

**NEW UTILITY PROGRAM TO BE AVAILABLE FOR COMMERCIAL APPLICATIONS ON IBM 1130**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

The 1130 Disk Data File Conversion Program will be available with 1130 RPG, providing conversion assistance for the presently installed customer. This utility minimizes the effort in converting commercial data files, previously created by 1130 FORTRAN, into an acceptable format for the 1130 RPG Sequential File Organization.

The program operates in a stacked job environment under control of and as a part of the 1130 Disk Monitor System, Version 2 (1130-OS-005) and will be available July 15, 1969.

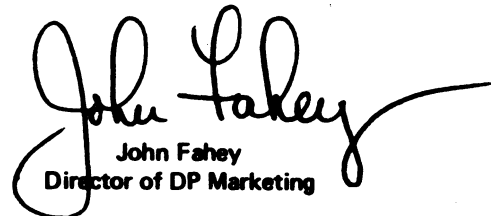
It provides a conversion path from disk data files created by user programs programmed in FORTRAN (or FORTRAN with Commercial Subroutines) (1130-SE-25X) to disk data files accessible by RPG-compiled user programs. An interim stage of punched cards is an option where disk space is not available. Input records are from disk except where card input has been specified. The program allows selective field conversion and data rearrangement within the converted record. Output is another disk data file record (on the same or a different drive) unless punched card output is specified.

The following field types are acceptable as input to this program:

one word integers  
 two word integers  
 Real Numbers (either standard or extended precision)  
 FORTRAN's A1 or A2 for integer data  
 FORTRAN's A1, A2, A3, A4, A5, or A6 for extended precision real data  
 Commercial subroutine's D1 and D4 data format  
 Commercial subroutine's A3 data format

The program requires the same minimum configuration as 1130 RPG. It creates an RPG sequential disk file as output only.

TNLS to the 1130 Disk Monitor Version 2, Programming and Operator's Guide and 1130 Disk Monitor, Version 2, Program Logic Manual (PLM), will be available concurrent with the program availability.

  
 John Fahey  
 Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: April 7, 1969  
 Distribution: All Areas

Published by DP Sales Publishing Services, WTHQ





### PROGRAM ANNOUNCEMENT

#### ADDITIONAL INFORMATION ON ADVANCED LIFE INFORMATION SYSTEM/360 (ALIS)

This announcement cancels Item A in P67-22 and should be read in its entirety.

The release of ALIS starts on June 30, 1968. The plan for release is:

- . ALIS I documentation available June 30, 1968.
- . ALIS I code available from PID March 31, 1969. (See Memorandum to DP Branch Managers B68-98.)
- . Certain transactions have been withdrawn from ALIS I and II. (See list on back of this letter.) In each case an alternative method for accomplishing these functions has been identified. (See Memorandum to DP Branch Managers B68-98.)
- . A number of transactions originally included in ALIS II will be available as part of ALIS I. The remaining ALIS II transactions are re-scheduled to July 31, 1969. (See list on back of this letter.) ALIS II then becomes an integral part of the total ALIS program.

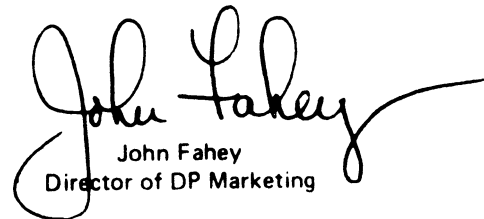
ALIS is the largest Type II program ever written by IBM. The ALIS program contains approximately 1,000,000 object code instructions, over 2,000 insurance modules, and 20 application and systems manuals. The large number of possible interactions in a program of this size has indicated the need for extending the IBM systems test.

Since most users require long lead times for system evaluation and master record and transaction definition, the ALIS I documentation is being made available June 30, 1968 for study, education, evaluation and preparation for use. Requests for early release of ALIS I code will require normal Regional, DPD HQ, and DP Group approval.

Notify all customers affected by these changes immediately.

The new sales manual write-up is on page 3 of this announcement.

NOTE: ALIS has been designed for the insurance practices of North American Life insurance companies and will have limited applicability to World Trade countries.

  
John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: April 7, 1969  
Distribution: All Areas

P69-51A

TRANSACTIONS ORIGINALLY INCLUDED IN ALIS II ADVANCED TO ALIS I

<u>Transaction</u>	<u>Trans. #</u>
Update Cash Values	2420
Replace Cash Values	2430
Update Reserves	2450
Replace Reserves	2460
Update Renewable Term Rates	2470
Process Maximum Cash Loan	4062,4063
Process Net Cash Loan	4064,4065
Process Gross Loan Increase	4066,4067
Process Gross Loan Total	4068,4069

ITEMS ORIGINALLY INCLUDED IN ALIS II ADVANCED TO ALIS I

Miscellaneous Notifications and Follow-up Messages  
Error Register Print

TRANSACTIONS AND FUNCTIONS IN ALIS II

Valuation	6 programs
Simple Changes	Add, Delete Premium Elements 2210, 2211, 2220, 2221 2270, 2271, 2275, 2276 2280, 2281, 2285, 2286
Simple Changes	Replace Par Options 2380, 2381, 2480, 2481
Quotation and Conversion to Extended Insurance and Reduced Paid Up	4020, 4021, 4120, 4121
Home Office Inquiry	4110, 4111, 4120, 4121 4150, 4154, 4162, 4163 4170, 4186, 4188
Simple Change-Premium Waiver	2190, 2191
Simple Change-Revive Lapse	2180, 2181

TRANSACTIONS WITHDRAWN FROM ALIS I

<u>Transaction</u>	<u>Trans. #</u>	<u>Transaction</u>	<u>Trans. #</u>
Miscellaneous Cash	3690	Request Anniversary Notice - Revenue System	4084
Program Generated First Notice Billing Request - Revenue System	4080		4085
	4081	Request Annual Notification - Revenue System	4096
Externally Created First Notice Billing Request - Revenue System	4082		4097
	4083		

TRANSACTIONS WITHDRAWN FROM ALIS II

<u>Transaction</u>	<u>Trans. #</u>	<u>Transaction</u>	<u>Trans. #</u>
Withdraw Participation Values	4050	Process Payment of XX Premiums by APL	not assigned
	4054	Quotation of Payment of XX Premiums by APL	not assigned
	4056		
Force Record to Issue Status	2160	Quote Death Claim - Entire Policy	not assigned
	2161		
Complex Change Quotation	4130	Replace Billing	4194
	4131	Fields Quotation	4195
Family Rider Death Claims	4000	Change From Pending to Approved	2630
	4002		2631
	4004	Cash Surrender of Rider	4008
	4005		4009
			4108

SALES MANUAL TEXT

**Advanced Life Information System (ALIS):** Represents an insurance information systems approach to the maintenance, processing, and servicing of individual life insurance contracts.

**Description:** The system uses modular programming techniques to perform 1. automatic processing of scheduled (internal) and nonscheduled (external) transactions and 2. updating of policies with cash values, reserves, dividends, and other forms of participation, and renewable term premium rates just before the anniversary.

Most modules which perform these insurance logic functions are programmed in COBOL. This simplifies program maintenance and modifications. Executive routines link the insurance logic modules with the IBM Disk Operating System for System/360. These routines are modular and written in assembler language. This separation of processing and control functions provides the widest possible range of system configuration approaches to solve individual customer requirements.

**Features:** The system is designed in a modular concept for ease of use and modification ... insurance logic modules are designed to work in a disk operating systems environment ... the mass direct access storage capacity of the IBM 2321 Data Cell Drive is used to house the policy master file ... input/output requirements of the system are device independent ... insurance logic is designed to provide maximum flexibility for companies of all sizes to effectively utilize its features ... provides a base for Teleprocessing communications network ... the system supports one 1050 terminal and one 2260 terminal.

**Customer Responsibilities:** A thorough knowledge and understanding of the system before implementation ... design conversion procedures to generate policy master records in a form acceptable to the system ... generate dividend, renewable term premiums, cash value, net premiums, benefit and terminal reserve rate tables ... develop adequate procedures and programs to generate policy master records for all new business, exchange, conversion, and re-instatement contracts ... write programs to print premium notices and other forms of notification except where notification by automatic status is adequate ... prepare Commission statements and Agents Accounting from system generated output.

**Special Sales Information:** The philosophies and concepts incorporated in the Advanced Life Information System are applicable from the smallest to the largest life insurance company ... the system can be user modified to accommodate Individual Health ... true systems expansion paralleling customer growth without redesign or reconversion ... modular design and programming techniques facilitate the user's selective expansion and modification to input/output formats, insurance processing routines, and the contents of the policy master record ... the use of COBOL as the principal programming language provides meaningful insurance-oriented documentation; explanations of the insurance logic are divorced from the machine-oriented controls, and documented separately for each function.

**Programming Systems:** ALIS uses the System Control and Basic IOCS, Consecutive Tape IOCS, Direct Access Method, Indexed Sequential File Management System, Group I, II, and III Utilities, Disk/Tape Sort/Merge or Tape Sort/Merge, Assembler Language, COBOL, Compiler Input/Output Modules, and BTAM (Basic Telecommunications Access Method). Users must become familiar with these components of the Disk Operating System.

The program operates under DOS/360 and does not restrict the customer's use of DOS/360.

ALIS also uses the following BPS/360 programs: Initialize Data Cell, Initialize Disk, and Copy Disk To Tape and Restore Tape To Disk.

**Minimum System Requirements:** System/360 Model F30 with Decimal Arithmetic, Storage Protection, Interval Timer, Selector Channel, and 1051 Attachment ... a 1051 Control Unit Model N1 with CPU Attachment, Systems Console Attachment, First Punch, First Reader, and First Printer Attachments controlling one 1052 Printer-KeyBoard Model 8 ... 2841 Storage Control with 2321 Attachment Feature ... a 2321 Data Cell Drive Model 1 and a 2311 Disk Storage Drive Model 1 ... four 2401 Magnetic Tape Units Model 1 ... 2803 Tape Control Unit Model 1 ... 2821 Control Unit with a 1403 Printer Model 2 and one 2540 Card Read Punch Model 1.

Alternate input/output units supported by DOS/360 may be substituted to satisfy individual company requirements. Consideration must be given to volumes of input and output in light of required throughput speeds ... off-line system availability ... sorting capability in this or another system ... requirements of programming systems for other user applications.

When the inquiry features of ALIS are available, the following additional devices are required: a 2848 Display Control Model 2 with a 2260 Display Station Model 1 with display adapter, line addressing, non-destructive cursor, and non-destructive cursor adapter ... a 2701 Data Adapter Unit Model 1 with Line Adapter (#4636) and Terminal Adapter (#4645) ... a 1051 Control Unit Model 1 with Line Adapter, First Printer Attachment, and Keyboard Request features ... a 1052 Printer-KeyBoard Model 1.

**Program Support Material:** Advanced Life Information System Application Description Manual (H20-0126) ... Advanced Life Information System Master Record Code Book (H20-0483) ... Advanced Life Information System Operations Manual (H20-0517) ... Advanced Life Information System Utility Program Description Manual (H20-0519) ... Advanced Life Information System Batch Edit System Manual (Y20-0177) ... Advanced Life Information System Input Edit System Manual (Y20-0178) ... Advanced Life Information System Frequently Used Record Formats System Manual (Y20-0179) ... Advanced Life Information System Miscellaneous Volume System Manual (Y20-0180) ... Advanced Life Information System File Maintenance Run Executive System Manual (Y20-0181) ... Advanced Life Information System Data Cell Reorganization Program, Policy Master Record Merge Program, Data Cell Reconstruction Program, and Data Cell Restore Program System Manual (Y20-0182) ... Advanced Life Information System File Maintenance Include (R) Routines (Narratives) System Manual (Y20-0183) ... Advanced Life Information System File Maintenance Include

(R) Routines (Flowcharts) System Manual (Y20-0184) ... Advanced Life Information System File Maintenance Call (S) Routines (Narratives) System Manual (Y20-0185) ... Advanced Life Information System File Maintenance Call (S) Routines (Flowcharts) System Manual (Y20-0186) ... Advanced Life Information System File Maintenance Issues, Additions, Complex Changes, and Terminations Transactions System Manual (Y20-0187) ... Advanced Life Information System File Maintenance Simple Changes Transactions System Manual (Y20-0188) ... Advanced Life Information System File Maintenance 36XX Financial Transactions - Payments System Manual (Y20-0189) ... Advanced Life Information System File Maintenance Financial Transactions - Accounting Entries System Manual (Y20-0190) ... Advanced Life Information System File Maintenance Status Transactions - Process and Quote Terminations System Manual (Y20-0191) ... Advanced Life Information System File Maintenance Status Transactions-Process and Quote Miscellaneous, Loan Values, and Participation Values System Manual (Y20-0192) ... Advanced Life Information System File Maintenance Billing Transactions System Manual (Y20-0193) ... Advanced Life Information System File Maintenance Premium Due, Overdue, and Anniversary Processing Transactions System Manual (Y20-0194) ... Advanced Life Information System File Maintenance Rate File Extract and Anniversary Extract Update Transactions System Manual (Y20-0195) ... Advanced Life Information System File Maintenance Contractual Change and Notifications System Manual (Y20-0196) ... Advanced Life Information System Output Analysis System Manual (Y20-0197) ... Advanced Life Information System Transaction Register System Manual (Y20-0198) ... Advanced Life Information System Status Print System Manual (Y20-0199) ... Advanced Life Information System Policy Accounting Journal System Manual (Y20-0200) ... Advanced Life Information System Accounting Control System Manual (Y20-0201) ... Advanced Life Information System Error Register System Manual (Y20-0202) ... Advanced Life Information System Rate File System Manual (Y20-0203).

**Reference Material:** Promotional Brochure (520-1205).

For additional information contact your Insurance Marketing Representative.





**OS/360 BTAM TO INCLUDE 2760 OPTICAL IMAGE UNIT SUPPORT**

The Basic Telecommunication Access Method (BTAM) under OS/360 is being expanded to include support for the IBM 2760 Optical Image Unit. Availability is October 31, 1969.

The 2760 Optical Image Unit\* is a user oriented data entry device which is attached to 2740 Model 1 Communication Terminal. Images are optically projected on the 2760 screen from a strip of 16mm film, color or black and white, that is stored in a protective cartridge and easily inserted or removed from the optical unit. \*See DP Letter 268-26.

To communicate with the computer, the operator merely touches an appropriate location (response point) on either half of the screen with the data selection probe. The right half of the screen displays data projected from the film strip. The left half of the screen is used to provide a set of relative permanent response points which may be labeled by an overlay. By placing the probe on a response point on the screen, the operator can cause a pair of coordinates for the point on the displayed frame to be transmitted to the computer. These two coordinate characters can represent a multi-digit part number, a word, a phrase, a product name, etc.

