and 709X Emulator checkpoints. The modifications to the OS/360 Primary Control Program nucleus that are required for operation as an ASP Main Processor increase the nucleus by approximately 2,500 bytes.

Support Processor with OS/360 Primary Control Program: The minimum Support Processor for executing under the Primary Control Program is a Model 40G with two selector channels (one dedicated to the channel-to-channel adapter), one 1052 Printer-Keyboard Model 7 (Console Typewriter), one 2540 Card Read Punch, one 1403 Printer Model 2 or N1, and three 2311 Disk Storage Drives. This configuration permits queuing of up to 30 jobs. (A job is considered equal to a combined input and output stream of 5,000 100-byte records.) System capacity can be expanded by attaching 1403 Printers Model 2 or N1 ... 2540 Card Read Punches ... 2311 Disk Storage Drives ... 2401 Magnetic Tape Units (at least one 9- or 7-track with Data Conversion feature unit is recommended for system maintenance). The ASP system supports 2401 Magnetic Tape Units Model 1, 2, or 3 for use by background programs.

In addition, a 2701 Data Adapter Unit with the Synchronous Data Adapter Type 1 may be attached for remote job processing. When the number of functions required or the workload capacity needed exceeds the capabilities of this configuration, larger core storage or a faster processor should be considered. An IBM 2314 Direct Access Storage Facility may be substituted for the 2311 Disk Storage Drive as the ASP work

queue device. The number and type of direct access storage devices, the type of processor, and the size of core depends upon the individual installation's workload. The user should refer to the ASP System Programmer's Manual (H20-0323), which contains an algorithm for estimating core storage needs and can serve as a preliminary guide for Version 2.

Devices supported as auxiliary operator consoles in the ASP system are IBM 2740 Communication Terminal attached on a dedicated line through an IBM 2701 Data Adapter Unit ... IBM 1443 Printer Model N1 (output only) ... IBM 1053 Printer Model 4 attached through an IBM 2848 Display Control (output only) ... IBM 1403 Printer Model 2 or N1 (output only).

Support Processor with OS/360 Control Program Option 2 (MFT): The minimum Support Processor for use of OS/360 control program option 2 (Multiprogramming with Fixed Number of Tasks -- MFT) is the same as for the Primary Control Program except for:

. The minimum processor is a Model 40H. For option 2 (MFT) operation, the minimum partition size is 100,000 bytes. Consideration should be given, however, to larger partition sizes, commensurate with planned system facilities.

. Additional peripheral equipment must be added to support system input and output to the other tasks. Either two 2400 series tape units or an additional 2540 Card Read Punch and a 1403 Printer Model 2 or N1 will satisfy this requirement. Since ASP never terminates, it is unable to share the devices which are allocated to it.

. At least one IBM 2740 Communication Terminal, attached through the 2701, must be added as the ASP operator terminal. Since the IBM 1052 Printer-Keyboard must be reserved for OS/360 system operations in an MFT environment, it is unavailable to the ASP system for operator communications.

. At least one IBM 2401 Magnetic Tape Unit (9- or 7-track with Data Conversion feature) should be available for system maintenance.

Support Processor -- Dual Main Processors: The minimum Support Processor in a Dual Main Processor configuration is the same as the system which supports the Primary Control Program with these exceptions:

. The minimum Support Processor is a Model 50H. For reasons of system performance, the Model 40 is not recommended except under controlled conditions. For Dual Main Processor support, the minimum partition size is 200,000 bytes.

. A minimum of four operator terminals, at least one of which must be an input terminal, must be available to ASP (for example, a 1052 and three 2740s attached through a 2701).

. A 2314 Direct Access Storage Facility for Support Processor work queue or the equivalent 2311 Disk Storage Drive capacity.

For ease of system maintenance, the Support Processor should have access to at least one 2400 series (9- or 7-track with the data conversion feature) tape unit.

Note: All ASP configurations are complex configurations and must be system assured.

Engineering Change Levels: In addition to the required engineering changes to run the supported Levels of OS/360 and the 709X Emulator, the EC levels required for proper functioning of the ASP system are EC 705754 and EC 254902 on the Channel-to-Channel Adapter (#1850).

Reference Material: System Description -- Version 2 (availability will be announced in a PRL) ... Application Programmer's Manual (H20-0322) ... Console Operator's Manual (H20-0321) ... System Programmer's Manual (H20-0323) ... System Manual (Y20-0069).

For further information see your ASP Regional Marketing Representative.

BPS/360 DASD UTILITIES FOR IBM 2311/2314   [A]

Two new System/360 Basic Programming Support (BPS/360) DASD Utility programs will be provided to supplement DOS/360 when used with the IBM 2311 or 2314:

. 16K Alternate Track Assignment (2311/2314)
. 16K Initialize Disk (2311/2314)

These new programs, which will be available September 1, 1967, perform all the functions currently available with the Alternate Track Assignment (2311), 360P-UT-098; and Initialize Disk, 360P-UT-069 programs. In addition, several new functions will be provided that are selected by the user through utility modifier statements.

Alternate Track Assignment (2311/2314)

Two new parameters are provided in the present utility modifier statement. Optional entries allow the user to:

Flag a track as defective without performing surface analysis.

Perform surface analysis of either a primary track or an alternate track, and flag its condition.

Flag a primary track as not defective without performing surface analysis, and then transfer data from a previously assigned alternate track to the primary track.

Specify the number of times surface analysis is to be performed on a track.

Initialize Disk (2311/2314)

A new utility modifier statement is provided. Optional parameter entries allow the user to:

Perform surface analysis of only those tracks not previously flagged as defective. The flags of tracks already flagged as defective are left unchanged.

Perform surface analysis of all tracks, including those tracks previously flagged as defective.

Flag specific tracks as defective without performing surface analysis.

Specify the number of times surface analysis is to be performed on each track.

Minimum System Requirements

16K main storage, one card reader (1442, 2501, 2520, or 2540), and one printer (1403, 1404*, 1443, 1445, or 1052).
    * Continous forms only.

Reference Publication

TNL N21-5056 to IBM System/360 Basic Programming Support, DASD Utility Programs Specifications, C24-3363-4.

TEST/360 CONTROL CARD EDIT AND ANALYSIS PROGRAM   [B]

TEST/360 Control Card Edit and Analysis (360A-SE-25X) is available. It is a stand-alone program for editing network and message generation control cards prior to using the TEST/360 System, 360A-SE-24R. TEST/360 is an IBM Confidential Type II program available for limited use at the New York Time/Life Datacenter. The primary purpose of the TEST/360 Control Edit and Analysis program is to provide an efficient method of analyzing these control cards and make it possible for prior editing at customer locations.

The user should be familiar with the TEST/360 Control Cards as defined in the TEST/360 Programmer's Manual (Y20-0070). This manual can be ordered from Mechanicsburg with the approval of the Branch Manager and Field Systems Center Manager.

For detailed information see the back of this page. For additional information contact your Field Systems Center.

MAGNETIC TAPE (3200 fci) AVAILABLE FROM PID   [C]

The standard IBM magnetic tape available for purchase from the PID inventory with a program order is Part Number 457893. Specifications are: 10 1/2" diameter, 2400', 3200 fci (flux changes per inch), total-surface tested on a clear front and blue back reel with solid flanges.

Orders for any other magnetic tape specifications cannot be accepted by PID and will be returned to the Branch Office.

See Branch Office Manual, sections 4-403 and 8-403, for complete information on the PID magnetic tape inventory.

John Fahey
Director of DP Marketing

Attachments [6]: P 360S.9, P 360N.9, P 360F.1, P 360C.9, ~~P 360C.10~~, P 1130.15, P 1130.17
Release Date: August 15, 1967
Distribution: All Areas

P67-84
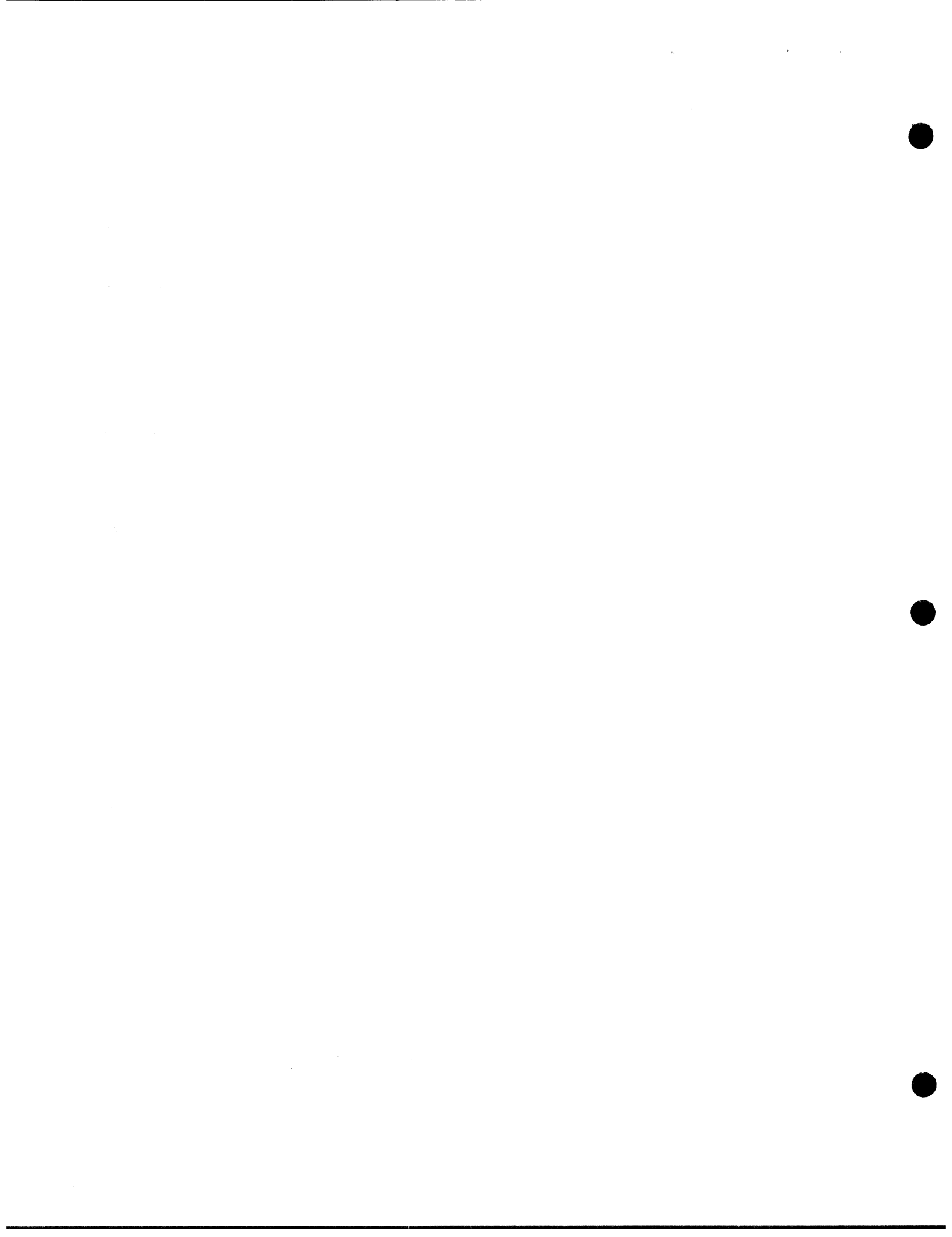
IBM Mathematical Programming System/360 (MPS/360)
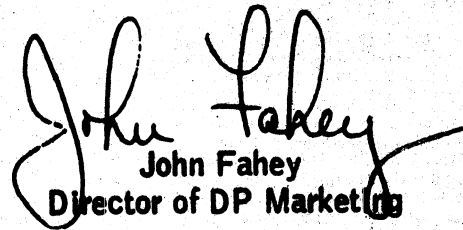
Version 1, Modification Level 3 is available (360A-CO-14X). Modification Level 3 provides the user with a FORTRAN interface (Read Communications Format - READCOMM) to MPS/360. READCOMM is a subroutine which allows the user to write his own MPS/360 procedures in the FORTRAN language. These procedures may access MPS/360 data.