The computer can respond to the operator by moving the film to a frame which has a pertinent message or data. The computer can also respond with a message to the 2740 printer. The 2740 keyboard can be used by the operator as an additional means for data entry.

The OS/360 BTAM support for the 2760 provides the interface to the application program necessary to control the operation of the terminal. When input is requested, the information provided to the application program includes frame number and response point coordinates. For messages sent to the 2760, the application program must supply information on film movement direction and number of frames to be moved.

**Minimum System Configuration -- OS/360 BTAM Main Storage - 128K bytes ... Standard Instruction Set ... Storage Protection ... Interval Timer ... One 1052**

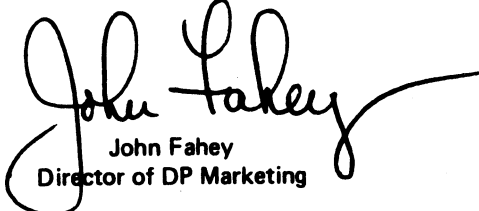
Console ... One selector channel for system residence ... One multiplexer channel or an additional selector channel for communication control units ... One Card Reader\*\* (1442-N1, 2540, 2501, 2520) ... One Printer\*\* (1403, 1404, or 1443) ... Three 2311s or one 2314 Disk Storage Device ... Communication equipment necessary to interface with the communication line.

\*\* One 2400 series Magnetic Tape Device may be substituted for each device. See sales manual page P 360S.7.

**Publication --** The availability of the IBM System/360 Operating System, Planning for IBM 2760 BTAM Support manual will be announced in a future PRL.

**OS/360 BTAM SUPPORT OF 2741 COMMUNICATIONS TERMINAL**

Programming letter P69-23 incorrectly referred to the Auto Call feature. The Dial Up feature 3255 is required if a switched network is used, not the Auto Call feature.

  
John Fahey  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

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

FOR IBM INTERNAL USE ONLY

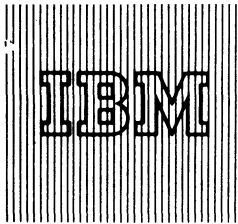
Release Date: April 9, 1969  
Distribution: All Areas

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.
- [4] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**





**SYSTEM/360 STATISTICAL ANALYSIS OF FILES (STAF) TO BE AVAILABLE**

The Statistical Analysis of Files (STAF) program provides customers with an easy method for producing statistical reports in the form of tabular or graphic reports (histograms, scatter diagrams, curves, and maps).

Input data can be picked up from one or more files with very little restriction on file organization.

STAF is especially adapted to commercial and economic statistics, and poll analysis.

The STAF user is provided with a simplified method of problem statement designed to minimize programming effort.

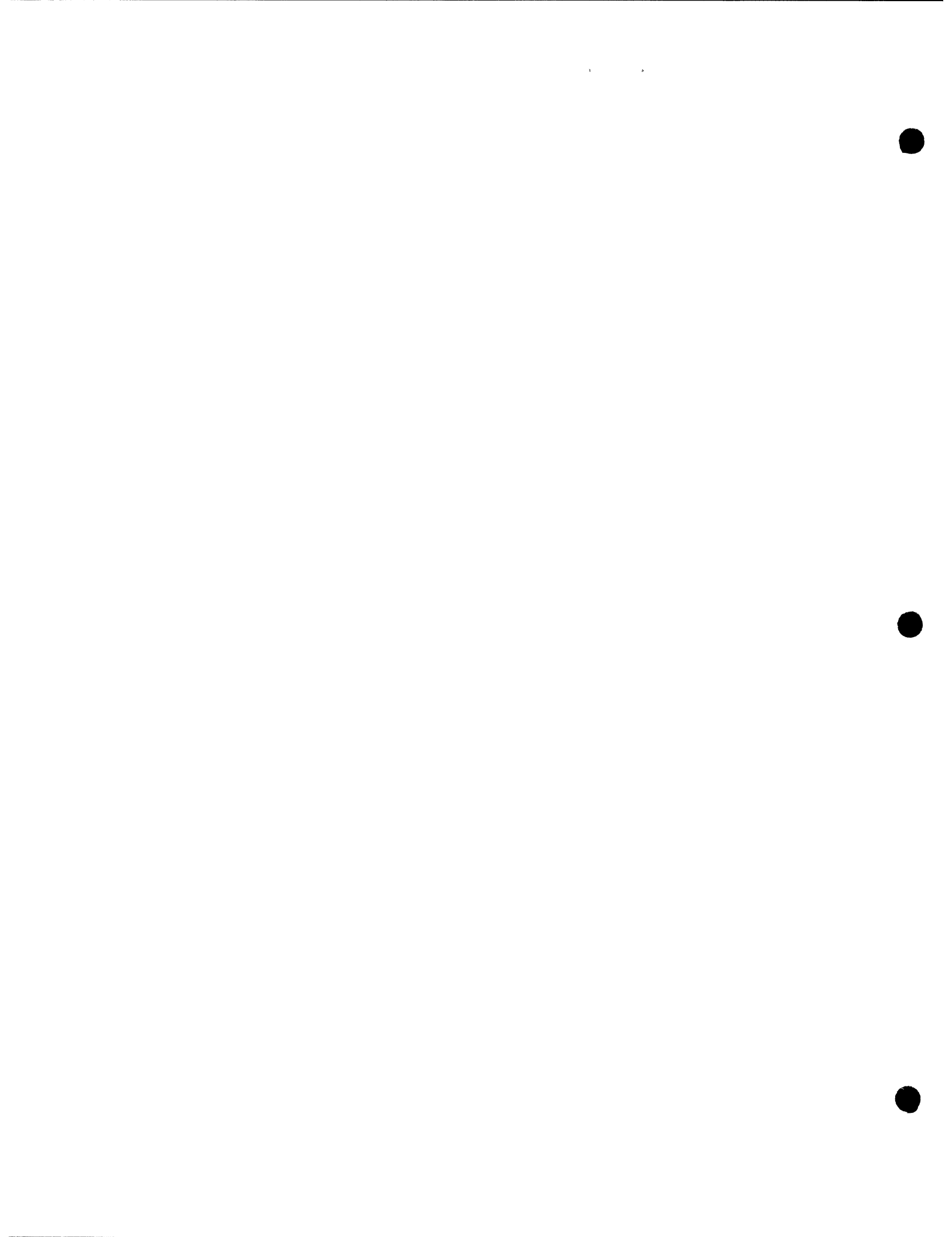
Version 1 of STAF will be available on Oct. 15, 1969, with features to produce tabular reports only. The availability date of STAF Version 2 with graphic output features will be announced Oct. 30, 1969.

Program Support material will be available in the Application Description Manual (H19-0013-0). Advance copies will be shipped. Additional copies will be obtainable from the IBM Distribution Center, Mechanicsburg, Pa. Consult the weekly Publications Release Letter for actual date of availability.

See the attached Sales Manual pages for additional details.

  
John Fahey  
Director of DP Marketing

Attachment[1]: Programming P9039  
Release Date: April 7, 1969  
Distribution: All Areas





PROGRAM ANNOUNCEMENT

DOS/360 BTAM AND OS/360 BTAM WT SWITCHED NETWORK SUPPORT

IBM World Trade announces the additional capability of DOS/360 BTAM and OS/360 BTAM to support Binary Synchronous Communications (BSC) via switched networks in World Trade countries. (OS/360 RJE does not support BSC operation via switched networks in World Trade countries.) This announcement enhances and clarifies the BTAM BSC Intermix announcement (Reference P69-5) as it applies to WT Switched Network. DOS/360 BTAM and OS/360 BTAM may be used for switched network operation in the following countries with the following modems:

- United Kingdom with the GPO Modem type Datel 1 Model 5.
- Germany with the PTT Modem type D 1200S (GH 2011 Model 5).
- Sweden with the PTT Modem type GH-2002 A.
- Countries, where approved, with the IBM 3976 Modem Model 3.

DOS/360 BTAM and OS/360 BTAM support point to point half-duplex communication between a System/360 computer\* and the following BSC terminals in a switched network. A common line termination (phone number) may be used at the central computer.

- System/360 computer\* with a 2701 or 2703 using DOS/360 BTAM or OS/360 BTAM.
- System/360 Model 25 with the Integrated Communications attachment and using DOS/360 BTAM.
- System/360 Model 20 with the Binary Synchronous Communications adapter and using the BSCA IOCS program.
- IBM 1130 with the Synchronous Communication Adapter and using the Communication Subroutines. (IBM 3976 Model 3 only).
- IBM 2780 Data Transmission Terminal.

All BSC terminals using a common switched connection must:

- Use modems which have been announced by WT for BSC operation.
- Use the same transmission code (EBCDIC or USASCII).

The BSC terminals have a variety of features and capabilities. Certain combinations of terminals require that some features or capabilities be used selectively or not at all. The following chart lists the combinations of current available terminals which may be used with a control System/360 computer in a switched network. The chart also lists the device code which must be used in BTAM and the restricted function usage.

Restrictions

Binary Synchronous Communication using switched lines are not supported by BOS or BPS.

\*System/360 Models 25 and 30 with DOS; Models 40, 50, 65, 67 (in 65 mode) and 75 with DOS or OS; Model 85 with OS.

<u>Switched Point to Point Network Chart</u>		
Remote terminal combinations which are currently supported by the central S/360.		
<u>Remote Terminal Combination</u>	<u>Device Code</u>	<u>Restricted Function Usage</u>
S/360, 2780 2020, 2780 S/360,2020,2780	2780	None
S/360,2020	2020	a) When a station uses identification, all stations using the same phone number at the central computer must use the same identification sequence.
S/360, 1130 2020, 1130 2780, 1130 S/360,2020,1130 S/360,2780,1130 2020,2780,1130 S/360,2020,2780, 1130	1130	a) EBCDIC code only. b) When ITB mode is used, the IUS character cannot be sent to or from the 1130.

**IBM SYSTEM/360, MODEL 20 PROGRAMMING SUPPORT FOR WT SWITCHED NETWORKS**

An additional capability of the Model 20 BSCA-IOCS Programming Support will allow communications via switched public networks with another Model 20 with similar support or with a System/360, Model 25 with ICA and Model 25, 30, 40, 50, 65, 67 (working in 65 mode), 75 or 85 via a 2701 equipped with SDA-Type II or a 2703 equipped with Binary Synchronous features, with DOS/OS BSC BTAM support (DOS only on Model 25 and 30, OS only on Model 85). All submodels of the Model 20 (02, 04, 05) are supported.

The programming support for the Manual Dial Capability will be an integration of the present BSCA-IOCS and no new dependencies or exceptions have been added.

The required machine configuration will be the same as for the present BSCA-IOCS. If specified, fifty (50) bytes of additional storage will be required for the Manual Call Write macro and eighty (80) bytes if the Write connect macro includes both Automatic and Manual Dial. This does not include any core requirements for the Input-Output areas or additional storage for the problem program.

Availability

The BSC Programming Support for World Trade Switched Networks will be released to DP PID as follows:

DOS/360 BTAM	August 29, 1969
OS/360 BTAM	September 30, 1969
S/360 Mod 20 BSCA IOCS	May 31, 1969

Publications

The following publications will be updated to reflect this support:

The update availability will be concurrent with the program availability.

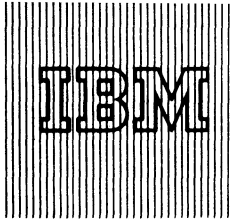
IBM System/360 Disk Operating System - Basic Telecommunications Access Method TNL to #C30-5001-5

IBM System/360 Operating System - Basic Telecommunications Access Method TNL to #C30-2004-2

IBM System/360 Model 20 Input/Output Control System for the Binary Synchronous Communications Adapter #C33-4001-3

IBM System/360 Model 20 Operating Procedures Manual #C33-4002

  
John Fahey  
Director of DP Marketing



**STOCK COUNTING PACKAGE**  
( Retail Impact Staple System )

The availability of the OS/360 STOCK COUNTING PACKAGE will be June 1969.

This announcement enlarges considerably the scope of the announcement of the OS/360 Retail IMPACT (Staple) System.

— The OS/360 Retail Impact Staple System is a total inventory management system designed specifically for staple merchandise within the Retail Industry. It includes four subsystems:

- The Simulation subsystem
- The Forecasting subsystem
- The Decision Rules subsystem
- The Control subsystem

The Control Subsystem processes input transactions and is based on the use of Direct Data Capture methods. Its use is restricted to customers able to feed the system with Data collected at the point of sale.

— The OS/360 STOCK COUNTING PACKAGE includes mainly a modified Control Subsystem which allows for the input of stock counts data instead of sales data, and thereby extends to a much greater number of retailers the possibility of using Retail IMPACT.

Program Support material will be available in the Application Description Manual (H19-0015-0). Advance copies will be shipped. Additional copies will be obtainable from the IBM Distribution Center, Mechanicsburg, Pa. Consult the weekly Publications Release Letter for actual date of availability.

For complete details see the sales manual pages attached.

  
**John Fahey**  
 Director of DP Marketing

1



**INFORMATION MANAGEMENT SYSTEM/360  
(IMS/360) (TYPE II)**

The statement of minimum machine configuration requirements for IMS/360 has been revised to provide clarification of the features required for support. See the updated sales manual text on the reverse side.

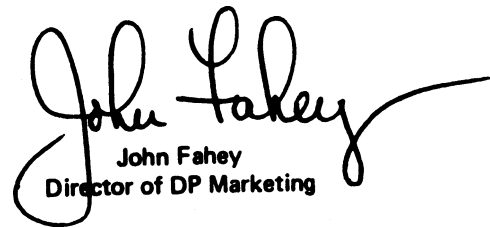
IMS/360 will be available July 31, 1969 as announced in P68-66.

Proposed or on-order configurations for IMS/360 customers should be reviewed immediately for any changes.

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: April 11, 1969  
Distribution: All Areas

P69-53

**Information Management System (IMS/360):** IMS/360 enhances the capability of the Operating System/360 and facilitates the implementation of medium to large common data bases in a multi-application environment. This environment accommodates both Teleprocessing and conventional batch processing operations concurrently or separately. The System allows the evolutionary expansion of data processing applications from a batch to a Teleprocessing environment.

Data base batch-only processing capabilities are provided through a new data management concept designated Data Language/I, which can operate independently under OS/360 - PCP (Primary Control Program), MFT-II (Multiprogramming with a Fixed Number of Tasks, Version II), or MVT (Multiprogramming with a Variable Number of Tasks).

The combined Teleprocessing data base facilities of the IMS/360 operate under OS/360 MFT-II or MVT.

**Description:** IMS/360 operates within the definition and capabilities of OS/360. Teleprocessing capabilities are characterized by the use of remotely located input/output terminals, connected to the computer, which provide the user with ready access to the computer-maintained data base. The communications network, consisting of 1050 and 2740 terminals, enables the system to receive and transmit a variety of message types for multiple applications. Terminals need not be dedicated to specific applications.

Control information describing each message type allows the system to initiate message processing or message switching. Teleprocessing includes both data base inquiry and update processing. A user-provided library of application programs for message and batch processing and a description of their data base requirements must be provided for the IMS/360 to enable the scheduling of message processing. These application programs may be written in the following OS/360 programming languages: Assembler, COBOL, or PL/I.

The execution of message-processing programs is scheduled by the IMS/360 based upon message priority.

Another characteristic of the system is the use of direct access storage devices which allow the processing of single records located at random in the data base as well as the processing of records referenced in a sequential manner.

The data base processing capabilities of the IMS/360 are provided through Data Language/I. The functions of data base definition, creation, access and maintenance are assisted by these capabilities. Data base definition provides for the description of a hierarchical data segment structure. Although data base maintenance is always initiated by message and batch processing programs, the description of a program's data base requirements, data base definition, and mechanics for data base maintenance are provided externally. The full data base capabilities of Data Language/I can be used independently of the other IMS/360 functions for data base batch processing.

IMS/360 provides the user with checkpoint/restart capabilities. The normal mode of initiating the system is through these restart capabilities. Manual intervention is always required to initiate restart.

**Features:** IMS/360 is a general-purpose system ... the user tailors the system to his environment ... data base support supplied through Data Language/I ... application program independence from OS/360 data management access methods and organization ... variable-length record support ... application programs may be written in COBOL, PL/I, or Assembler Language ... application-independent support of 2740/1050 terminals ... dialin and multidrop communication line support ... Teleprocessing or batch operations separately or concurrently ... security techniques available to user ... checkpoint/restart capability ... storage protection provided for each application processing program.

**Special Sales Information:** The program is designed for users with workloads of varying sizes and complexities. Primary users will be large data base-oriented organizations.

The marketing representative should be cautioned that the development of a customer data base and placing it on-line can be a large and complex undertaking. Complete understanding of the applications and programming systems is essential. The development, by the marketing representative with the customer of an effective implementation is a phased approach. The initial phase permits batch processing against the data base. Once data base experience is gained and the application needs dictate, the Teleprocessing phase can be initiated.

The marketing representative should be certain that the hardware configuration selected for the on-line environment will meet the availability requirements of the customer applications.

**Use:** The user of the IMS/360 has the capability of structuring data bases, defining various applications, and tailoring the input/output terminal and data storage environment. He uses the utility programs supplied to construct control blocks which tailor the system to his environment.

**Customer Responsibilities:** A customer installing the IMS/360 must meet Minimum Machine Configurations (paragraph below) ... see to it that appropriate OS/360 and System/360 training be given to the programmers and system operators (consideration should be given to terminal and direct access storage education) ... have personnel schooled in IMS/360 ... provide adequate protection against the accidental loss or misuse of his data (functions exist within IMS/360 to assist in providing data security) ... plan for installation and operation of his remote terminals ... make sure personnel are acquainted with either COBOL, PL/I, or Assembler Language (they will need instruction in the appropriate language) ... define parameters for each data processing application defined: the definition of each Data Language/I data base; the definition and construction of all message and batch processing programs; the definition of various message types and their associated processing pro-

grams; the definition of the communication network utilized by the application program; the user must also structure IMS/360 by the creation of a control block for each communication line, terminal, message type, message processing program, and data base.

**Programming Systems:** IMS/360 operates under Operating System/360. IMS/360 is written in Assembler Language; Teleprocessing and batch processing application programs may be written in either Assembler Language, COBOL, or PL/I.

The batch-only system operates under PCP, MFT-II, or MVT and uses Sequential Access Methods and Indexed Sequential Access Methods.

The Teleprocessing and related batch system operate under MFT-II, or MVT and uses in addition to the above item:

BTAM (with Communication Serviceability Facilities), SER1 or Recovery Management Support, User-added SVC routines (Three SVC numbers must be reserved for IMS/360).

If MFT-II: Storage Protection and Interval Timing are required; in addition, PCI Fetch, Resident Access Methods, and Resident IDENTIFY and ATTACH macro instructions are highly recommended.

**Minimum Machine Configurations:** Input/output facilities used by batch-only IMS/360 (in addition to those required by OS/360, other non IMS/360 application programs, and the data base itself), include ... one 9-track magnetic tape unit ... 300 cylinders of 2311 Disk Storage for program storage and work space (or equivalent 2314 space). Additional input/output used by the Teleprocessing IMS/360 program include at least one 1050 Data Communication System or 2740 Communication Terminal with appropriate control units ... one additional 9-track magnetic tape unit.

The supported terminals and required features are:

2740 Model 1 - Nonswitched Network with Record Checking (#6114); Station Control (#7479); Terminal to Multiplexer (#9700); Dual Case Printing Element (#9571 or #9591); Automatic EOB (#1313) - [See note below].

2740 Model 1 - Switched Network with Record Checking (#6114); Transmit Control (#8028); Terminal to Multiplexer (#9700); Dual Case Printing Element (#9571 or #9591); Automatic EOB (#1313); Dial Up (#3225) - [See note below].

1050 System - Nonswitched and Switched Network: 1051 Model 1 or 2 with First Printer Attachment (#4408); Keyboard Request (#4770); Dual Case Printing Element (#9571 or #9591); Automatic EOB (#1313); 1052 Model 1 or 2 with Automatic EOB (#1313) - [See note below].

2701 Data Adapter Unit\* with IBM Terminal Control Type I (#4645) - [See note below].

2702 Transmission Control\* with IBM Terminal Control Type I (#4615) with appropriate selective speed feature; Terminal Control Base (#9696) - [See note below].

2703 Transmission Control\* with Start-Stop Base Type I (#7505); IBM Terminal Control Base (#4619); IBM Terminal Control Type I (#4696); Line Speed Option 134.5 bytes (#4878) - [See note below].

2040 Processing Unit with Selector Channel-First (#6980); Storage Protection (#7520); Decimal Arithmetic (#3237).

\* The user may choose the 2701, the 2702, or the 2703 to meet his minimum configuration requirement.

**Note:** Line adapter and/or data sets must be added as required to satisfy the user's communications control unit and communications line facilities.

Core storage requirements are described in the Application Description Manual (H20-0524). Minimum system requirements are 128K bytes for batch-only PCP operation, and 256K bytes for Teleprocessing with MFT-II. In the latter case, the system for all practical purposes, would be dedicated to on-line IMS/360 applications.

**Typical IMS/360 Configuration:** A System/360 Processing Unit Model I (512K) with Multiplexer Channel ... three Selector Channels ... two tape controls ... ten 9-track Magnetic Tape Units ... two 2314 Direct Access Storage Facilities ... 1052 Printer-Keyboard Model 7 ... two 2702 Transmission Controls with 31 Line Expansion (#7955) and the features listed under Minimum Machine Configurations ... ten 1050 Data Communications Systems with the features listed under Minimum Machine Configuration ... fifty-two 2740 Communication Terminals with the features listed under Minimum Machine Configuration ... 2821 Control Unit Model 5 ... 2540 Card Read Punch ... two 1403 Printers Model N1.

**Note:** The maximum number of input/output devices, including communication lines, which may be attached to the System is in accord with capabilities of OS/360.

**Program Support Material:** Application Description Manual (H20-0524) with TNL N20-1945).

**Reference Material:** IBM System/360 System Summary (A22-6810) ... IBM Operating System/360 Concepts and Facilities (C28-6535).

For further information contact Industry Marketing - Manufacturing, DPD HQ.



**NEW VERSION OF COMPUTER SYSTEM  
SIMULATOR/360 (CSS/360) AVAILABLE  
AS IBM CONFIDENTIAL (TYPE II)****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

Version 2 of CSS/360 (360A-SE-29R) is available on an IBM Confidential basis. It is a simulation program that provides a means for analyzing the operation of computer systems, especially System/360 configurations.

New features introduced by this version include the ability to model memory interference ... more flexible control procedures ... multiple random number generators. Previous models may be run under this new version without changes.

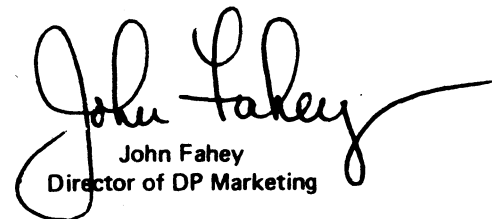
The program and System Manual (Z20-1860) will not be distributed to customers. However, with branch management approval, external documentation regarding functions, capabilities, and use of CSS/360 may be distributed to customers on a restricted basis.

CSS/360 operates under OS/360 and provides a language used to construct a model of the computer system under study. Equipment operation, specified by means of control cards, is automatically accounted for by CSS. High level flowcharts, described in the CSS instruction set, of both the application programs and programming system involved, must be provided by the user. These include statistical information on program timings, job types, and input rates. The level of detail can vary widely, permitting very coarse analysis of operation or studies in great detail. Output statistics describing system behavior are automatically provided. Some examples are job throughput, channel utilization, distribution of response times, queuing delays, storage usage statistics.

**Special Information ...** CSS does not produce an optimum system design; however, it provides the user with the means to evaluate the operation of a specified system. Judgment must then be exercised to determine the accuracy of the results and whether changes are desired. CSS is not a tool for providing quick timing figures for system proposals and should not be used as such.

Details are on the reverse side.

Published by DP Sales Publishing Services, WTHQ



John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: April 18, 1969  
Distribution: All Areas

**Computer System Simulator:** CSS/360 is a simulation program that provides a means for analyzing the operation of computer systems, especially System/360 configurations (360A-SE-29R).

The CSS/360 program and the System Manual (Z20-1860 with TNL Z20-1918) are IBM Confidential and will not be distributed to customers. However, the external documentation regarding functions, capabilities, and use of CSS/360, as well as output results, may be made available to customers on a "Restricted Distribution" basis.

**Description:** CSS/360, operating under OS/360, provides a language used to construct a model of the computer system under study. Equipment operation, specified by means of control cards, is automatically accounted for by CSS. Systems programs, both application and control, are written by the user in flowchart fashion using the CSS instruction set. The program is then run causing CSS to simulate actual system operation. Output statistics which quantitatively describe system behavior are automatically provided. Some examples are job throughput, channel utilization, distribution of response times, and storage usage statistics.

**Features:**

- . The language and structure of CSS closely follow those of the system under study, making CSS a more easily used and understood tool in this area than existing simulation programs.
- . Output allows the user to determine whether the system will meet defined operating criteria and points to strong and weak areas of the system. Effects of changes to existing systems can also be evaluated using CSS.
- . CSS can readily model a wide range of configurations and systems--card, tape and disk sequential systems, multi-processor, multi-programmed, real-time configurations, and time-sharing systems.
- . Equipment operation is automatically accounted for by CSS. This includes System/360 configurations with cross-channel switching, the effects of control unit blocking, and memory interference.
- . Equipment which can be modeled includes (1) multiple processors with core storage, (2) selector and multiplexer channel operation, (3) tapes, drums, disk storage (2302, 2311, 2314), 2321 data cells, punch card data processing equipment and general I/O devices, (4) communication lines and terminals with provision for handling various line speeds, input rates, and polling disciplines.
- . Three features especially for time-sharing systems include the ability to perform priority processing, i.e., displacing and interrupted task ... the ability to create interrupt conditions with an interval timer ... the ability to use terminals in a conversational mode.
- . A "Help" facility which permits the user to add his own coded modules to the program to perform special operations.
- . A library facility is provided whereby standard operations such as operating system routines can be added and easily called by the user.

**User Responsibility:** To construct a CSS model, the user must have a description of the equipment configuration, a high-level logic flowchart of both the application programs and programming system involved, together with statistical information on program timings, job types, and input rates. The level of detail can vary widely permitting very coarse analyses of operation or studies in great detail.

CSS/360 operates on the theory of random number generation and statistical sampling. Like any statistical process, the results obtained are very sensitive to statistical variation as well as to any input logic and timing assumptions made by the user. Therefore, the user must have sufficient competence in this area to properly evaluate the output statistics. When used properly, the program can be a powerful planning and evaluation tool in determining system performance.

**Special Sales Information:** CSS does not produce an optimum system design; it provides the user with the means to evaluate the operation of a specified system. Judgment must then be exercised to determine the accuracy of the results and whether changes are desired. CSS is not a tool for providing quick timing figures for system proposals and should not be used as such.

**Programming System:** The basic CSS program is written in assembler language and operates under control of OS/360. The source tape may be listed under OS/360.

**System Requirements:** CSS requires the minimum configuration supporting OS/360 with at least 128K bytes of main storage; additional storage may be required depending on the size of the model simulated. Guidelines for determining the actual amount of storage required per model can be obtained from the Program Description and Operations Manual (Y20-0130).

**Basic Program Package:**

Documentation -- Application Directory ... CSS Program Description and Operations Manual (Y20-0130-2)\*.

Machine Readable -- Object decks and sample problem.

**Optional Program Package:**

Machine Readable -- Source statements and flowcharts.

**Ordering Information:** Program Number 360ASE29R.

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	none	DTR 9/1600	29	none
		DTR 9/800	28	none
		DTR 7DC/800	26	none
Optional	none	MT 9/1600	29	01
		MT 9/800	28	01

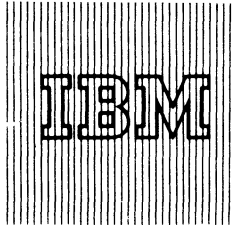
See DP Sales activity section of Branch Office Manual.

**Ordering Procedure:** Submit a Program Order form accompanied by a letter of authorization from the Field Systems Center Manager to PID. Send a copy of the authorization letter to the Manager of Systems Techniques, Simulation; DPD Technical Center; Dept. H-11, Bldg. 850, P.O. Box 390, Poughkeepsie, N. Y. 12602.

**Additional Program Support Material:** Application Description (Y20-0028)\* ... CSS Systems Manual (Z20-1860)\*.

For further information contact your field systems center.