Special Sales Information

This feature of MPS/360 is being distributed from PID as a normal modification level; therefore, current users will not have to re-order the program.

See the back for more information. Contact your Regional Scientific Marketing Manager for further information.

John Fahey
Director of DP Marketing

Release Date: August 16, 1967
Distribution: All Areas

P67-85

Mathematical Programming Systems: Linear Programming is a Mathematical Programming technique for determining the optimum solution to a system of linear inequalities. This solution may be an optimum allocation of resources (capital, raw materials, manpower, etc.) to specified activities (investments, products, jobs) to obtain a particular objective (minimum expense, maximum profit) when there are alternate uses for these resources. Linear programming plays an important role in such areas as materials allocation, ingredient blending, (feed, flour, gasoline, etc.), production scheduling, distribution, and shipping. (360A-CO-14X)

Use: This programming system operates under control of the IBM Operating System/360. It consists of a number of routines called procedures, stored on the Program Library Residence device of Operating System/360. Only those procedures currently being executed are brought into main storage. The particular procedures to be executed are under the supervision of a control program prepared by the user. This control program is composed of statements which specify to the system the desired procedures to be executed. The sequence of these statements defines a solution strategy for solving a particular linear programming problem.

Features: The system utilizes the Revised Simplex Method (product form of inverse) with bounded variables and range constraints ... a highly efficient inversion technique using a triangularization method permits inversions to be made frequently, thus increasing the speed of succeeding iterations and maintaining a high degree of accuracy ... a multiple pricing method, adjusted for problem size and amount of available storage, reduces the amount of file processing and increases solution speed ... dynamic storage allocation provides for maximum utilization of available System/360 components ... maximum problem size is 4,095 rows ... conditional control statements permit alternate solution strategies to be implemented depending upon the conditions which arise during solution ... interrupt facilities provide the means for pre-planning alternate strategies in the event of off-normal conditions ... simultaneous parametric programming on both the righthand side and objective function may be utilized ... parametric programming on matrix rows or columns ... modular design makes it easy to add, modify, replace or delete functions as new requirements develop ... provision for converting input data from the 7040/44, 1620 - 1311, and 1400 - 1311 Linear Programming Systems is provided ... FORTRAN interface allows the user to implement procedures in FORTRAN and integrate them under control of MPS/360.

Programming Systems: This program is written in the OS/360 Assembler Language. It uses the BSAM and EXCP Data Access Methods of OS/360.

Machine Configuration: MPS/360 requires a S/360 with at least 65,536 bytes, the Standard and Decimal instruction sets, the Floating Point option, and, if the system output is a printer, it must have 132 print positions (a minimum of 44K bytes must be available for MPS/360 program and data storage). This version of MPS/360 support the 2400 Series Magnetic Tape Units Models 1, 2, and 3 and the 2311 Disk Storage Drive, and the 2301 Drum Storage Device.

The problem size (number of rows) which MPS/360 solves is directly dependent upon the size of memory available for data. The total amount of core storage used by MPS/360 is divided into two parts, program storage and data storage. The size of the MPS/360 program is approximately 29,800 bytes with a slight variation because of the number and type of I/O devices used to solve a given problem. The amount of storage available for data varies depending on S/360 CPU size ... size of resident OS/360 ... in a multi-task operating system, the size of core currently being used by other tasks ... the user-specified amount of data core available to MPS/360 for the current run.

The design of MPS/360 allows the user to solve problems much larger than the designed norm, but with a reduction of efficiency. This conscious design goal of the system allows the user to solve "in house" those few problems which exceed his normal requirements. However, it is recommended that the System/360 CPU size be selected using the designed norm problem size rather than the maximum problem size.

The number of data storage bytes available to MPS/360 may be obtained by subtracting from the S/360 CPU size, the size of resident OS/360; amount of core, if any, being currently used by other tasks; and 29,800 (approximate program size of MPS/360).

Figure 1 represents the maximum and the designed norm problem size which may be solved with the indicated number of data bytes. The Application Description Manual provides the equations necessary to evaluate the maximum problem for a given number of data bytes. MPS/360 requires a minimum number of utility files for the permanent and temporary storage of data. However, if available and specified by the user, the system will utilize a set of optional files to provide additional flexibility or more efficient problem solution. A file is a collection of related data stored and retrieved in a sequential fashion. A file may be stored on a part of a direct access device (2311) or a single reel of tape. Figure 2 contains the files required by MPS/360.

Note the system input, output, punch and system residence file have been excluded from this table. Figure 3 contains the optional files which if present will be utilized by MPS/360.

FIGURE 2

File Name	Description
SYSMLCP[1]	Contains the machine language control produced by the compiler
MATRIX1[3]	Contains, in internal form, the LP matrix
ETA1[2]	Contains, in internal form, the product form of the inverse
SCRATCH1[3]	Used for temporary data storage
SCRATCH2[3]	Used for temporary data storage
PROBFILE[2]	Contains a machine independent representation of the LP model

FIGURE 3

File Name	Description
OLDPFILE[2]	Contains a machine independent representation of a problem which is to be REVISEd or COPYed
MATRIX2-4[3]	Up to four devices may be specified for the storage of the LP model (they should be on separate channels)
ETA2-4[2]	Up to four devices may be specified for the storage of the product form of the inverse (they should be on separate channels)
MPSCRAT[1]	Used by the post-optimal procedures when only 4 work regions (minimum) have been SETUP
SYSABS	A high-speed printer which may be used to monitor the LP solution

(1) - Must be a direct access device
(2) - If 2400 series tape unit, it must be 9-track
(3) - If 2400 series tape unit and 7-track, it must have Data Convert feature

Basic Program Material:

Publications* -- Application Directory ... Control Language Users Manual (H20-0290-1) ... Linear Programming Users Manual (H20-0291-1) and TNL (N20-1031) ... READCOMM Program Reference Manual (H20-0372).

Machine Readable** -- The relocatable load modules, message descriptions and sample problem deck may be obtained on one 9-track magnetic tape (either 800 bpi or 1600 bpi) or one 7-track magnetic tape (800 cpi) (Data Conversion feature required) or one 1316 Disk Pack. Each of these volumes will also contain the optional source card images.

Optional Program Material:

Machine Readable** -- One 9-track magnetic tape (either 800 bpi or 1600 bpi) containing program flowcharts and one 9-track DTR (either 800 bpi or 1600 bpi) containing flowchart print program.

Ordering Procedure: See DP Sales Activity section of the Branch Office Manual.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the distribution medium is not indicated on the back of the program order card, 9-track at 800 bpi will be forwarded.

Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form); disk packs must be forwarded to PID with the program order card.

DTRs will be provided by PID; no tape submittal is required.

Reference Material: "Introduction to Linear Programming" (E20-8171) ... Application Manuals -- "Aluminum Alloy Blending" (E20-0127), "Electric Arc Furnace Steelmaking" (E20-0147), "Feed Manufacturing" (E20-0148), "Ice Cream Blending" (E20-0156), "Blast Furnace Burdening" (E20-0160), "Cotton Blending" (E20-0164), "Gasoline Blending" (E20-0168), Application Description Manual (H20-0136-1 with TNL N20-1030), and Systems Manual (Y20-0065).

For further information please contact your Regional Manager of Scientific Marketing.

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated material may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the later, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments (or Regions) as sources of information or for manuals etc. should be understood to mean the comparable WT Department (or corresponding organizational level).

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] References made to Engineering Change requirements should be verified with the local CE office. Although E/C requirements are identical for WT and IBM, availability and shipping dates will differ. NO PRODUCTION COMMITMENTS FOR PROGRAMS WITH E/C LEVEL REQUIREMENTS SHOULD BE MADE TO CUSTOMERS PRIOR TO VERIFICATION WITH LOCAL CE MANAGER OF EC AVAILABILITY.

FIGURE 1

Bytes Rows	17,300	82,500	213,000	475,000	992,000
Maximum	305	2,120	4,095	4,095	4,095
Designed Norm	200	200-700	700 - 1600	1600 - 3500	4,095

"Designed Norm" is the problem size MPS/360 was designed to solve normally on the specified number of data bytes.

SYSTEM/360 OPERATING SYSTEM

OS/360 FORTRAN H Version II

In our continuing effort to respond to our customers' needs, an improved version of OS/360 FORTRAN H will be available April 30, 1968. OS/360 FORTRAN H Version II will include these additional functions and improvements:

Support of Direct Access Statements

The Version II user can read and write fixed length records from or to direct access devices in random order.

Increase Capacity

With improved format and handling of internal tables, Version II requires 18K bytes of internal table space for every 100 source cards instead of 35K bytes. A source program of about 600 statements (cards) can be compiled on 200K bytes of main storage.

An Additional Debugging Facility, XREF

This user controlled option aids debugging by furnishing two additional types of information:

1. A listing of each source symbol and the internal sequence number(s) of the source statement(s) where the symbol is referenced.