\* If you want the Y20-0130-2 manual and not the rest of the Basic Program package, order from the IBM Distribution Center, Mechanicsburg -- not from PID. All other manuals available only from Mechanicsburg. Manuals will be shipped from Mechanicsburg only to IBM locations. However, customers may be given Y20-0028 and Y20-0130-2 by their IBM representatives on a "Restricted Distribution" Basis (see sales manual, GI 13.1). The "Restricted Distribution" classification requires branch management approval.



**IBM SYSTEM/360 MODEL 20 DISK LINEAR PROGRAMMING SYSTEM (LPS/20) TO BE AVAILABLE**

LPS/20 allows the user to solve linear programming problems easily and efficiently. LPS/20 is composed of a series of linear programming procedures which are stored on disk. The user controls the use of these by simple control statements. Each control statement causes a procedure to be called into core storage and executed. When the procedure is completed, the next statement is read and the next procedure called.

LPS/20 runs also on System/360 Model 25 using the Model 20 Mode Feature.

LPS/20 is data-card compatible with the LPS/1130 (LP-MOSS/1130), LPS/360, and MPS/360, Linear Programming Systems.

**Features:**

**Large problem capacity:**

Program logic providing for up to 156 rows for 16K configurations and 300 rows for 24K.

**Simple, flexible processing control:**

Optional conditional control of processing sequence.  
Special solution of simultaneous equations procedure.

**Simple problem definition**

Easy-to-use format  
Extensive data maintenance functions  
Specification of a starting solution (basis)  
Combination of problems to form master problems

**Advanced mathematical methods**

Automatic, iterative, input scaling for accuracy  
Revised simplex method for rapid processing.  
Bounded variable feature for range constraints ( $\leq$  and  $\geq$ ) and bounded variables to simplify problem description and to increase problem capacity and solution speed  
Multiple pricing for increased solution speed  
Efficient triangularization inversion method for speed and accuracy

**Extensive post-optimal analysis**

Discrete parametric analysis for all problem data

**Extensive checking**

Input check for duplicate entries  
Solution processing check to test for need of early inversion  
Optimization, including an automatic solution check

Availability will be July 28, 1969.

See the attached Sales Manual pages for detailed information.

  
John Fahey  
Director of DP Marketing

Attachments [1]: Programming 9037

Release Date: April 15, 1969

Distribution: All Areas



**1130/2250 GRAPHIC DATA PROCESSING  
PROGRAMS AVAILABLE AS STAND ALONE****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

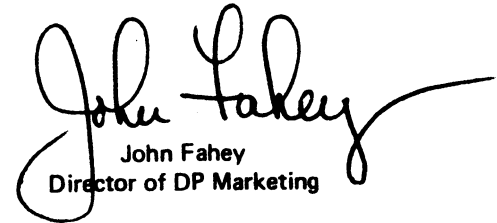
The Satellite Graphic Job Processor and the FORTRAN Subroutine for Data Transmissions between System/360 and 1130 System can now be ordered for use in conjunction with OS/360 Release 17.

With the *Satellite Graphic Job Processor* a user can define a System/360 job from a 2250 display unit attached to a remote 1130 computing system. He may also define an 1130 program to be processed in conjunction with, or independent of the System/360 job.

The *Data Transmission Subroutines* enable a FORTRAN IV programmer to transmit data between a program being processed by a System/360 Operating System and a program being processed by the 1130 Disk Monitor System Version 2.

With these facilities, the computing power and storage capacity of OS/360 is available as needed for the applications. At the same time the user has the operating convenience of an 1130 computer at a remote location.

More information is on the reverse side together with ordering information.



John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

Release Date: April 18, 1969  
Distribution: All Areas

**Job Control from the 1130/2250 using the Satellite Graphic Job Processor (1130-CQ-012)**

The Satellite Graphic Job Processor permits a user to define a System/360 job from a 2250 display unit attached to a remote 1130 computing system. The user may also define an 1130 program to be processed in conjunction with, or independent of the System/360 job.

The Satellite Graphic Job Processor, through a series of displays at the 2250, enables the remote 1130/2250 user to perform the following operations:

- . Identify himself to the System/360 (LOGON).
- . Start execution of a System/360 cataloged procedure (BEGIN PROCEDURE).
- . Specify that a System/360 program or procedure is to be executed as a job step (SPECIFY JOB STEP).
- . Define data sets to be used by the System/360 program (DESCRIBE DATA).
- . Enter 80-character data records to be used by the System/360 program (ENTER DATA).
- . Communicate with the System/360 operator (WRITE MESSAGE).
- . Start execution of the specified System/360 job (BEGIN JOB).
- . Name an 1130 program to run in conjunction with the System/360 job (SPECIFY 1130 PROGRAM).
- . Delete a job he is currently defining, but has not yet started (CANCEL JOB).
- . Re-examine previously completed job operations (RECALL).
- . Conclude his job control operations and free the 2250 for other activities (LOGOFF).

**Minimum Core Requirement ... 16K.**

**E.C. Level Requirements ...** The 1131 CPU must be at E.C. 419689; 1133 Multiplexer at E.C. 420407.

**Basic Program Package ...** Documentation -- IBM System/360 Operating System and 1130 Disk Monitor System: User's Guide for Job Control From an IBM 2250 Display Unit attached to an IBM 1130 System (C27-6938-1). Program Material List and Attachment to Users.

Machine Readable -- Object code.

**Optional Program Package ...** Documentation -- Program Material List, Attachment to Users, and Operating Instructions.

Machine Readable -- Symbolic modules.

**Ordering Information: Program Number 1130CQ012**

	Prg. Nbr. Ext.	Dist. Type	Medium Code	User Volume Requirement
Basic	none	Cards	15	none
Optional	none	DTR	28	none
	none	DTR	29	none

**FORTRAN IV Subroutines for Data Transmission between a System/360 and an 1130 System (1130-LM-011)**

The Data Transmission Subroutines enable FORTRAN IV programmers to transmit data between a program being processed by an IBM System/360 Operating System and a program being processed by the 1130 Disk Monitor System Version 2. They can also be used by Assembler Language programmers who employ the proper method of CALLing FORTRAN subroutines.

**Use ...** The Transmission Subroutines enable the programmer to perform the following:

- . Initialize the communication lines.
- . Transmit and receive data via the communication lines.
- . Test the status of a previously requested transmit or receive operation.
- . Activate a user-written asynchronous routine in the System/360.
- . Terminate the communication linkage between the System/360 and the 1130 data transmission programs.

**Minimum Core Requirement ... 8K.**

**E.C. Level Requirements ...** The 1131 CPU must be at E.C. 419689; 1133 Multiplexer at E.C. 420407.

**Basic Program Package ...** Documentation -- IBM System/360 Operating System and 1130 Disk Monitor System: System/360-1130 Data Transmission For FORTRAN (C27-6937-1). Program Material List and Attachment to Users.

Machine Readable -- Object code.

**Optional Program Package ...** Documentation -- Program Material List, Attachment to Users and Operating Instructions.

Machine Readable -- Symbolic modules.

**Ordering Information: Program Number 1130LM011**

	Prg. Nbr. Ext.	Dist. Type	Medium Code	User Volume Requirement
Basic	none	Cards	15	none
Optional	none	DTR	28	none
	none	DTR	29	none

**Ordering Procedures ...** See the DP Sales Activity Section of the Branch Office Manual.

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



IBM World Trade Data Processing

p 69-55A

PROGRAM ANNOUNCEMENT

**NEW TAB FOR WORLD TRADE  
DP SALES MANUAL HOLDERS**

Attached to this letter is the new "WT Programming Supplement" tab for WT DP Sales Manual holders. This tab will separate the P9000 series of programming pages (WT only information) from the remaining programming section. It should be inserted in front of the P9000 series of programming pages.



**John Fahey**  
Director of DP Marketing

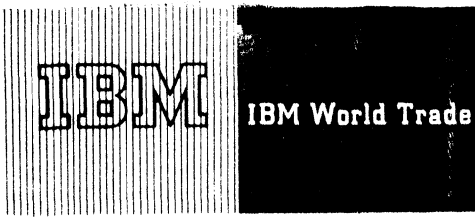
Attachments[2]:  
Release Date:  
Distribution:

[1] World Trade Programming Support Tab [2] P9011  
April 25, 1969  
All Areas

P69-55A







P 69-56

PROGRAM ANNOUNCEMENT

TEXT PROCESSOR - PAGINATION/360 (TYPE II)

PAGINATION/360, the fourth program of the System/360 Text Processor, will be available July 31, 1970. This program extends the scope of the System/360 Text Processor by providing extensive page makeup facilities. It includes the features of the three previously announced programs of the System/360 Text Processor, COMPOSITION/360, HYPHENATION/360, and EDIT/360, thereby creating a comprehensive text processing system. However, COMPOSITION/360 (360A-DP-08X) and HYPHENATION/360 (360A-DP-07X) will continue to be available as separate programs as will EDIT/360 when it is released October 31, 1969.

The following functions are included in the page makeup facilities of the PAGINATION/360 program:

- Placement of justified text according to a pre-defined page format
- Reservation of graphic cut areas based on page number or text reference point
- Incorporation of footnote material according to specified placement rules
- Inclusion of supplied page heading information
- Extraction and placement of content - dependent page heading information
- Selective re-paging of finished material
- Reordering of finished material through the reassignment of page numbers

The following functions provided in COMPOSITION/360, HYPHENATION/360, and EDIT/360 are now included with PAGINATION/360:

- Initial text entry
- Fast, accurate word division
- Justified output for final printing and editing purposes
- Input/output device independence
- Text and command listings for editing purposes
- On-line storage of text and commands

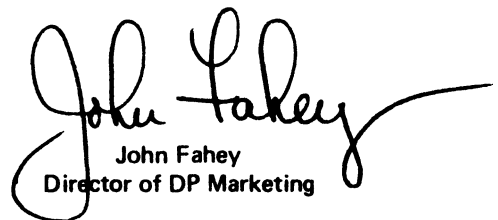
- Index listing of stored textual data
- Dumping of text for back-up and off-line storage
- Restoring of text for additional modifications
- Deletion of stored documents
- Document protection
- Modification to stored textual data by:
  - Adding, deleting, and replacing text and commands
  - Scan replacement of text
  - Moving, copying, and exchanging portions of text

This program, in conjunction with the required user written input/output programs, will form a complete text handling system for use by the printing community.

Newspapers, book publishers, magazine publishers, commercial printers, in-house publishers, and organizations involved in the transcription of textual information are potential users of this program. The use of the program will reduce tedious, time-consuming manual page makeup.

The availability of the Application Description Manual will be announced in a Publication Release Letter. Preliminary copies may be ordered from Printing and Publishing, Department 850, DPD HQ.

Details are on the reverse side.

  
 John Fahey  
 Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: April 24, 1969  
Distribution: All Areas

**Text Processor - PAGINATION/360:** This program, in conjunction with user-supplied input/output programs, provides a comprehensive text processing, editing and page makeup system. It contains the features of COMPOSITION/360 (360A-DP-08X), HYPHENATION/360 (360A-DP-07X) and EDIT/360 plus significant page makeup functions. Through the use of Text Processor - PAGINATION/360, the justification, subsequent modification and page composition of textual data can be performed.

**Description:** PAGINATION/360 will perform the operations associated with the page makeup process. These operations include the classification of input material by type (text, footnotes, graphics, etc.), the generation of page space requirements by input category, and the resolution and assignment of final page position based on user defined parameters and page dimensions. The program can selectively reset pages whose format or content has been changed, and several different forms of justified and page output are available to meet the needs of a broad range of potential users.

**Features:** The following functions are included in the page makeup facilities of the PAGINATION/360 program:

- . Placement of justified text according to a pre-defined page format
- . Reservation of graphic cut areas based on page number or text reference point
- . Incorporation of footnote material according to specified placement rules
- . Inclusion of supplied page heading information
- . Extraction and placement of content - dependent page heading information
- . Selective re-paging of finished material
- . Reordering of finished material through the reassignment of page numbers

The following functions provided in COMPOSITION/360, HYPHENATION/360, and EDIT/360 are now included with PAGINATION/360.

- . Initial text entry
- . Fast, accurate word division
- . Justified output for final printing and editing purposes
- . Input/output device independence
- . Text and command listings for editing purposes
- . On-line storage of text and commands
- . Index listing of stored textual data
- . Dumping of text for backup and off-line storage
- . Restoring of text for additional modifications
- . Deletion of stored documents
- . Document protection
- . Modification to stored textual data by:
  - Adding, deleting, and replacing text and commands
  - Scan replacement of text
  - Moving, copying, and exchanging portions of text

**Special Sales Information:** This program is designed to operate in either a multiprogramming or dedicated System/360 environment under control of the Disk Operating System (DOS/360). The use of the DOS Multiprogramming option allows for the simultaneous operation of the program and user programs thus providing maximum response to text-processing requests while taking advantage of low system activity for I/O modules and other data processing. If simultaneous operation is not desired, the program is capable of running in a batch job processing environment.

**Use:** This program consists of control and functional routines that accept input from a user-prepared disk-resident file. Input consists of textual material, text formatting commands, page formatting commands, and output requests. After receiving a request for page makeup, the program processes the text into justified lines and composed pages according to the graphic and stylistic requirements described by the user. This text is then written as generalized disk records which the user must retrieve and write on an appropriate system's device. The program, in addition to providing for the storage, justification, and modification of textual data, provides the user with composed pages constructed according to the specifications entered by page makeup commands. Potential users of the program are newspapers, book publishers, magazine publishers, commercial printers, in-house publishers, and organizations involved in the transcription of textual information.

**Customer Responsibilities:** This program is a generalized storage, editing, justification, and page composition system which the user must tailor to his specific configuration. For a minimum operational system, user programming responsibility encompasses:

#### Input Module

- . Select, initiate, and handle reading in of text, formatting commands, modification commands, and output requests from a specific system's input device(s) selected by the user.
- . Build a disk file in proper format for input to PAGINATION/360

#### Output Module

- . Retrieve generalized disk output records generated by the program
- . Interrogate the records and select the appropriate output devices selected by the user

- . Tailor the generalized output to the selected output device(s)
- . Output the device dependent records to the specific system's output device(s) selected by the user

In addition to the programming responsibilities the user must:

Gather data which controls the graphic and stylistic appearance of the text and pages and which defines the fonts used to justify the text. The data must then be loaded on a disk file in formats acceptable to PAGINATION/360 via utility programs supplied with this program.

**Special Programming Considerations:** When planning the installation of this program, sufficient lead time should be allowed before the customer needs to use the program to permit the writing of input and output modules tailoring the program to the user's requirements. The amount of time required will be determined by the level of programming expertise available to the user and by the complexity of the input and output modules required to accommodate the user's I/O devices. The use of Teleprocessing support features of DOS, such as Basic Telecommunication Access Method (BTAM) or Queued Telecommunications Access Method (QTAM), will require detailed knowledge of these facilities. The decision as to whether this program will be operating in a multiprogramming or batch job environment will determine the complexity of the installation and the input and output modules.