2. A listing of each source label, its associated internal sequence number, and the internal sequence number(s) of all the source statement(s) that reference the label.

With this new facility, the user can easily correct or modify his FORTRAN program using the cross-reference listing of the symbols and labels.

An Improved Storage Map

Produced to give additional information about each symbol appearing in the source program. In addition to what is already produced by Version I, there is such information as to whether the symbol appeared on the left or right of an equal sign or both, also as to whether the symbol was used as an argument.

An 'S' in the map means that the symbol was stored into. Therefore its value has changed or it was initialized. This includes arithmetic, DO, and assignment statements.

An 'F' in the map means the symbol was fetched in an arithmetic statement. The symbol in the arithmetic statement appeared on the right of an equal sign.

An 'A' in the map means the symbol was used as an argument in any of the following statements: CALL, FUNCTION CALL, and I/O.

If the symbol is never used, an N. R. (Not referenced) will appear in the address portion of the map for the symbol.

A map is produced of each COMMON BLOCK and the name and location of each symbol within the COMMON BLOCK and also the name and location of any symbols EQUIVALENCED into the COMMON BLOCK.

Restrictions Eliminated

The restriction of 25 call-by-name arguments has been removed. The maximum number of call-by-name arguments is variable and governed by the total number of all arguments contained in the program.

The restrictions (P67-3) requiring dimension infor-

mation to occur before certain uses of EQUIVALENCE statements have been removed. Version II fully complies with USA FORTRAN.

Compile Time Reduced

Based on a test group of 15 programs which have been run against the released FORTRAN H and VERSION II: OPT=0 decreases compile time from 26% to 46% with an average of 31% over the 15 programs. OPT=2 decreases compile time from 38% to 47% with an average of 40% over the 15 programs. These compile percents are based upon compile step time less scheduler time. The figures were obtained from runs on a Model 65I under the OS/360 Release 11/12 PCP using an IBM 2301 drum as the system residence. The compiler options used for the above timings were SOURCE, LOAD, NODECK, BCD, NOLIST, NOMAP, NOEDIT, NOID, NOXREF. Systems input and output were on tape. There is no appreciable improvement in object execution time between Version I and Version II.

Compile time overhead reduced by eliminating the '=' sign from the control section identification name of the object module. The entry point is now the same as the load point in the object module; therefore, only one ESD card is required for both the identification and the entry name. A discussion of this change will appear in the IBM Installation Newsletter 67-17, August 25.

Additional Information for Planning

The component size of FORTRAN H Version II in tracks on the 2311 as follows:

4 tracks on SYS 1. PROCLIB
150 tracks on SYS 1. MODLIB
7 tracks on SYS 1. SAMPLIB

OS/360 Rollout/Rollin

This MVT facility will be available July 31, 1968.

OS/360 Sort/Merge

An extended capability of the OS/360 Sort/Merge program, which will allow sorting and merging up to 64 control data fields instead of the 12 fields presently supported, will be available February 15, 1968.

John Fahey
Director of DP Marketing

Release Date: August 21, 1967
Distribution: All Areas

[A]   IBM System/360 Wholesale IMPACT
       Program Library

Version 2, Modification Level 0 may be ordered
(360A-DW-05X); shipments will begin the week
ending September 1.

Description

CONTENTS
System/360 Wholesale IMPACT Program Library (360A-DW-05X) ... Version 2 may be ordered. (A)
TEST/360 Control Card Edit and Analysis Program (360A-SE-25X) ... correction. (B)
Published by DP Sales Publishing Services, WTHQ

Version 2 enlarges the scope of the Wholesale
IMPACT program library by adding to it a group of macro routines designed to
perform a number of important functions in programs produced by the Wholesale
IMPACT user.

These macro routines are:

DBV 1	Distribution-by-Value, Pass 1
DBV 2	Distribution-by-Value, Pass 2
FCST	Forecast
LBTA	Lead Time Variability and Time to Beta Power
MAXA	Maximum Available
OPPP	Order Point and Peek Point
EOQ	Economic Order Quantity
SRBI	Smooth and Rotate Base Index

Ordering Procedure
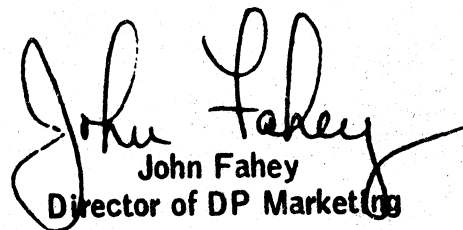
Current users will receive a prepunched program order card and a letter announcing
the availability of the new version. The letter instructs the users to order the new
version through the branch office. Current users must use this prepunched program
order card to order the new version.

For complete details see the back of this letter.

For further information contact your Distribution Industry Marketing Representative.

[B]   TEST/360 Control Card Edit and Analysis Program (P67-84)

Correct the form number for the Program Reference Manual listed on the back of P67-
84 under Basic Program Material to read Y20-0116 not X20-0116.

John Fahey
Director of DP Marketing

Release Date: August 21, 1967

Distribution: All Areas

P67-87

Wholesale IMPACT Program Library: This IMPACT Program Library offers System/ 360 users the opportunity to use the IMPACT system of inventory management now in wide use among 1400-1311 systems users (1401/1440/1460). (360A-DW-05X)

Description: The IBM IMPACT (Inventory Management Program and Control Techniques) system of scientific inventory management provides the warehouse distributor (or any organization with the same inventory control characteristics) with the information of "when" and "how much" to buy for each inventory item controlled by the system. It does this through the means of probability science in conjunction with the many factors influencing the distributor's inventory control decisions. Factors considered include: lead time, lead time variability, forecast of demand, forecast error, service desired, inventory carrying costs, purchasing/receiving costs, discount structures, minimums, maximums, shelf lives and pack sizes. The "when" and "how much" answers find the most efficient balance between the cost of carrying inventory, cost of purchasing and receiving, discounts realized, and customer service requirements. The System/360 IMPACT includes the IBM System/360 IMPACT Program Library and a number of IBM and customer education classes and manuals.

The System/360 Wholesale IMPACT Program Library (with associated education classes and written material) enables the distributor who has an IBM System/360 Data Processing System (Model 30 or greater) to successfully implement an IMPACT inventory management system with minimum effort and expense. Programs and Macro Routines are included that perform in the following functional areas: editing, file initialization, estimating, forecasting, preparation of distribution by value reports, and the control of independent and joint replenishment ordering.

Features: The System/360 Program Library performs the same functions as the existing 1400-1311 Program Libraries. They are: edit all input for format ... screen historical demands for promotion ... determine the forecast model (horizontal, trend, horizontal-seasonal, or trend-seasonal) ... determine the ordering strategy to be used and calculate order quantity or order frequency as appropriate for the strategy selected ... calculate for each item the safety factor required for a prescribed level of customer service ... calculate initializing values required for forecast and order models selected ... estimate, in advance, results to be expected from applying the rules and values developed ... determine when to order items and item groups to meet service objectives after the system is operational ... calculate the product mix to be ordered within an item group that will meet both service objectives and limitations on total size of order.

In addition, the System/360 Program Library has included within it a set of macro routines which assist the user in the preparation of distribution-by-value reports and in the creation of his operating programs, particularly in the area of forecasting and order point calculation.

These macro routines are:

DBV 1	Distribution-By-Value, Pass 1
DBV 2	Distribution-By-Value, Pass 2
FCST	Forecast
LBTA	Lead Time Variability and Time to Beta Power
MAXA	Maximum Available
OPPP	Order Point and Peek Point
EOQ	Economic Order Quantity
SRBI	Smooth and Rotate Base Index

In addition, the System/360 Programs provide increased flexibility in the type of input/output devices used.

Both input and output of main data flow in all programs may be by disk or tape. An additional card-to-input file and output file-to-card option are available and can be specified at run time. Either a 1442 or 2540 Card Read Punch and a 1443 and 1403 Printer may be specified by the user.

For maximum compatibility with IMPACT Systems developed by present users, all input and output formats are identical to those of the 1400-1311 Program Libraries.

Use: The Program Library includes both initialization programs and operating programs and macro routines. Initializing programs are designed to be used once to set up an IMPACT System, then periodically (at least once a year) or , as required, to meet changing conditions. A complete set of programs is provided to perform necessary initializing functions. Operating programs are used in a day-to-day control of the IMPACT System (forecasting and ordering). Macro routines are provided to assist the user in the preparation of programs to perform those functions. Library programs are provided to control the ordering of both independent and joint vendors.

Customer Responsibilities: Because requirements vary widely, the user writes his own programs to perform record keeping, forecasting, reviewing (if he elects to use an order point or peek point approach), ordering follow-up (preparing purchase order, status listings, etc.), and linkage between his programs and IMPACT library programs. To assist the user in developing his own programs with minimum effort, the IMPACT package provides macro routines for use in the user's forecasting and reviewing programs.

Programming Systems: Programs in the System/360 Wholesale IMPACT Library are written in Assembler language and the macro routines are written in Basic Macro definition language for use with Assembler language programs. Both operate under control of BOS/360, DOS/360, or OS/360.

Minimum System Requirements:

For use with BOS/360 or DOS/360 -- A 16K System/360 Model D30 with Decimal Arithmetic, 1442 or 2540 Card Read Punch, 1443 or 1403 Printer, and either two 2311 Disk Drives or one 2311 and two magnetic tape drives.

For use with OS/360 -- The OS/360 Wholesale IMPACT Program Library requires the Decimal Arithmetic option. With conservative blocking factors, the minimum main storage requirement does not exceed 18K bytes. In addition to the standard system residence, space is required in auxiliary storage for -- up to

three input data sets ... two output data sets ... plus print output ... and one or two intermediate data sets ... requiring an additional DASD or two magnetic tape drives.

Basic Program Material:

Publications* -- Application Directory ... Application Description (H20-0275-2) ... User's Manual (H20-0255-1) ... Operator's Manual (H20-0256-1) ... System Manual.

Machine Readable** -- Source programs and sample problem decks are available on one 9-track tape (either at 800 or 1600 bpi) or one 7-track tape (800 cpi, Data Conversion feature required) or one 1316 Disk Pack.

Ordering Procedures: See the Branch Office Manual, DP Sales Activity section.

*If only the form numbered manuals are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID.

**When ordering, if the distribution medium is not specified on the back of the program order card, 9-track tape at 800 bpi will be forwarded.