**Programming Systems:** PAGINATION/360 is written in System/360 Assembler Language and is designed to operate under control of the Disk Operating System (DOS) utilizing the multiprogramming option. In a multiprogramming environment, the program will operate in one program partition while the user's input/output modules will function in the next higher priority partition.

The minimum DOS system required for creating an operational system and executing the program must include:

- . Supervisor
- . Disk Sort/Merge
- . Assembler

The data management facilities of the Disk Operating System required by this program include:

- . System Control and Basic IOCS
- . Direct Access Method Macros
- . Consecutive Disk IOCS

**Minimum Machine Configuration:** The minimum machine configuration for PAGINATION/360 consists of the components listed below. The sales manual entries for COMPOSITION/360, HYPHENATION/360, and EDIT/360 should be consulted for required machine configurations when these programs are used separately.

System/360 Model G Processing Unit (128K bytes) with Decimal Arithmetic, Interval Timer, and one Selector Channel, 1052 Printer-Keyboard with CPU attachments, 2841 Control Unit and two 2311 Disk Storage Drives or 2314 Direct Access Storage Facility.\* These components are in addition to the DOS/360 requirements of one 2311 Disk Storage Drive or 2314 Direct Access Storage Facility,\* one card reader\*\*, one card punch\*\*, and one printer\*\*. Note that this minimum machine configuration does not include the text input/output subsystem devices necessary to implement an operational text processing system (e.g., magnetic tape, paper tape, data entry terminals, alphanumeric display units, etc.). It is the responsibility of the user to select these subsystem components and provide the necessary support programming based on his text processing system requirements.

The core resident requirement for the program is 76K bytes of storage. The remaining 52K bytes of storage are allocated by the user to the DOS Control Program and his own input and output modules. Any remaining space may be utilized as desired within normal DOS restrictions (e.g., a background partition program under DOS requires a minimum of 10K bytes).

\* On a mixed 2311-2314 system all text processor files must be on the same type DASD device.

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

**Program Support Material:** Application Description Manual (availability and form number will be announced in a PRL).

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

**Note to World Trade Readers.** This is a reprint of an IBM P-Letter and was mailed concurrently to USA and WT offices. The following changes should be applied to the text for WT use. [1] Programs announced as available have been shipped to WT Program Libraries. Programs may be ordered as indicated on pages 9013-9017, PGM. Sec. WT DP Sales Manual. [2] Advance copies of form numbered publications mentioned above have been shipped or will be, when available. Availability will be announced in the Weekly Publications Letter. [3] When a new version of a program is announced current users must order it; they will not receive it automatically. [4] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated. [5] References made to PID means the appropriate WT Program Library. [6] Any reference made to DPD Depts. (or Regions) as sources of information means the comparable WT Dept. (or corresponding organizational level). [7] Communications facilities may be required which are not offered in all WT countries. In case of doubt as to availability of suitable facilities, consult the country TP Coordinator. [8] References made to Engineering Changes required 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****IBM World Trade Data Processing**

P69-57

**PROGRAM ANNOUNCEMENT**

**1130 RPG COMPILER AND A DISK DATA FILE  
CONVERSION PROGRAM AVAILABLE  
AHEAD OF SCHEDULE**

The 1130 RPG Compiler System and the 1130 FORTRAN to RPG Data File Conversion Program (DFCNV) can now be ordered. This support is available substantially ahead of schedule ... it was scheduled originally for July 15, 1969.

With this new programming support, users have the facility to code for the 1130 in the well established RPG language ... coupled with capability to convert disk data files created through the use of FORTRAN and commercial subroutine programming into disk data files acceptable to programs created through the use of RPG.

Some new functions the 1130 RPG introduces are:

*Edit codes* to reduce the coding necessary to edit data.

*Chain* operation codes to allow greater flexibility in random references to disk files.

*Subroutines* to avoid repeated coding of similar calculation routines.

*EXCPT* operation code to permit records to be output at other fixed points in the RPG processing.

*New 1130 I/O Subroutines* to create and process indexed and blocked sequential files on the 2310.

See the inside pages for further information on the 1130 RPG and the DFCNV.

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

*John Fahey*  
John Fahey  
Director of DP Marketing

Release Date: April 29, 1969  
Distribution: All Areas

P69-57

## RPG COMPILER NOW AVAILABLE FOR 1130 SYSTEM

The 1130 RPG Compiler system, which can now be ordered (1130-RG-007), extends the commercial capabilities of the system and provides a language which is easy to learn and specifically oriented to commercial applications.

The 1130 RPG support consists of a problem-oriented symbolic language and compiler program. The user describes his problem by coding source statements on RPG coding forms which describe the input and output files, records and fields and the data processing which is to be performed. The compiler program converts these source statements to an object program with subroutine linkages which in turn is executed to accomplish the problem solution.

The 1130 RPG uses the same coding forms as System/360 RPG and provides similar functional capabilities. Language compatibility is dependent on the RPG functions supported, the devices supported by the system and the differing Control Program requirements. The 1130 RPG introduces new or improved functions as follows:

*Edit codes* to reduce the coding necessary to edit printed data. With the use of a one character edit code the programmer can edit most of his numeric fields along with date fields. For the cases where the edit codes are not sufficient edit words are still supported.

*CHAIN* operation code to allow greater flexibility in random references to disk files. By using the CHAIN op code during calculations, the programmer may retrieve a record from an index-sequential file and have it immediately ready for processing. With the use of CHAIN, the programmer can determine record-not-found conditions and provide routines to handle this instead of going to a halt condition. Multiple records can be retrieved from one file. A chained file may CHAIN to itself as well as CHAIN to other files. Through the use of CHAIN and relative record number, records may be randomly retrieved from sequential disk files.

*Subroutines* to avoid repeated coding of similar calculation routines. Often used calculation routines may be coded in RPG. The only limitation is that the RPG subroutine must be compiled with the program that uses it. The use of Assembler Language Coded Subroutines is also supported.

*EXCPT* operation code to permit records to be output at other than fixed points in the RPG processing. With the use of the EXCPT op code the programmer can produce output at any time and as often as desired during both detail and total calculations.

*New 1130 Input/Output Subroutines* are available with RPG to create and process indexed sequential and blocked sequential files on the 2310 disk storage devices or the single internal disk cartridge of the 1130 models 2 and 3. These subroutines may also be used by 1130 Assembler Language programs to create and process files. The subroutines accomplish these functions:

- . Create an indexed sequential file
- . Add records to an existing indexed sequential file
- . Sequentially process indexed sequential files, either within limits or the entire file
- . Randomly process individual records of indexed sequential files
- . Sequentially process input or output records of a blocked sequential file.
- . Randomly process input or update records in a blocked sequential file

*Cylinder Index in Core* - One sector of the cylinder index remains in core during the processing of an index sequential file. Thus, when randomly processing an index sequential file, greater throughput will normally be realized if the input is sorted first.

*Sequential Files* - A Sequential Disk File may be retrieved either sequentially or randomly (by use of relative record number). Random retrieval of a sequential file replaces the Direct Access Concept and allows for fast retrieval of files which make use of the relative record number technique.

*The LOCAL function* is supported. It is possible to overlay subroutines called by RPG. This function may reduce throughput to save on core.

*S/360 Appearance* - Through the use of RPG, the programmer no longer need be aware of the fact that the 1130 is a fixed word binary machine. The 1130 with the use of RPG appears to be a character oriented system. Like S/360, both zoned decimal and packed decimal may be used.

*Dual I/O Areas* - Dual I/O areas are supported for all card and printer devices. This allows the programmer to call for execution time options which afford, in most cases, increased throughput at the expense of core.

**Use** - The RPG program is a disk resident component of the Disk Monitor (Version 2), executed by including an RPG execute control card in the card reader. RPG source statements are read from the card reader, processed, and generated into an object program which is stored in disk working storage for subsequent execution, storing or punching by the user. Limitations include:

RPG can only process disk files created by an RPG program or converted using DFCNV.

When processing an index sequential file, both additions and updates to the file may not be made in the same program.

A disk file must be contained in a contiguous area on one pack. Split extents and multi-volume files are not supported.

The maximum key length in an index sequential file is 50 characters and the key must begin in the first position of the record.

**Performance**

**Compile time**

8K words of core storage required, additional storage will be used if available.

22-26 cylinders of disk storage as program residence for the 29 phases of the compiler and the 27 subroutines used by the compiler or the object programs.

Disk working storage sufficient to hold the generated object program. Working storage is also required for temporary storage of source statements when they exceed the number which can be contained in available core storage (approximately 200 source statements in an 8K system, 660 statements in a 16K system, 1,752 statements in a 32K system).

Compile time varies according to location of working storage, list option selected, number of source statements and device configuration. Assuming a 2.2u sec CPU and a 2501 Model A2, a Disk-to-Print program of 40 statements with no listings and working storage assigned to disk cartridge other than system residence will compile in approximately 20 seconds.

Approximate compile times for the 52-statement RPG sample program supplied with the program distribution (Accounts Receivable Register) are shown below. All times are in seconds and a 2.2 sec CPU is assumed.

List Device	Input Device			
	2501-A2	2501-A1	1442-7	1442-6
1403 M7	30	30	30	40
1403 M6	45	45	45	45
1132	95	95	95	95
Console Printer	500	500	500	500
No Listing	17	20	20	30

**Object Program Execution**

Storage is required according to the complexity of the program. The 40-statement Disk-to-Print program referenced above requires approximately 5,064 words of core storage. The 52-statement sample program supplied requires approximately 4,800 words of core storage.

Execution time depends primarily on the device configuration of the system. The Disk-to-Print program referenced above requires approximately 2 minutes to read, process and print 1,000 records (1,000 lines) from a blocked sequential disk file to a 1403 Printer Model 7.

Object program execution time will usually be substantially increased when the LOCAL option is employed - this saves core at the expense of throughput.

Object program execution time will usually be decreased when the dual I/O area options are used. These options, which gain speed at the expense of core, will be most useful on systems with 16 or 32K words of core storage.

**Minimum Systems Requirements**

**Compiler**

1131 CPU, model 2B or 3B (Minimum of 8K words of storage and single internal disk storage) ... 2501 or 1442 Card Reader ... 1132, 1403 or Console Printer

**Object Program Execution**

1131 CPU, model 2B or 3B (Minimum of 8K words of storage and single internal disk storage.) ... Input/Output devices as required by the program

**Devices supported**

1131 CPU, model 2B, 2C, 2D, 3B, 3C, 3D ... 1442 Punch, Reader/Punch, model 5, 6 or 7 ... 2501 Reader, model A1 or A2 ... 1132 Printer ... 1403 Printer, model 6 or 7 ... 2310 Disk, models B1 and B2 (up to 4 drives) ... The console printer will be supported as an output device both at compile and object execution time.

**Publications** -- IBM 1130 Disk Monitor System, Version 2, System Introduction, C26-3709-4 ... IBM 1130 Disk Monitor System, Version 2, Programming and Operator's Guide, C26-3717-4 ... IBM 1130 Subroutine Library, C26-5929-4, with TNL N33-8046. PLMs IBM 1130 RPG PLM, Y21-0010 ... IBM 1130 Disk Monitor Programming System, Version 2 PLM, Y26-3714-2 ... IBM 1130 RPL Promotional Brochure, 520-2135.

**Basic Program Package** ... Documentation -- Program Material List . Attachment to Users , IBM 1130 RPG Language (C21-5002-1).

Machine Readable -- RPG Compiler, RPG Subroutines and Sample Problem.

**Optional Program Package** ... Documentation -- Program Material List , Operating Instructions , Attachment No. 1 - Index.

Machine Readable -- Source Code.

**Ordering Information: Program Number 1130RG007**

	<u>Prg. Nbr.</u> <u>Ext.</u>	<u>Dist.</u> <u>Type</u>	<u>Medium</u> <u>Code</u>	<u>User Volume</u> <u>Requirement</u>
Basic	none	Cards	15	none
Optional	none	MT 9/800	28	01
	none	MT 9/1600	29	01

**Ordering Procedures ... See the DP Sales Activity Section of the Branch Office Manual.**

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

**1130 FORTRAN TO RPG DISK DATA FILE CONVERSION PROGRAM (DFCNV) AVAILABLE**

DFCNV is now available as part of the 1130 Disk Monitor System, Version 2 (1130-OS-005). It is automatically being distributed to users as a component of modification 5 of Disk Monitor.

DFCNV operates in a stacked job environment under control of the Disk Monitor System. It provides a conversion path from disk data files created by user programs programmed in FORTRAN (or FORTRAN with Commercial Subroutines) to disk data files accessible by RPG-compiled user programs. An interim stage of punched cards is an option where disk space is not available. The program allows selective field conversion and data rearrangement within the converted record.

Input of this program is always a disk data file record. Output is always another disk data file record (on the same or different drive) unless punched card output is specified.

The following field types are acceptable as input to this program:

- One word integers
- Two word integers
- Real numbers (either standard or extended precision)
- FORTRAN's A1 or A2 for integer data
- FORTRAN's A1, A2, A3 or A4 for standard precision real data
- FORTRAN's A1, A2, A3, A4, A5, or A6 for extended precision real data
- Commercial Subroutine's D1 and D4 Data format
- Commercial Subroutine's A3 data format

**Minimum System Requirements**

The program requires an 1130 disk system with at least 8K words of storage and a card reader. It supports an additional disk drive, 1130 card I/O devices, 1130

printers (including the console printer). It requires approximately one cylinder of library storage as a user program on disk. It creates an RPG sequential disk file as output.

**Publications**

1130 Disk Monitor, Version 2, Programming and Operator's Guide, C26-3717-4 ... 1130 Disk Monitor, Version 2, Program Logic Manual (PLM), Y26-3714-2.

Current users will automatically receive: Memo to users and attachment ... maintenance card deck ... and SRL C26-3717-4. The program is available only as part of Disk Monitor Version 2 (1130-OS-005).