Magnetic tapes (2400') may be forwarded or ordered (the order card should accompany the tape order forms); disk packs must be forwarded to PID with the program order card.

Reference Material: "Introduction to IBM Wholesale IMPACT" (E20-0278) ... "Wholesale IMPACT-Basic Principles Manual" (E20-8105) ... "Wholesale IMPACT-Advanced Principles and Implementation Reference Manual" (E20-0174).

For further information contact your Industry Marketing Distribution Representative.

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, where appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated materials may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the later, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department (PID) should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments (or Regions) as sources of information or for manuals etc. should be understood to mean the comparable WT Department (or corresponding organizational level).

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] References made to Engineering Change requirements should be verified with the local CE office. Although E/C requirements are identical for WT and IBM, availability and shipping dates will differ. NO PRODUCTION COMMITMENTS FOR PROGRAMS WITH E/C LEVEL DEPENDENTS SHOULD BE MADE TO CUSTOMERS PRIOR TO VERIFICATION WITH LOCAL CE MANAGER OF EC AVAILABILITY.

67.88

Operating System/360 MFT-II

Multiprogramming with a Fixed Number of Tasks, Version II

It is the intent of the IBM Corporation to develop a significantly improved version of Operation System/360 programming support for Multiprogramming with a Fixed Number of Tasks. This programming support will be designated OS/360 MFT-II and will completely replace OS/360 MFT currently in use. Jobs that run in the existing MFT will continue to run in an MFT-II system, space permitting. Resident core size requirement for the minimum MFT-II Control Program will be 30K. MFT-II will support the 128K and larger user of OS/360.

MFT-II offers these new features:

- Up to 15 independent jobs may run concurrently.
- Independent partition scheduling (no WAITR, no SHIFT).
- Partitions can be as small as 8K in size.
- Partition sizes and definitions can be changed after initialization.
- Up to three job classes (see description below) per partition.
- Priority scheduling within each job class.
- 26K or 44K Scheduler.
- Input Stream can reside on DASD (Disk SYSIN).
- Up to three System Input Readers.
- Up to 36 System Output Writers.
- Reader and Writer operations are overlapped.
- System Restart capabilities.

Partition Job Class Facility
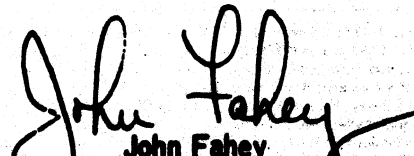
The partition job class facility allows the user to specify a particular partition or group of partitions that will be used to execute certain jobs. The user determines in which partition(s) a job may be executed by using the new CLASS parameter on the JOB card.

Judicious use of the job class feature will facilitate effective use of all system resources. It will be possible to schedule jobs so that concurrently executing jobs are complementary in nature, rather than conflicting. An example is one partition executing high compute, low I/O time jobs, with another partition that is executing low compute, high I/O time jobs. Another advantage of job class is that those jobs requiring specific I/O devices, such as 2250 terminals, can be assigned to the same class and continuously use these devices.

Additional information is planned to be available by the end of 1967.

This information represents the technical intent of IBM with respect to this programming product. It is possible that the objectives will not be met. The program is subject to revision or withdrawal and no commitment or warranty is expressed or implied.

Guidelines for using the Statement of Intent appear on the reverse side.

John Fahey
Director of DP Marketing

Statement of Intent Guidelines

You must insure that:

1. In any discussions with customers or prospects on intent information, the IBM representative makes clear to the customer that intent information represents only technical objectives and does not constitute any announcement of a programming system.

2. All proposals or installation planning discussions with customers or prospects on intent information must be documented to the customer. The following disclaimer must appear in this or any other documentation on intent information:

   "This information represents the technical intent of IBM with respect to this programming product. It is possible that the objectives will not be met. The program is subject to revision or withdrawal, and no commitment or warranty is expressed or implied."

   The proposal section containing the Statement of Intent must be entitled "Statement of Intent".

   The description of the Statement of Intent which precedes the disclaimer must contain no omissions or rephrasing of the information contained in the DPD HQ Statement of Intent release that could result in misrepresentation to the customer.

   The following sentence should be included after the disclaimer: "It should be clear that this Statement of Intent is not a Programming Announcement and that a Programming Announcement may or may not be forthcoming."

3. Orders secured from proposals in which intent information appears must contain installation plans not dependent upon the technical objectives or target schedules embodied in a Statement of Intent.

4. Installations having an interest in and probable use for the intent support must have that fact documented in the Installation Information System. The Program Planning form should be used to record the index numbers of the Statement of Intent (obtained from monthly IBM Program Support Master List). The required date for firm specifications should be entered in the Test Date column and the required availability date in the Install Date column.

OS/360 AND DOS/360 - 2740 MODEL 2   [A]

Currently available support for the 2740 Communication Terminal, Model 2 under DOS/360 BTAM, DOS/360 QTAM, OS/360 BTAM, and OS/360 QTAM is compatible with the new 2740 Model 2.

Additional support is required for the 2740 Model 2 when both Buffer Receive (#1499) and Record Checking (#6114) features are installed. Availability for the support is:

DOS/360 BTAM, DOS/360 QTAM   July 15, 1968
OS/360 BTAM, OS/360 QTAM   Second half 1968

Publications

IBM System/360 Disk Operating System: Basic Telecommunication Access Method, C30-5001-4 ... QTAM Message Control Program -- Specifications for a Future Version, C30-5004-0. IBM System/360 Operating System: Basic Telecommunication Access Method, C30-2004 ... QTAM Message Control Program -- Specifications for a Future Version, C30-2005-0.

COBOL LANGUAGE CONVERSION PROGRAM FOR 1401   [B]

The COBOL Language Conversion Program for the 1401, 1401-CB-701, Version 1, Modification Level 6 is being distributed to current users.

Submittal of a 2400 foot reel of magnetic tape is no longer necessary when ordering the basic program material for this program. Effective now PID will supply the basic machine readable material on a DTR; no tape submittal is required. A 2400 foot reel of magnetic tape is still required to obtain the optional program material.

Basic Program Material

SRL Publication(s) -- IBM System/360 Transition Aids: COBOL Language Conversion Program for the IBM 1401 C28-6559-2.

Documentation -- Program Material List.

Machine Readable -- The LCP Object Decks are available on a 7-track DTR (556 cpi).

Optional Program Material

Machine Readable -- The LCP Source Decks are available on a 7-track magnetic tape (556 cpi).

Ordering Procedure

See DP Sales Activity Section of the Branch Office Manual. If only the publication is required, or if additional copies of the publication are required, order them from the IBM Distribution Center, Mechanicsburg -- not from PID. Magnetic tapes (2400') may be forwarded to PID or ordered. (The order card should accompany the tape order form.)

DOS/360   [C]

Clarification to P67-80:

Reference to full device support for the IBM 2314 does not include the File Scan and Record Overflow features.

The index sequential performance options described for the IBM 2311 and 2314 also apply to the 2321.

The TNL for DOS/360 QTAM Message Control Program should be N30-5017 instead of N30-5014.

SYSTEM/360 PROJECT CONTROL SYSTEM   [D]

Change the minimum machine configuration on P360A.7 in the sales manual from 16K to 32K as stated in P66-100.

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS"

John Fahey
Director of DP Marketing

Release Date: August 23, 1967
Distribution: All Areas

1800 FORTRAN UNFORMATTED I/O CAPABILITY (PAPER TAPE)   (A)

Version 1, modification level 1 of the 1800 FORTRAN Paper Tape Compiler (1800-FO-008) and the Paper Tape Subroutine Library (1800-LM-004) programs are being distributed to current users.

These changes, which support the capability of magnetic tape unformatted input/output in the FORTRAN language, enable users to perform read and write operations to the magnetic tape in an unedited format. The compiler recognizes and compiles these statements, and the library allows the user to execute the programs. Results are much faster I/O in many cases where intermediate data must be saved and restored at a later time. No conversions are necessary since core image format is written on the magnetic tapes. This implementation fulfills the requirements for a Basic FORTRAN IV Compiler as defined by USA Standard Basic FORTRAN, X3. 10-1966.

There are no changes in the operation of the FORTRAN compiler. The compiler allows the appearance of the unformatted input and output statements in a source program.

The unformatted I/O subroutines are included in the Subroutine Library and are used like any other subroutine presently in the library. Formatted magnetic tape records presently being used will no longer be valid with these changes. An additional header word is now present on formatted records which make them incompatible with the old method. These subroutines are loaded utilizing the Relocating Loader in the 1800 Keyset Utilities (1800-UT-002).

Core Storage Requirements

When unformatted I/O is used, core loads will increase in size:

    Multiple Device Magnetic Tape -- by approximately 500 words
    Single Device Magnetic Tape -- by approximately 400 words

Minimum System Configuration

A 4,096-word 1800 System Processor-Controller ... 1816 Printer-Keyboard or 1053 Printer or 1443 Printer ... 1134 Paper Tape Reader and 1055 Paper Tape Punch.

If it is desirable to use this new facility, it will be necessary to have 2401/2402 Magnetic Tape Units Models 1, 2, or 3.

<div style="border:1px solid;">

CONTENTS

1800 FORTRAN Unformatted I/O Capability (Paper Tape) ... (1800-LM-004 and 1800-FO-008) ... Version 1 modification level 1 being distributed to current users. (A)

1400 Autocoder to COBOL Conversion Aid Program (ACCAP) ... (360A-SE-19X) ... optional program material available in November. (B)

OS/360 - Release 12 ... correction. (C)

Published by DP Sales Publishing Services, WTHQ

</div>

IBM 1400 AUTOCODER TO COBOL CONVERSION AID PROGRAM (ACCAP)   (B)

The optional program material will be available in November 1967. It will consist of a Systems Manual and source decks. Refer to P67-70 and Sales Manual page P 360A.27 for further information.

OS/360 - RELEASE 12   (C)

PTF Distribution on page 2 of P67-81 should have stated: Automatic distribution of all significant PTFs will be made ... etc.

John Fahey
Director of DP Marketing

Attachments [7]: P 9, P 360C.1, P 360C.3, P 360C.5, P 360C.6.1, P 360C.7, P 360M.5.

Release Date: August 28, 1967

Distribution: All Areas

IBI

IBM System/360 Model 20 Wholesale IMPACT

The Model 20 version of the System/360 Wholesale IMPACT Program Library will be available 1Q 69. It is identical to the System/360 Wholesale IMPACT Program Library in terms of scope, names of programs, and input/output format and content. Note: Only the operating programs and routines are provided for on the Model 20. Initialization must be accomplished on a Model 30 using the System/360 Wholesale Program Library (360A-DW-05X).

Special Sales Information: Education -- two courses are available.

1. An outline for a two-day executive class designed to demonstrate basic principles of inventory management and methods of implementing these techniques with IMPACT is available from the IBM Distribution Center in Mechanicsburg (R20-0050-1).

2. A ten-day implementation class for people responsible for the implementation and continuing operation of an IMPACT System. (This class is conducted by Distribution Industry Education at selected locations.)

The Consolidated Industry Education schedule includes details on the implementation class.

For complete details see the attached sales manual page. For further information contact your Industry Marketing - Distribution Representative.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS".

Attachments [7]: P 7, P 11, P 360A.13, P 360A.15, P 360A.17, P 360A.27, and P 360A.29

Release Date: August 30, 1967

Distribution: All Areas

1130/2250 Graphic Subroutine Package

The 1130/2250 Graphic Subroutine Package (GSP), which will
be available August 1968, provides the 1130 FORTRAN pro-
grammer with the capability of using the IBM 2250 Model 4 as
an input/output unit under the 1130 Disk Monitor System, Version
2. The GSP may also be used by the Assembler Language programmer.

Although the programmer is not required to utilize the total Graphic Subroutine Package, it is anticipated
that an effective graphic application will require 16K words of 1130 core storage.

The facilities GSP provides in the form of FORTRAN or Assembler Language CALLS are:

- Image Generation

    Routines which generate basic display image elements such as points, lines, and characters, and
    perform image truncation and scaling according to user specification.

- Image Management

    A capability which allows groups of image elements (called entities) to be referenced by name. Ex-
    amples are display generation (display/not display), light-pen control (detect/no detect) and modi-
    fication (replace, delete, extend).

- Attention Handling

    Routines which allow the user to specify which attentions are to be handled and to request that at-
    tention data be made available for use by application routines.

- Operator-Program Communication Subroutines

    Character Input –

    Routines which collect data from the alphameric keyboard and construct messages. Cursor func-
    tions are included in this facility.

    Light Pen Tracking –

    Two functions are provided: Linear tracking (Rubber-banding) and curved tracking (Sketching).
    In addition the capability to communicate the position of the light pen to the program is furnished.

- Input/Output Subroutines

    Routines which start the display, stop the display, and cause specified lights on the Program Func-
    tion Keyboard to be illuminated.

In addition to GSP, graphic extensions to the 1130 Assembler are furnished. These extensions allow full
utilization of the 1130-2250 system in Assembler Language, and together with the use of GSP in As-
sembler Language provide the user with considerable programming flexibility.

John Fahey
Director of DP Marketing

Release Date: September 1, 1967

Distribution: All Areas

IBM 1130 AND SYSTEM/360 AUTOMATED CHEMISTRY PROGRAMS   (A)

Over the last several years, clinical laboratory tests have greatly increased both in type of tests offered and in number of tests performed. This places greater responsibility on the laboratory -- responsibility not only for the performance of more work but for improved reliability.

Continuous process analyzing systems are widely used in clinical labs. They greatly facilitate efficient, reliable, and timely results from specimen analysis. However, a great deal of clerical work is still required to obtain converted, and therefore, useful final data. To enable the hospital to prepare required reports, IBM is announcing both the 1130 and System/360 Automated Chemistry Programs. These programs are used in conjunction with the output data of the 1080 Data Acquisition System. The System/360 program will be available 2Q 1968, and the 1130 program, 3Q 1968. Detailed specifications will be available for the System/360 program in October 1967, and for the 1130 program in November 1967.

From these programs your hospital will be able to identify specimens automatically, read results in raw form, calculate adjusted results, as well as provide quality control reporting.

Description

The purpose of these programs is to process on either the 1130 or System/360 the punched card output of the IBM 1080 Data Acquisition System located in clinical laboratories.

Special Sales Information

The output from these programs can be combined with the user-provided basic patient data and printed by simple user-written routines to serve as a Patient Summary Sheet for tests processed by the Automated Chemistry Programs.

See the back of this letter for more information. For further information contact the Medical Program Administrator, DPD HQ.

IBM SYSTEM/360 MODEL 20 TPS REPORT PROGRAM GENERATOR   (B)

Version 1, modification level 3 is being distributed to current users.

The new modification provides increased performance:

The processing time for updating matching files is greatly reduced, especially when the primary file is the update file and relatively few matching records are encountered. In certain affected cases the performance improvement may be as high as 18%.

A pre-scan has been added to the processor which eliminates the testing of the overflow and halt indicators except when they are used in the object program.

Program number is 360U-RG-148.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR "NOTE TO WORLD TRADE READERS"

Release Date: September 6, 1967
Distribution: All Areas

1130 and System/360 Automated Chemistry Programs:

These programs are for support of the IBM 1080 Data Acquisition System in the clinical laboratory.

Description: These programs will be able to process, on either an 1130 or System/360, the punched card output of the IBM 1080 Data Acquisition System.

Processing of 1080 Punched Card Output -- Establishes the calibration function from control standards ... checks the quality of the control standards used ... determines the standard deviation of the standards employed for quality control purposes ... computes the test result ... adjusts the test result for instrument drift that might have occurred ... adjusts the test result for interaction between specimens (high concentration followed by low concentration) ... compares test result with mean and standard deviation of cumulative data for all results for that test ... associates each test result with the proper specimen identification number.

Setting Up A Test Result File -- Sets up a file by specimen number, and tests results for each test ordered ... the data from this file can be transferred to and integrated with a Patient Master Record by user-written routines.

Print Out Of Quality Control Report -- Prepares a quality control report for review by the laboratory prior to release of test data for distribution to the ward or clinic ... the quality control report lists for each specimen processed: test result, dilution factor (if any), abnormal indication for 1 or 2 standard deviations, and specimen number.

Features: These programs encompass the following unique features that produce more reliable test results -- check reliability of control standards ... adjust for analyzer drift ... adjust for interaction of specimens with widely differing concentrations ... report quality control information ... flag abnormal test results for retesting of these specimens.

Special Sales Information: The output from these programs can be combined with the user-provided basic patient data and printed by simple user-written routines to serve as a Patient Summary Sheet for tests processed by the Automated Chemistry Programs.

Use: These programs are loaded into the library and called via job control cards ... environmental data are loaded and retained on disk via a maintenance program included with the Automated Chemistry Programs; this is a one time operation for a given operating environment ... 1080 card output can then be processed.

Customer Responsibilities: Providing basic patient data, associating patient number and specimen number ... setting up the 1080 by providing a description of which analyzer strip chart recorders are associated with which 1084, a description of the tests run on each 1084, test number and name, concentration of each calibration-standard, control standards used, and chemistry procedure used.

Programming Systems: These programs are written in FORTRAN and Assembler language. They are designed to operate under DOS on System/360, or under the 1130 Disk Monitor System.

Minimum System Requirements for System/360: A 2030E (32K) with Decimal Arithmetic (#3237), Floating Point Arithmetic (#4427), Selector Channel-First (#6960) ... 1052 Console Typewriter with appropriate attachments ... 1442 Card Read Punch Model N1 ... 1443 Printer Model N1 ... 2841 Storage Control Model 1 ... one 2311 Disk Storage Drive Model 1.

Minimum System Requirements for 1130: An 1131 Model 2B (8K) Central Processing Unit with Disk Storage Drive with 1132 Attachment (#3616), Expansion Adapter (#3854), 1442 Model 6 or 7 Attachment (#4454) ... 1442 Card Read Punch Model 6 ... 1132 Printer Model 1.

For further information contact the Medical Program Administrator, DPD HQ. (Detailed information will be announced for the System/360 program in October 1967 and the 1130 program in November 1967.)

IBM IBM World Trade Data Processing

STATEMENT OF INTENT

S T A T E M E N T O F I N T E N T

IBM 2250 Model 4/1130 Satellite Operation with Operating System/360

It is the intent of the IBM Corporation to provide Operating System/360 and 1130 Disk Monitor System, Version 2, programming support to facilitate operation of the 2250 Model 4/1130 system configuration as a satellite to System/360. This programming support will consist of services and facilities for exchange of program data and program control information between the 2250 Model 4/1130 and System/360 and will require the following:

1. S/360 Model 40, 50, 65, 67 (operating in 65 mode) or 75 with attached 2701 Data Adapter Unit equipped with SDA-II or a 2703 equipped with Binary Synchronous features.

2. OS/360 BTAM support, Point to Point, for the 1130 System operating in Binary Synchronous Mode of Telecommunications.

3. An 1131 CPU equipped with Synchronous Communication Adapter operating in Binary Synchronous Mode.

This information represents the technical intent of IBM with respect to this program. It is possible that the objective will not be met. The program is subject to revision or withdrawal and no commitment or warranty is expressed or implied.

Guidelines for using the Statement of Intent appear on the reverse side.

John Fahey
Director of DP Marketing

Statement of Intent Guidelines

You must insure that:

1. In any discussions with customers or prospects on intent information, the IBM representative makes clear to the customer that intent information represents only technical objectives and does not constitute any announcement of a programming system.

2. All proposals or installation planning discussions with customers or prospects on intent information must be documented to the customer. The following disclaimer must appear in this or any other documentation on intent information:

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IBM Project Control System/360 (PCS/360)

The Project Control System (360A-CP-06X) may
be ordered. Shipments will begin the week ending
September 15, 1967.

> **CONTENTS**
>
> Project Control System/360 (360A-
> CP-06X) ... an application pro-
> gram that may now be ordered.

Published by DP Sales Publishing Services, WTHQ

This program is input compatible with the Project Control System for the 1130.

For critical path networks, PCS/360 will process up to 5,000 activities, either in the
form of precedence lists or in ij/PERT/CPM notation. Extensive report preparation
capabilities are provided, including summarization of resource and cost information. PCS/
360 provides critical path capability for a broad range of DOS/360 users, irrespective
of industry.

Project Control System/360 requires two 2311 Disk Storage Drives, rather than one as
previously announced in P66-16 and P66-100. All customers affected by this change
should be notified immediately.

Reference Material

Application Description Manual (H20-0222-1) ... Systems Manual (availability and
number will be announced in a PRL).

Special Sales Information

An analysis of throughput requirements should be made for customers who plan to use
this program. Regional Scientific Marketing Managers may be contacted for data
pertinent to these evaluations.

Ordering Procedure

See the reverse side for ordering information and a description of the program material
available.