For further information, contact your Basic Systems Center 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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**

IBM World Trade Data Processing

P69-58

**PROGRAM ANNOUNCEMENT****NEW RELEASE OF MODEL 20 TPS  
SUPPORTS SUBMODEL 5**

A new Model 20 Tape Programming System supporting both Submodels 2 and 5 is now available. This release is an extension of the existing Model 20 TPS and contains these new components:

- Core-Image Service Program
- Macro Service Program
- Card-Resident Control Programs
- Initial Program Loader for Tape Resident System
- Tape-Resident Control Programs

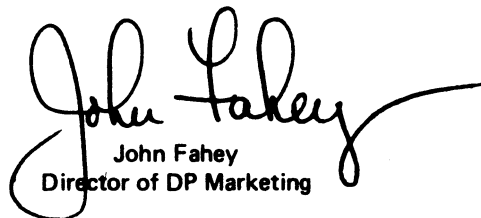
In addition, it includes modifications to current TPS programs to allow user-written programs to take advantage of the faster CPU speed, additional core storage, and the overlap capability.

This release replaces the Card- and Tape-Resident Control Programs 360U-CL-136 through 141.

With the exception of the TPS Monitor Program, the system programs do not use the overlap capability. The Assembler, RPG, and Sort/Merge programs use the 24K and 32K core storage capacities. Object programs generated by the TPS Assembler/IOCS and RPG fully support overlap and the 24K and 32K core storage sizes. (Model 20 Card Programming Support (CPS) does not use or support the 24K and 32K core sizes.)

To enable the TPS user to make optimum use of the overlap capability, a double buffering technique is available in IOCS and RPG, whereby a second I/O area may be specified, on a per-file basis, for tape files. (See appropriate SRL publication for details of new macro instructions and RPG control card and specification sheet entries supporting this option.)

The inside pages describe the new programs, modifications, program material, and ordering instructions.



**John Fahey**  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

Release Date: April 29, 1969  
Distribution: All Areas

P69-58

This Model 20 TPS which replaces the existing TPS now consists of the following programs at the level indicated:

		Version Modification
Basic Assembler (Tape) 4K	360U-AS-130	2/2
TPS Tape-to-Tape Utility Program	360U-UT-131	3/0
TPS Tape-to-Card Utility Program	360U-UT-132	3/0
TPS Card-to-Tape Utility Program	360U-UT-133	3/0
TPS Tape-to-Printer Utility Program	360U-UT-134	3/0
TPS Initialize-Tape Utility Program	360U-UT-135	2/2
TPS Load System Tape Program	360U-SL-142	3/0
TPS Copy System Tape Program	360U-SL-143	3/0
TPS Directory Service Program	360U-SL-144	3/0
TPS Core-Image Maintenance Program	360U-SL-145	3/0
TPS Macro Maintenance Program	360U-SL-146	3/0
TPS Linkage Editor Program	360U-SL-147	3/0
TPS Report Program Generator	360U-RG-148	3/0
TPS Assembler Program	360U-AS-149	3/0
TPS Sort/Merge Program	360U-SM-150	3/0
TPS Input/Output and Basic Monitor Macro Definitions	360U-IO-151	4/0
TPS Input/Output Macro Definitions for the IBM 1419/1259 Magnetic Character readers	360U-IO-152	4/0
Basic Assembler (Tape) 8K	360U-AS-153	1/1
TPS Input/Output Macro Definitions for the Binary Synchronous Communications Adapter	360U-CQ-154	1/1
TPS Core-Image Service Program	360U-SL-155	1/0
TPS Macro Service Program	360U-SL-156	1/0
TPS Card-Resident Control Programs	360U-CL-157	1/0
TPS Initial Program Loader for Tape-Resident System	360U-CL-158	1/0
TPS Tape-Resident Control Programs	360U-CL-159	1/0

### TPS Report Program Generator - 360U-RG-148

RPG supports the use of the Read/Compute, Write/Compute overlap feature.

Two input/output areas may be specified for each input/output tape file.

Nine matching fields may be specified (M1 - M9). The maximum number of files that may have matching fields is 6.

The sign test for numerical unpacked input fields in tape files may be omitted. This allows faster processing in those cases where the user is sure that his input data is correct.

For the Table Lookup (LOKUP) operations, a routine, depending on the size of the table is generated, if the table entries are in sequence. This leads to faster processing.

Various modifications of the compiler involve better performance in terms of core-storage requirements and execution time of the object program.

Also, by using the programming tips in the SRL, the RPG programmer can achieve better performance.

Input fields may be conditioned by any indicator (col. 63, 64). Only if the input field is a control or matching field, the indicator should be a record-resulting indicator.

Job control is placed on the System Tape between the assign and library phases. This allows faster processing in a batched-job environment when generation is terminated because of errors in the source deck.

In some cases, when it is not required for the object program, input fields are not assigned in core storage.

### TPS Card-Resident Control Programs, 360U-CL-157

### TPS Initial Program Loader for Tape-Resident System, 360U-CL-158

### TPS Tape-Resident Control Programs, 360U-CL-159

The Tape-Resident Monitor (360U-CL-140) and Job Control (360U-CL-141) programs have been combined into one program (360U-CL-159).

The Card-Resident IPL (360U-CL-136), Monitor (360U-CL-137) and Job Control (360U-CL-138) programs have been combined into one program (360U-CL-157).

The basic functions of these programs have not been changed.

The Monitor supports the 24K and 32K core-storage sizes.

The entries in the // CONFIG card have been simplified, e.g., the entry for a configuration of 16K is now 16.

This change has also been incorporated into the CMAINT and LDSYS programs.

Two new codes for 24K and 32K are used in the // CONFIG card to enter the appropriate core size into the communication region.



The Scheduler and the part of the Start I/O routine which support overlap are generated as part of the Monitor by the Job Control program at execution time.

The user specifies in a // EXEC RWC statement that his program is to be executed in the overlap mode.

The overlap Monitor requires approximately 2100 bytes of core storage.

The new entry REW in the FILES card allows the user to rewind a particular tape.

SYSIPT can now also be assigned to a card device when the EXEC LOADER function is used. This permits reading of programs in card format with the tape-resident system.

Programs 360U-CL-136 through 141 are withdrawn.

#### TPS Assembler Program, 360U-AS-149

The number of binary global set symbols has been increased from 128 to 256.

The rewind command to fetch the phase which reads the source cards has been replaced by several backspace-file commands. This leads to a better assembly performance.

#### TPS Macro Maintenance Program, 360U-SL-146

An additional phase in the MMAINT program permits users of machines with a core storage of 12K or more to process the macros without fetching the appropriate routines for every input record, and the Card Read Routine for this phase is overlapped. The processing time will decrease therefore by approximately 40%.

Records read on SYSIPT are checked for a correct sequence in cols. 73-80.

#### TPS Linkage Editor Program, 360U-SL-147

A new entry in the PHASE card permits the user to start his program relative to the end position of the overlap monitor.

#### TPS Core-Image Service Program, 360U-SL-155

#### TPS Macro Service Program, 360U-SL-156

These library service programs can be used to list and/or punch out one or more entries of the core-image library and the macro-library.

The punched output is a useful backup of the system and can be used to make changes in one of the libraries.

The punched output of CSERV is suitable as input for the LDSYS or CMAINT programs.

The punched output of MSERV is suitable as input for the MMAINT program.

Operation can only be performed under the tape-resident version of TPS.

#### System Design Considerations

Due to increased core storage requirements for the overlap monitor, and additional I/O areas to support the overlap capability, the system design for 8K Tape Systems, should be examined closely. Careful attention should be given to block lengths and the number of files to be supported.

The core estimates in the SRL publication IBM System/360 Model 20, Tape Programming System Performance Estimates: (C24-9010) may be used to estimate core storage requirements.

#### Minimum System Requirements

The minimum system requirements are the same as for the existing Model 20 programs, except for those programs designed to operate on a CPU with 4K bytes of core storage. Since a 2020 CPU Model 5 with 4K bytes of core storage is not available, these programs will run on a system with 8K bytes of core storage.

#### Basic Program Package

Documentation -- Program Material List ... Attachment I -- Operating Procedures C24-9009-3, Performance Estimates C24-9010-3, Basic Assembler Language C26-3602-4 and TNLs N33-8523, N33-8554, Basic Assembler/Tape Procedures C24-9011-1 and TNL N33-8553 Utility Programs C26-3808-3 and TNLs N33-8559, N33-8588 Control and Service Programs C24-9000-4, Report Program Generator C24-9001-4 and TNL N33-9052, Assembler Language C24-9002-4 Tape Sort/Merge Program C26-3804-2 and TNLs N33-8535, N33-8558, N33-8561, IOCS C24-9003-4, IOCS for 1419/1259 C33-6001-3 and TNL N33-9043, IOCS for Binary Synchronous Communications Adapter C33-4001-3.

Form numbers which have changed since previous releases are underlined.

Machine Readable -- Object code for all Tape Programming Systems Components (360U) available on one (1) functional volume. The bootstrap card has not been changed.

#### Optional Program Package

Documentation -- Optional Program Material List ... Attachment I.

Machine Readable -- Source code for all Tape Programming Systems Components (360U) available on one (1) functional volume.

Ordering Information -- See the reverse side.

**Ordering Information:** System Number 360U (Specify each component desired).

	<u>Prg. Nbr.</u> <u>Ext.</u>	<u>Distribution</u> <u>Type</u>	<u>Medium</u> <u>Code</u>	<u>User</u> <u>Requirement</u>	<u>Volume</u>
BASIC	none	MT 7DC/800	26		01
		MT 9/800	28		01
		MT 9/1600	29		01
OPTIONAL	none	MT 9/800	28		01
		MT 9/600	29		01

The new Tape Programming System supports Submodels 2 and 5. This package will not be automatically distributed to current Submodel 2 users. Current Users will receive a Preprinted Program Order Form and should use this form to order the new release. Customers requiring maintenance for a particular program have to order the package.

When reordering the package, current users will receive only the revised SRL publications and Technical Newsletters, not a complete replacement of the basic publications.

No maintenance tape will be supplied for this release.

There is no change in the distribution concept.

For additional ordering information see Branch Office Manual, DP Sales Activity section.

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

**Additional Program Material:** The following TNLs to the Program Logic Manual are available -- TNL Y33-9037 to Y33-8004-0, IBM System/360 Model 20, Input/Output Control System for Binary Synchronous Communications Adapter, PLM ... TNL Y33-8522 to Y33-9002-0, IBM System/360 Model 20, Tape Programming System, Assembler Language, PLM ... TNL Y33-8526 to Y33-9005-1, IBM System/360 Model 20, Disk and Tape Programming Systems, Tape Sort/Merge Program, PLM. Order from Mechanicsburg.

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 NEW VERSION OF COURSEWRITER III FOR SYSTEM/360 (TYPE II) IS AVAILABLE**

The availability today of Coursewriter III, Version 2 for System/360 (360A-UX-01X) provides an extended capability for instructional systems research, curriculum development and operational use of Computer Assisted Instruction (CAI). New applications can be found primarily in industry, military establishments and educational institutions. Version 1 of Coursewriter III, which was a limited distribution program, has been removed from PID.

The System/360, through IBM 1050 or 2740 terminals, interfaces directly with students, authors of curriculum materials, monitors who assist students, and supervisors of the CAI installation.

Coursewriter III, used in conjunction with the IBM Disk Operating System/360, provides System/360 users with the capability to implement CAI projects on System/360 Models 30, 40, 50, 65 or 75. The program is made up of four elements:

- . Coursewriter III Author Language
- . Coursewriter III Processor Program
- . Coursewriter III Input/Output Control Program
- . Coursewriter III Student Response Processor

*The Coursewriter III Author Language* enables authors to control computer presentation of course material and the processing of student responses. The contents and techniques of instruction can vary widely depending on the type of student, the learning environment and the performance objectives of the course.

*The Coursewriter III Processor Program* operates interpretively and contains control routines, author routines, student and monitor routines, and supervisor routines. Together, these routines direct System/360 to perform the specific tasks initiated by its users.

*The Coursewriter III Input/Output Control Program* maintains the current status of communication lines and their associated terminal stations.

*The Coursewriter III Student Response Processor* operates as a utility program and prints selected information from the Coursewriter III recording tape.

IBM has been actively examining the potential of Computer Assisted Instruction as an educational tool since 1958. Early developmental work was performed on the 1401/1440 Systems using Coursewriter I. IBM commitment to CAI was significantly increased through

the use of Coursewriter II on the 1500 Instructional System. Coursewriter III for System/360 continues IBM support for development and operational uses of CAI.

Coursewriter III is structurally similar to Coursewriter I and II. However, due to differences in terminal media capabilities and language features, courses developed for previous systems may be significantly different and not readily adaptable from one system to the other.

Coursewriter III is designed to serve both developmental and operational instruction. No claims should be made as to the proven effectiveness of CAI as a means of instruction or that it is more effective in terms of time, cost, or quality than alternate methods of instruction.

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

See the reverse side for detailed information.



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Attachment [1]:      Programming 9045  
 Cancel:                Sales Manager Letter # 232  
 Release Date:        April 29, 1969  
 Distribution:         All Areas

**Coursewriter III:** Coursewriter III is a program that can be used with System/360 Models 30, 40, 50, 65 or 75 to develop and present course materials for Computer Assisted Instruction (CAI)(360A-UX-01X).

**Description:** Coursewriter III can be used for educational research, curriculum development, and operational uses of Computer Assisted Instruction. Course materials may be designed for basic or supplemental instruction and can include pretests to assess student capabilities, drill and practice problems and laboratory simulations.

The System/360, through IBM 1050 or 2740 terminals, interfaces directly with students, authors of curriculum materials, monitors who assist students, and supervisors of the CAI installation.

Coursewriter III applications exist primarily in the following areas:

- . Teaching and learning research
- . School and university instruction
- . Industrial and military training

The Coursewriter III programming system is made up of four elements:

- . Coursewriter III Author Language
- . Coursewriter III Processor Program
- . Coursewriter III Input/Output Control Program
- . Coursewriter III Student Response Processor

These elements, under control of the Disk Operating System/360, store, present, and administer the author-prepared course materials.

Disk Operating System/360 is a disk-resident system composed of control programs and processing programs configured in the system generation of each individual installation. Multiprogramming is included as a facility which enables System/360 to process a background job and foreground jobs simultaneously. The Coursewriter III program will normally be run in the highest priority foreground partition. The Teleprocessing operations of DOS/360 manage the line communications with the IBM 1050 or 2740 terminal stations.

The Coursewriter III Author Language provides capability for the development and presentation of educational course materials through the terminals.

This special language enables authors to control computer presentation of course material and processing of student responses. The contents and techniques of instruction can vary widely depending on the type of student, the learning environment and the performance objectives of the course.

The Coursewriter III Processor Program operates interpretively and contains the control routines, author routines, student and monitor routines, and supervisor routines. Together, these routines direct System/360 to perform the specific tasks initiated by its users.

The Coursewriter III Input/Output Control Program maintains the current status of communication lines and their associated terminal stations.

A Coursewriter III Student Response Processor Utility Program is also included which extracts and prints from selected records from the Coursewriter III recording tape.