John Fahey
Director of DP Marketing

Release Date: August 31, 1967

Distribution: All Areas

Project Control System: This program has the same features as the 1130 Project Control System. However, the IBM Project Control System/360 can process networks more than twice as large as those processed by the 1130/PCS. (360A-CP-06X)

Project Control System/360 provides the advanced tools needed by management to fulfill its responsibilities in the planning, supervising and controlling of project-oriented work by providing extensive capability in the following operations or techniques: (1) Planning ... (2) Scheduling ... (3) Report Preparation. While it provides some capability for resource allocation and cost estimating, PCS/360 does not directly cover these techniques.

For critical path networks, PCS/360 will process 5,000 activities either in the form of precedence lists or in PERT/CPM notation. Its design permits a very simple approach to networking, but also offers many of the sophisticated features normally found only in programs designed for larger configurations.

Use: The major market for PCS/360 is the areas of government and industry concerned with construction or maintenance. The needs of this market determined the title and format of the field report and the format of the various input cards. However, intensive investigation has revealed that there are no essential differences among the needs of all critical path users. For this reason, PCS/360 can provide critical path capability for a broad range of DOS/360 users, regardless of industry.

Sample Applications are:

Manufacturing and Distribution Industries -- network techniques have been used to schedule construction operations, aerospace research and development projects, the use of mining equipment, crude petroleum manufacturing, natural gas operations, construction, repair and maintenance, pulp mill operations, paper and paperboard manufacturing, book preparation and printing and blast furnace maintenance.

Science Industries -- network techniques have been used to schedule applied research projects and computer program development.

Service Industries -- network techniques have been used to schedule power plant operations, bank clearing-house operations, dividend check distribution and insurance report preparation.

GEM Accounts -- network techniques have been used for internal management control as well as for contractor control, text production of biological products, experimentation with drugs, and university and college curricula and facilities usage.

Transportation Industry -- network techniques have been used to schedule freight forwarding operations, terminal and service facilities, and the repair and maintenance of equipment.

In addition, these project control techniques are extensively used for controlling the design and implementation of data processing systems in virtually all industries.

Features: 5,000 work items (or PERT/CPM activities) ... 12,500 precedence relationships ... each precedence relationship can be lagged ... the number of days in the work week can be specified for each item ... for in-progress work items, progress can be reported as a percent completion, or as a number of work days remaining ... scheduled and actual dates can be assigned to both the beginning and end of each work item ... arbitrary non-work days can be incorporated into the calendar ... basic resource scheduling and cost summarization capability is provided ... tabular and graphic reports are available ... card or disk master files may be used.

Customer, Responsibilities: Current users of critical path programs will have to prepare new data cards to use the IBM Project Control System/360. However, data cards for use by PCS/1130 are directly usable.

All users should learn the particular features of this system before attempting to use it for actual project control. New users will have to learn the fundamentals of the critical path techniques before they can prepare input.

Special Sales Information: An analysis of throughput requirements should be made for customers who plan to use this program. Regional Scientific Marketing Managers may be contacted for data pertinent to these evaluations.

Programming System: The program is written in a combination of FORTRAN and Assembler Language to operate under the Disk Operating System. While the program is designed to meet the needs of most users without modification, it is recognized that special individual requirements do arise. Therefore, the elements of the program written in FORTRAN are those that the user is most likely to modify to suit his application.

Minimum Machine Configuration: A 32K 2030 Processing Unit (Model E) with Floating Point (#4427), a 1052 Console, a card read/punch, a printer, and two 2311 Disk Storage Drives.

Basic Program Material:

Publications* -- Application Directory ... Program Description and Operations Manual (H20-0376-0).

Machine Readable** -- Relocatable object program modules and sample problem including sample job control statements are available on one 2400 foot reel of magnetic tape, either 9-track (800 or 1600 bpi), or 7-track (800 cpi, Data Conversion feature required) or on one 1316 Disk Pack.

Optional Program Material:

Machine Readable** -- Source statements are available on one 9-track (800 or 1600 bpi) DTR or one 7-track (800 cpi) DTR (Data Conversion feature required).

Ordering Procedure: See the DP Sales Activity section of the Branch Office Manual.

*If only the form numbered manual is required, order from the IBM Distribution Center, Mechanicsburg -- not PID.

**If the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

Magnetic Tapes (2400') may be forwarded or ordered (the order card should accompany the tape order form); disk packs must be forwarded to PID with the program order card.

DTRs for the optional program material will be provided by PID; no tape submittal is required.

Additional Program Support Material: Application Description (H20-0222-1) ... System Manual (availability and number will be announced in a Publication Release Letter).

Reference Material: Miller, R. W. "Schedule Cost and Profit Control with PERT," McGraw-Hill, New York, N. Y., 1963 ... Moder, J. J. and Phillips, C. R. "Project Management with CPM and PERT," Reinhold, New York, N. Y. 1964 ... O'Brien, J. J. "CPM in Construction Management," McGraw-Hill, New York, N.Y., 1965 ... Shaffer, L. R., Ritter, J. B. and Meyer, W. L., "The Critical Path Method," McGraw-Hill, New York, N. Y., 1965.

For further information contact your Regional Scientific Marketing Manager or your Industry Marketing Representative.

Note to World Trade Readers

This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

[1] All programs announced as available have been shipped to the appropriate WT Program Libraries. Programs and associated material may be ordered as indicated on pages 9013 through 9017, Programming Section, WT DP Sales Manual.

[2] Advance copies of the form numbered publications mentioned in the above either have been shipped (with additional copies available from the IBM Distribution Center, Mechanicsburg, Pennsylvania) or will be shipped when available. In the case of the later, availability will be announced in the Weekly DP Marketing Publications Release Letter.

[3] When a new version of a program is announced current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.

[4] If DTR distribution is indicated in the above, program distribution media may be different in your area based on local conditions.

[5] All references made to the Program Information Department [PID] should be understood to mean the appropriate WT Program Library.

[6] Any reference made to DPD Departments (or Regions) as sources of information or for manuals etc. should be understood to mean the comparable WT Department (or corresponding organizational level).

[7] Communications facilities or services may be required which are not offered in all WT countries. In case of any doubt as to the availability of suitable communications facilities, the country Teleprocessing Coordinator should be consulted.

[8] References made to Engineering Change requirements should be verified with the local CE office. Although E/C requirements are identical for WT and IBM, availability and shipping dates will differ. NO PRODUCTION COMMITMENTS FOR PROGRAMS WITH E/C LEVEL REQUIREMENTS SHOULD BE MADE TO CUSTOMERS PRIOR TO VERIFICATION WITH LOCAL CE MANAGER OF EC AVAILABILITY.

IBM System/360 Model 44 Programming System Disk Resident ALGOL Compiler

An ALGOL Compiler will be available from the World Trade Libraries on October 1, 1968. It is designed to run under the System/360 Model 44 Programming System. The Model 44 ALGOL written in 44 PS Assembler Language, compiler provides a powerful high-level language which may be used in many engineering and scientific fields. The implementation of recursive procedures provides a possible future aid in certain branches of mathematics.

The System/360 Model 44 ALGOL compiler is an additional component of the presently available System/360 Model 44 Programming System. Source programs written in a subset of the ALGOL 60 language can be compiled, linkage-edited, and executed under control of this programming system. ALGOL programs written for the S/360 Model 44 compiler can also be compiled with the System/360 OS ALGOL compiler and vice versa. Numerical results, however, can differ due to different rounding errors in the arithmetic and because the consequences of certain side effects are not defined for OS ALGOL.

Language Specifications: The subset of ALGOL 60 used by the compiler contains the ECMA and IFIP subsets. It is the same subset as used by the OS ALGOL compiler. The IFIP procedures are implemented for input and output.

Highlights: The compiler provides full syntax checking, optional optimization of indexed variables in statements following for clauses, and automatic timer interruption after a specified period of run time. Recursive procedures are fully implemented, simple errors are automatically corrected, and advantage is taken of the block structure of ALGOL to optimize the allocation of storage. A cross-reference listing can also be requested.

The compiler can generate codes for both long and short floating-point arithmetic. In either case, normalized or unnormalized addition and subtraction can be requested. Optional flow and value tracing at run time and a special symbolic run-time data-storage dump when a program check interruption occurs are also provided by the compiler. In addition, the optional checking of the subscripts of indexed variables is provided (unless indexed variable optimization has been provided).

Minimum Configuration: The compiler requires the following minimum machine configuration (compile and run time): A 2044 Central Processing Unit (with its console printer-keyboard and single disk) with 64 K bytes of core storage and the floating-point feature.
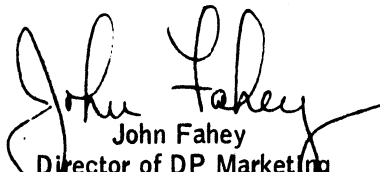
    One multiplexor channel or high-speed multiplexor channel.
    One of the necessary 44PS input listing devices.
    One of the necessary 44PS output punching devices.

Units Supported: The S/360 Model 44 ALGOL compiler provides support for all units supported by 44PS.

Publications: SRL manual, to be available soon after this announcement, describing language specifications, Form C19-0002 and entitled IBM System/360 Model 44 Programming System ALGOL Compiler, must be read in conjunction with IBM System/360 OS ALGOL Language, Form C28-6615 (already distributed and available from Mechanicsburg). Advance copies of C19-0002 will be distributed when available, and additional copies can be obtained from the Distribution Center, Mechanicsburg.†

Note: Customer usage plans for this program must be registered on the Program Planning Report. Model 44 ALGOL PPR Index Number is 54300.

† Actual availability will be announced in a
  forthcoming Weekly Publications Release Letter.

John Fahey
Director of DP Marketing
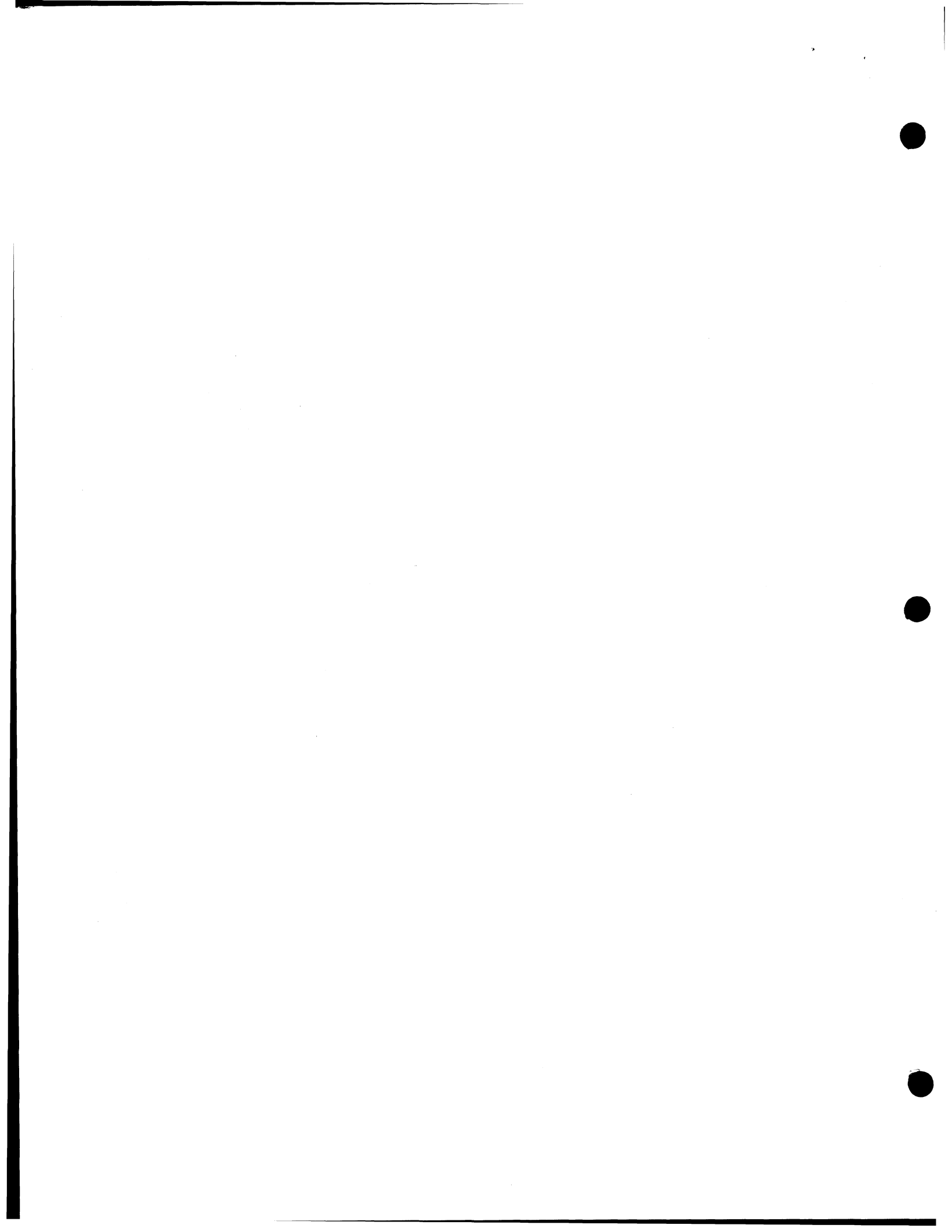
[A] System/360 Model 20

TPS Input/Output Macro Definitions for the 1419 Magnetic Character Readers, 360U-IO-152, is available.

These Macro Definitions provide the user with efficient and tested routines which, by means of macro instructions and interrupt routines, control and optimize 1419 input and printer output. They also provide linkage to I/O routines for card and tape devices.

The program consists of two macro definitions, DTFPD and DSENG, to be included in the macro library of the system tape. If the TPS I/O and Basic Monitor Macro Definitions are expanded by these two macro definitions, the TPS Assembler will generate routines for the 1419 as well as for card and tape devices when encountering macro instructions in the user's source program.

The functions performed by the 1419 Magnetic Character Reader are:
- Engaging and disengaging the MICR
- Document reading
- Document sorting
- Control of document input buffer
- Interrupt servicing
- Testing of field validity indicators and I/O error checking
- Optimized printer output

The user has to provide a routine for pocket selection, which is entered by the MICR routines under interrupt control.

Performance Data: See the SRL publication "IBM System/360 Model 20, Disk and Tape Programming Systems, Input/Output Control System for the IBM 1419 Magnetic Character Reader" (C33-6001-1).

Limitations: The program is not upwards compatible with System/360 Model 30 and higher models.

Documents in the 1419 will reject if user pocket selection routines exceed the time limits described in the performance section of the above mentioned SRL.

Document rejects may occur if any single user instruction exceeds 2.7 milliseconds. More time-consuming instructions must be split.

Document sorting must be based on fields read in the first 5.8 inches of the document.

Prerequisite: The System/360 Model 20 I/O and Basic Monitor Macro Definitions (360U-IO-151) must be contained in the macro library of the system tape and must be version 1, modification level 3 or higher level.

Minimum System and EC-Level Requirements: The minimum requirement for assembly of programs containing macro instructions for the TPS MICR I/O-routines is the configuration required by the TPS Assembler program.

The minimum configuration for execution of such programs depends on processing requirements. Required are:

A 2020 Processing Unit

  Model B2, if the object program is card-resident, or Model C2, if the object program is tape-resident.

  The EC-Level of the microprogram must be 12 103 or higher.

One card reading device (2501 Model A1 or A2, 2520 Model A1 or 2560 Model A1) for object program loading or for initial program loading of the tape-resident system.

A 1419 Magnetic Character Reader Model 1 or 31. The EC-Level must be 127384 (ECA 170) or higher.

Additional Support: The TPS MICR I/O-routines optimize throughput by providing the best balance between the MICR and a printer (1403 Model 2, 7, or N1, or 2203 Model A1).

The following special features of the 1419 MICR Model 1 or 31 are supported:

> **SEE REVERSE SIDE FOR "NOTE TO WORLD TRADE READERS"**

CONTENTS

— Published by DP Sales Publishing Services, WTD —

- Batch numbering
- Dash symbol transmission
- Endorser
- Program control for pocket lights
- Sort Mode 2
- 51 column sorting

The following 1403 special features are supported:

- Interchangeable Chain/Train Cartridge
- Universal Character Set
- Selective Tape Listing

The following special feature of the 2203 printer Model A1 is supported:

- 24 additional print positions

Basic Program Material:

Publication* -- IBM System/360 Model 20, Disk and Tape Programming Systems, Input/Output Control System for the IBM 1419 Magnetic Character Reader (C33-6001-1).

Documentation -- Program Material List and Attachment I.

Machine Readable** -- The macro definitions and sample program are available on one 9-track DTR (800 bpi or 1600 bpi). A bootstrap card is also supplied. The DTR contains a retrieval program which punches the program material into cards.

Ordering Procedure: See the DP Sales Activity section of the Branch Office Manual.

*If only the publication is required, order from the IBM Distribution Center, Mechanicsburg -- not from PID.

**If the distribution medium is not specified on the back of the program order card, 9-track at 800 bpi will be forwarded.

DTRs will be provided by PID; no tape submittal is required.

[B] 1800 FORTRAN Unformatted I/O Capability (Paper Tape)

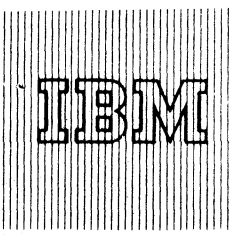Please correct the first paragraph under Minimum System Configuration on P67-90 to read:

A 4,096-word 1800 System Processor-Controller ...
1816 Printer-Keyboard or 1053 Printer or 1443 Printer
... 1054 Paper Tape Reader and 1055 Paper Tape Punch

John Fahey
Director of DP Marketing

Attachments [7]: P 5, P 11, P 360A.3, P 360A.5, P 360A.7, P 360A.9, and P 360A.31

Release Date: September 12, 1967

Distribution: All Areas

[A] IBM Data Acquisition Multiprogramming System (DAMPS)

DAMPS is a new program designed to support the System/360 Model 44 in on-line scientific applications. The system is particularly useful for real-time applications requiring quick response to multiple external processes. The program will be available 3Q 1968.

In addition to the devices supported by the S/360 Model 44 Programming System, DAMPS supports 32 levels of the Priority Interrupt Special Feature and the IBM 1827 Data Control Unit for interfacing directly with scientific applications such as wind tunnels, cyclotrons and analog computers. The system will support the assignment of program tasks to various priority levels. Foreground program tasks can be dynamically scheduled for execution while there are no active priority interrupt levels.

DAMPS user written applications are prepared with the System/360 Model 44 Programming System. The features of DAMPS appear as extensions to the System/360 Model 44 Programming System.

Reference Material:

Availability and form number of a System Description will be announced in a Publications Release Letter. Preliminary copies may be obtained from Scientific Marketing, DPD HQ.

See the reverse side for the text that will appear in the sales manual. For additional information contact Scientific Marketing, DPD HQ.

[B] IBM Catalog of Programs

The August issues of the IBM System/360 Catalog of Programs (C20-1619-3) and the IBM 1130 Computer System and 1800 Data Acquisition and Control System Catalog of Programs (C20-1630-2) are available from the IBM Distribution Center, Mechanicsburg.

The format of Contributed Programs has been changed to include search words, author's User Organization affiliation and membership code where appropriate. The introductions to the catalogs contain an example of the new Contributed Program format. The Contributed Programs will appear in the Keyword-in-Context (KWIC) Index by search words rather than title.

The Program Classification Codes have been expanded to provide a broader, more informative list of codes. The introductions to the catalogs contain the new expanded list of Program Classification Codes.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS"

Release Date: September 12, 1967

Distribution: All Areas

<u>Data Acquisition Multiprogramming System (DAMPS)</u>: DAMPS is designed to support the System/360 Model 44 in on-line scientific applications.

The system is particularly useful for real-time applications requiring quick response to multiple external processes. In addition to the devices supported by the System/360 Model 44 Programming Systems, DAMPS supports 32 levels of the Priority Interrupt Special Features and the IBM 1827 Data Control Unit for interfacing directly with scientific applications. The System/360 Model 44 Programming System processors are compatible with DAMPS and are used in preparation of application programs.

<u>Description</u>: DAMPS operates in conjunction with the Priority Interrupt Special Feature and the IBM 1827 Data Control Unit or other real-time interface. The system is designed to interface directly with an on-line, real-time, scientific application.

The system supports the assignment of program tasks to the various priority levels, to be scheduled as immediate response to external events. Foreground tasks may be dynamically scheduled for execution while there are no active priority interrupt levels. The posture of the system, with respect to priority interrupts, can be altered with special subroutines provided. Foreground tasks use supervisor capabilities compatible with the System/360 Model 44 Programming System, including FETCH and LOAD, while priority response routines are provided with special capabilities which support a broad range of processing at a priority level. DAMPS user written application programs are prepared with the System/360 Model 44 Programming System. The features of DAMPS appear as extensions to the System/360 Model 44 Programming System.