**Features:** Coursewriter III provides essential language, processor, and control program capabilities that enable:

- . Authors to write and correct course material.
- . Data to be collected on student responses for later analysis.
- . Authors or programmers to add new functional capabilities to the Coursewriter III language for unique requirements.
- . A macro capability to be used for easier development of repetitive course routines.
- . As many as 161 independent 1050 or 2740 terminals to be serviced when a System/360 Model 50, 65 or 75 is used.

**Special Sales Information:** IBM has been actively examining the potential of Computer Assisted Instruction as an educational tool since 1958. Early experimental work was performed on the 1401/1440 Systems using Coursewriter I. IBM commitment to CAI was significantly increased through the use of Coursewriter II on the 1500 Instructional System. The announcement of Coursewriter III for System/360 encourages and expands developmental and operational uses for CAI.

Coursewriter III is structurally similar to Coursewriter I and II. However, due to differences in terminal media capabilities and language features, courses developed for previous systems may be significantly different and not readily adaptable from one system to the other.

Coursewriter III is designed to serve both developmental and operational instruction. No claims should be made as to the proven effectiveness of CAI as a means of instruction or that it is more effective in terms of time, cost, or quality than alternate methods of instruction.

**Use:** IBM System/360 Models 30, 40, 50, 65 or 75 serve as central processing units for Coursewriter III instructional systems. The CPU can access course material from 2311 or 2314 Disk Storage Drives, interpret course statements, analyze student responses and control data flow between the CPU and system terminal stations.

Removable 1316 or 2316 Disk Packs store the course materials along with individual performance records and other administrative materials.

IBM 1050 and 2740 terminals are used by students to receive instruction and by course authors to input and modify instructional materials.

**Customer Responsibilities:** Customers are responsible for providing their own course materials. Currently, only limited amounts of course materials are available from publishers or other users. Therefore, customers should have an experienced staff to

develop and/or evaluate curriculum materials. The customer must make the necessary arrangements for communication lines and equipment. Knowledgeable individuals thoroughly trained in DOS/360 and Teleprocessing techniques are essential.

**Programming Systems:** Coursewriter III is written in DOS/360 Assembler language. It operates under the control of DOS/360 with the multiprogramming feature. The interval timer is required. The Direct Access Method is used for disk, Sequential Access Method for tape and BTAM for teleprocessing.

**Minimum Machine Configuration:** A 2030 Model F Processing Unit with Decimal Arithmetic (#3237), First Selector Channel (#6960), Storage Protection #7520), 1051 Attachment (#7915), and Interval Timer (#4760) ... 1051 Control Unit Model N1 with CPU attachment (#3130) ... 1052 Printer-Keyboard Model 8 ... 1442 Card Read Punch Model N1 ... 1443 Printer Model N1 with Selective Character Set (#6402) ... 2841 Disk Storage Control Model 1 ... two 2311 Disk Storage Drives Model 1 ... 2803 Tape Control Model 1 ... 2401 Magnetic Tape Unit Model 1 ... 2701 Data Adapter Unit Model 1 with Terminal Adapter (#4645) ... 2740 Communication Terminal with Record Checking (#6114).

As many as 161 IBM 1050 or 2740 terminals may be connected to a System/360 Model 50, 65, or 75 through remote dial-up or dedicated voice grade lines. A user selects one of three transmission control units according to the number of terminals to be serviced by the system. The 2701 Data Adapter Unit handles up to four lines while the 2702 Transmission Control Unit, with a speed extension feature (7387) can handle up to 31 half-duplex communication lines. One 2703 Transmission Control Unit can service up to 176 half-duplex lines simultaneously operating at speeds up to 180 bits per second.

The 2701 Data Adapter Unit requires special feature 4645; the 2702 requires special features 3233, 4615, and 7955; the 2703 requires special features 7505, 4878, 4619, 4696, and a 3205 (for every eight lines). Each 1051 Model 2 terminal must be equipped with feature 4408, each 1052 Model 2 with feature 1006, each 2740 Model 1 with feature 6114.

Either the tape or the printer is required as a system log device in the minimum configuration. To record student responses, and at the same time perform functions such as print course, course off/on, one tape must be added for each such function performed.

Coursewriter III will accommodate the following sample configurations along with a background job under control of DOS/360:

Model	Core Size	Coursewriter III Partition Size	Number of Terminals
30	64K	44K	15
40	128K	108K	62
40	256K	170K	124
50	256K	220K	161

The number of terminals a system can actually handle will depend upon the amount of core storage available and the response time required. The response time to the student will be dependent upon many factors, including:

- . System configuration.
- . The complexity of the courses being used.
- . The number of terminals in use.
- . The type of background job being run.
- . The number and type of buffer areas allocated at Coursewriter III system generation time.

**Basic Program Package:**

Documentation -- Application Directory ... Author's Guide (H20-0609) ... Supervisor's Guide (H20-0610) ... Student Monitor User's Guide (H20-0608). If only the form numbered manuals are required, order them from Mechanicsburg -- not from PID.

**Machine Readable** -- Program object deck and sample problem.

**Optional Program Package:**

**Machine Readable** -- Source program decks, assembly listing, and flowchart listings.

**Ordering Information:** Program Number 360AUX01X.

	Program Number Extension	Dist. Type	Med. Code	User Volume Requirement
Basic	None	DTR 9/800	28	None
		DTR 9/1600	29	None
Optional	None	MT 9/800	28	01
		MT 9/1600	28	01

Also see Branch Office Manual, DP Sales Activity section.

**Additional Program Support Material:** Application Description Manual (H20-0587)\* Obsolesces Z20-1872 ... Student/Monitor User's Reference Card (X20-1780)\* ... Author's Reference Card (X20-1781)\* ... Supervisor's Reference Card (X20-1782)\* ... Instruction Sheet Padded Form (X20-1750)\* ... System Programmers Guide (Y20-0372)\* ... Student Text for Authors (C20-1706)\*.

**Reference Material:** Computer Assisted Instruction at The Florida State University (K20-0208)\* ... Learning and the Computer (520-1967).

For further information contact your Regional Industry Representative responsible for consulting with your particular customer.

\*Available from Mechanicsburg Distribution Center.

**NEW RELEASE OF MODEL 20 DISK PROGRAMMING SYSTEM SUPPORTS SUBMODEL 5**

System/360 Model 20 Disk Programming System (DPS) supporting both Submodels 2 and 5 is now available. This new DPS system is an extension of existing Model 20 DPS and contains three new programs:

- The Disk Dump (DDUMP)
- The Copy System (COPSYS)
- The Macro Library Service (MSERV)

In addition, it includes significant version changes and modifications to various existing programs such as:

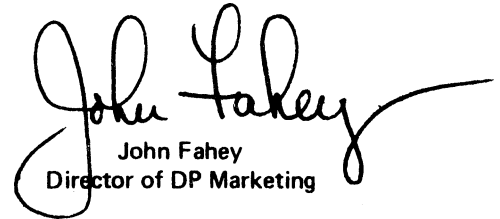
- Monitor Generation Macros
- Disk Backup and Restore
- I/O and Monitor Macro Definitions

The inside pages describe the new programs, versions, modifications, program material, and the recently announced ordering procedure.

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

## Monitor Generation Macro Definitions (360W-IO-200)

**Purpose ...** The user may generate a DPS Monitor either card resident (including Card IPL and Card Job Control), or disk resident (only DPS Monitor) tailored to the needs of his installation. The disk resident Standard Monitor is always contained on the System pack at delivery and if no additional functions are required, the user will not have to generate his own Monitor. Therefore, the Standard Monitor will be available as separate item together with the disk resident IPL and Job Control program (360W CL-171). The disk resident Standard Monitor can also be generated by the Monitor Generation Macro Definitions.

**Features ...** The generative Monitor concept includes the inquiry functions. Since the Monitor supports the read compute/write compute feature (RWC) of submodel 5, the PIOCS part supports the SEEK SEPARATION. (Scheduler for RWC = YES and QUEUES = YES). With the specification of QUEUES = NO a new scheduler version within the monitor can be generated which does not perform any queuing of requests. Therefore, it is about 200 bytes less in size than the normal scheduler.

**Use ...** Four Monitor generation macros are used to allow the generation of special monitor. These macros and a set of 19 inner macros are included in the macro library and may be deleted from an operational pack after system generation. The macros are written in the Model 20 TPS/DPS macro Assembler Language. Each installation employing printer keyboard inquiry or teleprocessing (BSCA), has to generate its own tailored monitor by means of an assembly using special macro instructions. In order to support the submodel 5 features (24K/32K main storage, up to 4 disk drives, and the RWC feature), a monitor generation is necessary using the appropriate macro operands.

Reassembly of the monitor is required whenever the user wants to add functions to the monitor, e.g., when the installation configuration changes.

## Inquiry Functions

- The user can interrupt main line programs to execute an inquiry program.
- When an inquiry is requested, main line programs are suspended only for the length of time the inquiry program is running.
- The user can write inquiry programs in RPG or Assembler/IOCS.
- Any number of different inquiry programs, up to the limits of the core image library can be stored on disk to be called when requested from the 2152.
- Use of the Printer-Keyboard as an input/output device is fully supported by both RPG and Assembler/IOCS.

## Inquiry Considerations

- Disk resident monitor with inquiry transient area is required for inquiry operations.
- Inquiry is not performed when any one of the following is in progress:
  - a. Another inquiry.
  - b. A program which was assembled or compiled under Model 20 DPS with explicit exclusion of inquiry.
  - c. CMAINT, AORGZ, Job Control, ATASGN, DDUMP, COPSYS, Sort/Merge (DISK).

All other system programs are interruptable.

- Access to files which are opened (and not closed) in the mainline program is restricted in inquiry programs.
- An inquiry program must be indicated as such during compilation or assembly.
- Programs including files with Standard tape labels cannot be generated as inquiry programs.
- The system pack must be on line during inquiry.
- If a MCR Device is in use in the main program, it should be stopped before an inquiry is initiated.
- Permanent labelblocks must be available or the job control information of the mainline program must contain the required job control information for temporary stored labelblocks.

**Performance Data ...** For performance data refer to the SRL publication IBM System/360 Model 20, Disk Programming System, Performance Estimates (C33-6003-2)

## System Requirements

*For systems with 2020 Processing Unit Model BC2-D2 or BC5-E5.*

**Minimum System Requirements ...** The minimum features required for generation and object program execution are the same as those required for Disk (12K) IOCS with the addition of the 2152 if desired: a 2020 Processing Unit Model BC2 or BC5 ... one card reading device (2501, Model A1 or A2, 2520 Model A1, 2560 Model A1) ... one 2311 Disk Storage Drive Model 11 or 12 ... a card punching device (1442 Model 5, 2520 Model A1 or A2 or A3, 2560 Model A1).

**Machine Features Supported ...** Up to 32,768 bytes of main storage ... card reading devices (2501 Model A1 or A2, 2520 Model A1, 2560 Model A1) ... card punching devices (1442 Model 5, 2520 Model A1 or A2 or A3, 2560 Model A1) ... 2415 Magnetic Tape Units, Models 1-6 (7- or 9-track) ... four 2311 Disk Storage Drives Models 11 or 12 ... one Printer (1403 Model 2, 7 or N1 or 2203 Model A1) ... one 2152 Printer-Keyboard ... one MCR (1419 or 1259) ... BSCA (Feature No. 2074).

*For systems with 2020 Processing Unit  
Model BC4-D4.*

**Minimum System Requirements ...** The minimum features required for generation and object program execution are the same as those required for Disk (12K) IOCS with the addition of the 2152 if desired. a 2020 Processing Unit Model BC4 ... a 2560 Model A2 MFCM ... one 2311 Disk Storage Drive Model 12 ... one 2203 Model A2 Printer ...

**Machine Feature Supported ...** Up to 16,384 bytes of main storage ... a 2560 Model A2 MFCM ... two 2311 Disk Storage Drives Model 12 ... one 2203 Model A2 Printer ... one 2152 Printer-Keyboard ... BSCA (Feature No. 2074).

**Disk Dump (DDUMP) (360W-UT-204)**

**Purpose ...** Can be used to display, on the printer, the contents of extents of a disk pack.

**Features ...** Several extents of several on-line disk packs can be displayed including the countfields of the displayed areas. The 2152 Printer-Keyboard can be used (1) as a logging device if DDUMP was called as inquiry program and (2) to interrupt a mainline program for a DDUMP program run.

**Use ...** The DDUMP program runs disk or card resident or as stand alone program. The disk drive(s) and extent(s) to be displayed are selected by appropriate setting of the Data and Register Switches on the CPU console.

**Copy System (COPSYS) (360W-SL-205)**

**Purpose ...** Can be used to copy the System file on the System disk pack onto another on-line disk pack.

**Use ...** Runs disk or card resident. Within the Job Control cards the user assigns the drive with the System disk pack to SYSIPT and the output drive to SYSOPT. Only the System File will be transferred to SYSOPT where the System label is inserted or updated in the VTOC.

**Macro Library Service (MSERV) (360W-SL-206)**

**Purpose ...** Allows the user to print or punch the contents of all or part of the macro library.

**Features ...** In addition to former facilities (output in internal format) the new MSERV program can punch and print macro definitions in source format.

**Use ...** By means of a control card the user can choose the format of the output.

```
// SOURCE .....Source format
// INTERN .....Internal format
                    (default value)
```

**Disk Backup and Restore (360W-SL-178)**

**Purpose ...** Used to copy the contents of a disk pack onto tape (for backup purpose or for distribution) and to restore it again onto a disk pack.

**Features ...** Consists of two parts, one to create a backup tape and one to retrieve the information from that tape.

To create the backup tape, part I

- (1) writes the contents of a disk pack (e.g., System Disk Pack) onto tape
- (2) writes card files onto tape if desired
- (3) punches a BOOTSTRAP card which is needed to initiate the retrieval of the information from tape

To retrieve the information from tape, part II

- (1) initializes a disk pack, if necessary
- (2) restores the disk image file from tape onto a disk pack
- (3) punches card files (e.g., IPL) and/or displays them on the printer

**Use ...** For creation of the BACKUP Tape the program reads control cards from SYSRDR. These cards indicate which extents of the disk pack are to be written onto tape. For retrieval of the information from the tape the program reads, from SYSRDR, the bootstrap card which was punched during creation of the backup tape. The hardware address of the input tape drive is inserted, by means of the Data Switches on the CPU console.

Job Control Cards are used to indicate the operations to be performed:

- (1) initialize a disk pack and/or
- (2) restore the disk image file, and/or
- (3) punch and/or print a card image file.