<u>Features</u>: Special routines can be associated with an immediate response to an external event through the Priority Interrupt Special Feature ... foreground processing can be easily scheduled during priority interrupt ... the user can dynamically adjust the programs used for responding to priority interrupts ... the capabilities associated with the System/360 Model 44 Programming System are available to the user for preparation and processing of real-time jobs ... a special, real-time channel scheduler is provided for channels dedicated to the processing of real-time data ... IBM 1827 Data Control Unit and tape subroutines are provided for use with the real-time channel scheduler ... the user, at his own discretion, can save and restore as little of the status of the computer at interrupt time as he deems necessary ... all the dynamic overlay capability available in the Model 44 Programming System is available to the real-time job.

<u>Special Sales Information</u>: DAMPS substantially reduces the programming effort required to implement real-time applications on the System /360 Model 44, by providing both the monitor framework for system operation and the operating system for system development. Because DAMPS is essentially an extension of the System/360 Model 44 Programming System, a high degree of compatibility is maintained with the latter.

<u>Use</u>: DAMPS is an operating system. All the processors of the System/360 Model 44 Programming System are available to prepare on-line, real-time, scientific application programs. The monitor structure to support real- time operation is also provided. The user is responsible for developing the application programs making use of these tools.

<u>Customer Responsibilities</u>: A thorough knowledge of the application ... a thorough knowledge of DAMPS ... any user modification of DAMPS ... installation, maintenance, and operation of all non-IBM equipment involved ... developing, testing, and operating application programs ... operation of the IBM hardware and systems ... programming any unsupported equipment.

<u>Programming Systems</u>: DAMPS is an extension of the System/360 Model 44 Programming System. The extensions were programmed in the assembler language of the system. Application programs can be developed using the FORTRAN and Assembly languages of the system, with the special features appearing as additions to these languages.

<u>Minimum System Requirements</u>: System/360 Model 2044G, Multiplexer Channel (#5248), High Speed Multiplexer Channel (#4598), Priority Interrupt Feature (#5625), Second Single Disk Storage Drive (#6415), one System Input Device (1442 Model N1, 2501 Model B1 or B2, 2520 Model B1, 2540 Model 1, 2401, 2402 Model 1 through 6, 2403 Model 1 through 6 or 2403 Model 1 through 3), one Output Listing Device (1403 Model 2, 3, 7, N1, 1443 Model N1 or any of the above-listed tape units), one Output Punching Device (1482 Model N2, 2520 Model B2 or B3, or any of the above-listed read punches, or any of the above-listed tape units), 1827 Data Control Unit, configured as required, or some other real-time interface if additional systems programming is contemplated.

<u>Program Support Material</u>: System Description "Data Acquisition Multiprogramming System (DAMPS), " availability and number will be announced in a PRL.

<u>Reference Material</u>: IBM System/360 Model 44 Programming System Concepts and Facilities (C28-6810) ... IBM System/360 Model 44 Programming System Assembler Language (C28-6811) ... IBM System/360 Model 44 FORTRAN IV Language (C28-6515) ... IBM System/360 Model 44 Programming System Guide to System Use (C28-6812). These manuals describe the system which DAMPS is an extension of and compatible with.

For further information contact your Regional Manager of Scientific Marketing.
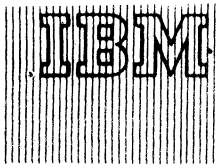
Numerical Control Processors

Program Announcement Letter P67-78 announced
the release of the IBM System/360 AUTOSPOT
and the AD-APT/AUTOSPOT Numerical Control
Processors. The following additional material is
now available:

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CONTENTS

Numerical Control Processors ... additional
    material available.

- Published by DP Sales Publishing Services, WTHQ
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1. S/360 AUTOSPOT Numerical Control Processor (360A-CN-08X):

   . S/360 AUTOSPOT System Manual (Y20-0119)*

2. S/360 AD-APT/AUTOSPOT Numerical Control Processor (360A-CN-09X):

   . S/360 AD-APT/AUTOSPOT System Manual (Y20-0118)*

   . S/360 AUTOSPOT System Manual (Y20-0119)*

   . Optional Program Material -- Machine Readable** - source programs
     and flowcharts on one 9-track 2400' reel of magnetic tape (800 or
     1600 bpi) or one 7-track 2400' reel of magnetic tape (800 cpi).

   *Order from Mechanicsburg.
  **If the distribution medium is not indicated on the back of the program order card,
    9-track at 800 bpi will be forwarded.

   Magnetic Tapes (2400') may be forwarded to (with the program order card) or ordered
   from PID (with the order card and tape order form).

The restriction on the use of General Conics as a drive surface in the S/360 AD-APT/
AUTOSPOT Processor (360A-CN-09X) will be lifted by November 30. Until that time,
this feature cannot be used as described in the AD-APT/AUTOSPOT Part Programming
Manual (H20-0375).

All customers affected by the above should be notified immediately.

For further information contact your Manufacturing Industry Marketing Representative.

John Fahey
Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS"

Release Date: September 15, 1967

Distribution: All Areas

IBM World Trade Data Processing

Program Announcements

IBM 1259 MAGNETIC CHARACTER READER
SYSTEM/360 MODEL 20   [A]

System/360 Model 20 MICR Input/Output Control Systems for the 1419 Magnetic Character Reader have been expanded to include the recently announced IBM 1259 Magnetic Character Reader. Availability will be July 1, 1968. The MICR (1259 and 1419) IOCS is part of the System/360 Model 20 Tape and Disk Input/Output Control System (1259 and 1419). The MICR IOCS provides the user with efficient and tested routines which by means of macro instructions and interrupt routines control and optimize Magnetic Character Reader input and printer output.

The MICR IOCS is utilized with user programs written in Model 20 assembler language and must be used in conjunction with the Model 20 Control and Service Programs. The MICR routines are part of the Model 20 Tape and Disk assembler macro libraries and may be used together with any other IOCS supported devices, e.g. tape, disk and punched card equipment.

Declarative macro statements specified by the user will generate the necessary coding required to control the following Magnetic Character Reader functions:

- Engaging and disengaging
- Document reading
- Interrupt servicing
- Control of a document input buffer
- Error checking
- Programmable pocket light and batch numbering control (1419 Optional features)
- Suspension of document feeding and reading to allow magnetic tape or disk operations

In addition support will be provided for:

- Optimized printer operations
- Selective tape listing features control (1403 only)

The user must provide a pocket selection routine that is entered under IOCS interrupt control. The user is provided a Get macro to retrieve document data from the input buffer. Document data is available sequentially to Get requests. Field error indications and pocket selection codes are associated with the corresponding document data.

User pocket selection and Get processing routines are executed asynchronously. Additional core storage may be specified in the document input buffer to facilitate inter-routine communication.

Performance

Available stacker select time is dependent upon options of the IOCS employed.

IOCS service time during stacker selection is approximately 5 milliseconds for the 1259.

1259 user time for stacker selection is approximately 19 milliseconds.

For the 1419 the options chosen will result in approximately 2 to 14 milliseconds available selection time. Approximately 4 milliseconds more than previously available in the Model 20 1419 Card IOCS is made available by providing a priority parameter. This can be utilized in those applications where one document per line printing is not required.

Core storage required by the 1419 or 1259 IOCS and printer IOCS is approximately 1200 bytes, including most of the options.

For more detailed performance information refer to SRL IBM System/360 Model 20 Disk and Tape Progr   ng Systems Input/Output System for the IBM 1419 and 1259 Magnetic Character Readers, C33-6001-1.

Limitations

This support is not upwards compatible with higher System/360 models.

If the user pocket selection routines exceed the limits described in the performance section of the above mentioned SRL, the 1419 documents will reject and the 1259 reader will stop with the stacker command light on.

Document sorting (1419 only) must be based on fields read in the first 5.8 inches of the document.

Release Date: September 26, 1967
Distribution: All Areas

P67-100

Document rejects may occur if any single user instruction exceeds 2.7 milliseconds (1419) or 5.0 milliseconds (1259). Splitting of lengthy instructions or disengaging the Magnetic Character Reader prior to their execution is suggested.

Minimum Machine Requirements

For program assembly of MICR IOCS the Tape and Disk assembly requirements remain unchanged.

For object program execution the user processing requirements dictate the storage size. Minimum storage sizes - tape system 8K - disk system 12K.

Devices Supported

IBM 1419 Magnetic Character Reader Model 1 and these features:

Batch Numbering
Programmable Pocket Lights
51 Column Sorting

IBM 1259 Magnetic Character Reader Model 1.

I3M 1403 Printer Models 2, 7, N1 and these features:

Interchangeable Chain/Train Cartridge
Selective Tape Listing
Universal Character Set

IBM 2203 Printer and Additional Print Positions feature.

Reference Material

System/360 Model 20 Disk and Tape Programming Systems Input/Output System for the IBM 1419 and 1259 Magnetic Character Readers, C33-6001

System/360 Model 20 Assembly Language (Disk and Tape Programming Systems), C24-9002

System/360 Model 20 Input-Output Control System - (8K Tape), C24-9003

System/360 Model 20 Input-Output Control System - Disk, C24-9007

System/360 Model 20 8K Tape Control and Service Programs, C24-9000

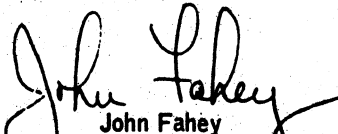System/360 Model 20 Systems Control and Service Program (Disk) C24-9006

System/360 Model 20 Functional Characteristics, A26-5847

IBM 1219 Reader Sorter and 1419 Magnetic Character Reader, A24-1499

IBM 1259 Magnetic Character Reader Component Description, A24-3500

1259 MAGNETIC CHARACTER READER FOR SYSTEM/360 MODELS 30 AND 40   [B]

Here's another important announcement for your MICR customers. The 1259 Magnetic Character Reader Model 2 (used with System/360 Models 30 and 40) is supported under DOS/360. Availability will be January 1969. The 1259 Model 2 is completely compatible with the 1419s equipped with the S/360 Single Address Adapter (except a maximum of one 1259 may be attached per system). Thus, the 1419 IOCS capability announced in P67-32 is directly applicable to the 1259. See DP Letter 267-60.

John Fahey
Director of DP Marketing

Side 2 of 2