When more than one action is requested they must be in the above order. However, it is possible to initialize several disk packs and to write the disk-image file onto them in Stacked-Job Processing.

**Input/Output and Monitor Macro Definitions (360W-IO-182)**

**Additional features ...** Tape and sequential disk files can now be processed in two I/O areas to make use of the read-compute/write-compute feature (RWC) of the submodel 5.

Performance Data: Performance data for all programs may be found in the SRL Publication IBM System/360 Model 20 Disk Programming System, Performance Estimates (C33-6003-2).

Minimum System Requirements: All the preceding programs have the same minimum configuration as the Monitor Generation MACRO Definitions plus devices specified by the individual program being used.

Basic Program Package

Documentation -- Basic Material List ... System Generation and Maintenance, C33-6006-2 ... DPS, Operating Procedures, C33-6004-3 ... DPS, Control and Service Programs, C24-9006-4 ... DPS, Disk Utility Programs, C26-3810-3.

Machine Readable -- Object code for the following Disk Programming System Components (360W) are available on one disk pack\* or one magnetic tape\*\*. (V = Version, M = Modification Level)

		V	M
Assembler	360W-AS-181	3	0
Disk-Resident Control Program	CL-171	3	0
Binary Synchronous Communication Adapter Macro Definitions	CQ-201	2	0
Macro Definitions	IO-192	3	0
Macro Definitions for IBM 1419	IO-193	4	0
Monitor Generation Macro Definitions	IO-200	2	0
2152 Printer-Keyboard Macro Definitions	IO-202	2	0
Report Program Generator	RG-180	3	0
Load System Disk Program	SL-172	3	0
Library Allocation Organization Program	SL-173	3	0
Physical and Logical Unit Table Service Program	SL-174	3	0
Core-Image Maintenance Program	SL-175	4	0
Macro Maintenance Program	SL-176	3	0
Library Service Programs	SL-177	3	0
Distribution Package Retrieval Program	SL-178	3	0
Linkage Editor Program	SL-179	3	0
Copy System Program	SL-205	1	0
Macro Library Service Program	SL-206	1	0
Dist Sort/Merge	SM-182	4	0
Tape Sort/Merge Program	SM-194	3	0
Initialize Disk	UT-183	3	0
Alternate Track Assignment	UT-184	3	0
Clear Disk	UT-185	3	0
Disk-to-Disk	UT-186	3	0
Disk-to-Tape	UT-187	3	0
Tape-to-Disk	UT-188	3	0
Disk-to-Card	UT-189	3	0
Card-to-Printer	UT-190	3	0
Disk-to-Printer	UT-191	3	0
Tape-to-Tape Utility Program	UT-195	3	0
Tape-to-Card Utility Program	UT-196	3	0
Card-to-Tape Utility Program	UT-197	3	0
Tape-to-Printer Utility Program	UT-198	3	0
Initialize Tape Utility Program	UT-199	3	0
Disk Dump Program	UT-204	3	0

All components have changed with this release, those underlined are new.

When ordering at least one of the DPS programs, the package retrieval program 360W-SL-178 (contained only in distributions on magnetic tapes) will be forwarded.

\* - The 1316 Disk Pack returned from the program library contains a running system as well as the card-resident control programs and sample decks in card-image format to be punched. It is accompanied by three disk IPL cards to be used for initializing the loading of the running system, which is referred to as the DPS disk pack.

\*\* - Users with 2415 Magnetic Tape Units attached should request the programs on tape. The tape contains the distribution package retrieval program (360W-SL-178) to be activated by one bootstrap card distributed with the tape. The retrieval program initializes the first one hundred cylinders of a 1316 Disk Pack ... copies a running system as well as the card-resident programs and sample programs in card-image format on a 1316 Disk Pack ... punches the cards for initializing the loading of the DPS disk pack.

Current users will receive a preprinted Program Order Form and a letter announcing the availability of the Replacement DPS/360 System. Also provided will be ordering instructions for the replacement system. All orders are to be processed through the branch office using the preprinted order form.

Optional Program Package

Documentation -- Optional Program Material list: Attachment I.  
Machine Readable -- Source Code for all Tape Programming System Components (360W) available on one (1) functional volume.

Ordering Information: System Number 360W (specify each component desired).

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
		1316	52	01
Optional	none	MT 9/800	28	01
		MT 9/1600	29	01

For additional information, see Branch Office Manual, DP Sales Activity section.

If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.





P69-61

World Trade Data Processing

PROGRAM ANNOUNCEMENT

DOS/360 RELEASE 20 AVAILABLE

System Release 20 of DOS is now available. In addition to normal APAR maintenance in most components, it contains:

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
[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 new 1400-Series Compatibility Support Program for the S/360 Model 40.
Extensions to the Model 30 1400-Series Compatibility Support to include support for the S/360 Model 25.
Extensive enhancements in PL/I including:
New language features such as LIST-directed I/O, additional built-in functions, new key word abbreviations, and the INITIAL attribute.
New debugging facilities
Improved diagnostic capabilities,
Additional optimization of object code,
Extended options on the PROCESS card to allow for overriding of job control options.
Optional cross reference listing.
Multitasking support in BTAM and QTAM
COBOL support for the ISAM Core Index and track-area options.
Extensions to the Control Program including:
A new librarian program feature that allows copying to an existing library.
An interpretive dump program in addition to the hexadecimal dump.
New IOCS capabilities including:
Double buffering for Indexed Sequential files allowing the user to specify two I/O areas for load and sequential retrieval.
An additional option to allow a user label that was read and given to the user to be written back on the disk after updating when processing Sequential Disk and Direct Access input files.
An addition to the Group 1 and Group 3 Alternate Track Assign Utilities to allow for the replacement or insertion of one or more records via the SYSIPT device during the transfer of data to an alternate track.

John Fahey
John Fahey
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: April 30, 1969
Distribution: All Areas

**1401/1440/1460 EMULATOR PROGRAM UNDER  
DOS: COMPATIBILITY SUPPORT/40,  
360N-EU-485**

The 1401/1440/1460 Emulator Program provides the following:

Increased throughput, since 1400-series I/O is performed in S/360 mode and is overlapped with processing according to the channel configuration of the S/360.

100% stacked job processing. S/360 and 1400-series programs can be intermixed in a job stream.

1400-series disks need not be on the multiplexer channel and 1400-series tapes need not be on a single selector channel.

Compatibility support for 1311, 1301, and 1405 disk drives on the 2311 or 2314.

Exits to allow the user to add routines to simulate devices that are not supported by the Compatibility Feature and/or the Emulator Program.

Full advantage of the read-while-write capabilities of the 2804 Tape Control Unit.

Multiprogramming capability-teleprocessing, concurrent peripheral operations, or other user programs may be executed as foreground programs while executing a 1400-series program in the background. In addition the 1400 referenced card reader, card punch, and printer may be simulated on a magnetic tape unit, or a 2311 or 2314 disk.

Elimination of the Emulator Program deck for the Model 40. Sense-switch settings and I/O assignments, are accomplished through the standard DOS job control language and through emulator operator services.

Verification of volume serial numbers on disk packs may be performed on an optional basis.

Operator service functions initiated from the console keyboard providing a wide variety of capabilities, including a 1400 storage dump, the ability to change sense-switch assignments, tape and disk-drive logical assignments, the ability to alter 1400-series registers and storage and an option to automatically terminate 1400-series processing when an error is detected.

The ability to catalog, and fetch 1400-series programs from, the DOS core image library. Programs cataloged by Compatibility Support/30 cannot be fetched and executed by the Compatibility Support/40 and vice versa.

Automatic transition to DOS job control upon recognition of 1400-series EOJ halts.

1400-Series Compatibility Support for the Model 40 requires as a minimum the following configuration:

A S/360 Model 40 with at least 32,768 bytes of main storage. The minimum Engineering Change Level of the CPU is EC258757.

The 1401/1440 Compatibility Feature (4457) must be at Engineering Change Level EC258771

The 1401/1440/1460 DOS Compatibility Feature (4460). NOTE: When this feature is installed the stand-alone 1400-Series Emulator Program, 360C-EU-074 can no longer be run on the CPU.

The Decimal Arithmetic Feature (3237)

A 1052 printer keyboard and the 1052 adapter (7920)

1311 Disk Compatibility Feature (9710)

All minimum requirements for operation of the DOS/360

The File Scan Feature (4385) is supported in Move-mode only, but is not required.

**COMPATIBILITY SUPPORT/30, 360N-EU-484,  
TO SUPPORT MODEL 25**

The 1400-series Compatibility Support program for the Model 30 has been modified to allow its use on a Model 25 with the 1401/1440/1460 DOS Compatibility Feature (4470). Other features that are required on a Model 25 in order to run this Compatibility support are:

- the 1400 Series Compatibility Feature (4440)
- the Integrated 2311 Attachment Feature (4598)

The Minimum Engineering Change Levels for this Model 25 Compatibility Support are EC132844 on the 2025 CPU and EC128243 on the microprogram.

The 1401/1440/1460 DOS Compatibility Feature (4470) is mutually exclusive with the Floating Point Arithmetic Feature (4427) and the Integrated Communications Attachment Feature (4580).

The 1400 dump feature has been improved to display the 1400-address in 1400-series notation as well as in decimal notation. This enhancement increases the storage requirements for emulators requesting the dump feature (either ERROPNG=YES or OSDUMP=YES) by approximately 200 bytes.

**PL/I, 360N-PL-464**

DOS PL/I adds the following language enhancements:

List-directed transmission is supported for STREAM files. The LIST option permits the user to transmit data from or to an external medium (or string) without specifying a format for the data. The data transmission is directed by the data list and the data itself.

The INITIAL attribute enabling the user to specify, in a DECLARE statement, an initial constant value to be assigned to a data item when storage is allocated to it.

The built-in functions ADD, MULTIPLY, and DIVIDE are implemented. Each of these functions allows the

user to control the precision of the result which is returned to the point of invocation. The generated code for the ROUND-built-in function with fixed decimal arguments has been improved.

The following keyword abbreviations may be used: BIN, CHAR, DCL, DEC, DEF, ENV, EXT, INIT, PIC, PTR, PROC.

Two new debugging facilities are added to PL/I:

During the first execution of a special CALL statement, names given with the statement will be printed with their corresponding values. On further executions, a name and value will be printed only when the value has changed since the previous execution.

The tracing facility prints the label of a block on entry and gives a message to indicate the exit. Tracing can be enabled and disabled for a block by special CALL statements. For each executed GO TO statement, the label and address associated with the target statement are given; except in case the GO TO statement is in an on-unit, the on-condition and the address associated with the target statement are given.

Diagnostic capabilities of the PL/I compiler have been improved. The number of diagnostics concerning DECLARE statements are increased. DECLARE statement diagnostics have been expanded to contain the variable name associated with the error. Error recovery, especially with DECLARE statements, is aided by improved association of error codes with the errors. In addition, the text of diagnostic messages has been changed to clarify their meaning.

Improvements in generated coding in most cases, produce small savings in object time and in core requirements for generated codes.

New operands are supported in the PROCESS card to allow for the overriding of job control options. These new operands are:

- . OPT, NOPT - causes or suppresses the optimization of object code.
- . STMT, NOSTMT - causes or suppresses the inclusion of source statement numbers in diagnostic messages printed during the execution of the program.
- . XREF, NOXREF - causes or suppresses the printing of a cross reference listing on SYSLST.
- . LISTO, NOLISTO - causes or suppresses the listing of statement numbers together with their object time offsets. This option replaces the option performed by UPSI bit 5.

The PL/I compiler will no longer accept a structure expression as an IF statement keyword which it previously did. The PL/I Subset Reference Manual (C28-8202) p.54 states, "The expression following the IF keyword can be only an element expression; it cannot be an array or structure expression."

In qualified names the first identifier must be unique.

Programs which utilize the ROUND built-in function with fixed decimal data must be recompiled for Release 20.

#### **BASIC TELECOMMUNICATIONS ACCESS METHOD, 360N-CQ-469, QUEUED TELECOMMUNICATIONS ACCESS METHOD, 360N-CQ-470**

BTAM and QTAM now support the Multitasking facilities of the Disk Operating System.

BTAM may be any one of the twelve tasks defined at system generation time, but only one BTAM program may be placed in a partition. All of the system control functions can be used within the BTAM partition. A BTAM program may not be placed in the same partition with a QTAM message control program.

Because DTFBT has been changed, all BTAM programs must be reassembled for Release 20.

The telecommunications support under BTAM is also expanded to include "manual dial" support for binary synchronous communications.

This support provides a BTAM user the capability to use manual dial instead of auto dialing under the auto-dial feature and program control. A System/360 BTAM operator, upon user program request, can manually dial from the 360 to another binary synchronous device using either auto answer or manual answer.

The following binary synchronous configurations are supported:

System/360 to System/360 ... System/360 to IBM 2780 ... System/360 to IBM 1130 ... System/360 to System/360 Model 20.

QTAM multitasking support allows the message control program and multiple message processing programs to operate in the Foreground 1 partition. Multiple message processing programs are also supported in other partitions. Use of the DETACH function is restricted to the user written EOJAD and/or FLUSHAD routines. The message control program must have a higher priority than any message processing program operating in the system (i.e., the message control program must be the first subtask to be attached).

Because of changes in IJLQTSVC, the QTAM supervisor must be reassembled before running Release 20.

Because of changes in QTAM macros, all QTAM programs must be reassembled for Release 20.

#### **COBOL, 360N-CB-452**

Indexed Sequential File Management System support under COBOL has been extended with the addition of two new options.

With the Cylinder Index in Core option (APPLY CORE-

INDEX ...) the user may assign an area of main storage to hold the cylinder index. This area can be, but need not be, large enough to contain the whole index. This option can be used for both the random retrieve and the add function of ISAM.

Performance is improved because searching is done in core, rather than on the disk. Also, searching the master index is completely eliminated when the cylinder index is in core.

The Track-Area option allows the user to specify an I/O area that is a multiple size larger than one physical record up to the capacity of one full track. This larger I/O area gives the add function the ability to read/write multiple physical records during one revolution of the disk.

Recompilation of COBOL programs is necessary for Release 20 if:

1. The programs use tape files with standard labels, AND
2. The programs were compiled prior to Release 16.

The need for recompilation is made necessary by a change to \$\$BCBUSR which makes it possible to put the volume serial number and the volume sequence number in core in the expanded DTFMT of Version III of DOS/360.

#### SYSTEM CONTROL AND BASIC IOCS, 360N-CL-453

Librarian Improvements - The CORGZ program has been expanded to allow for copying to an existing system or private library. Phases, modules, and books can be selectively or completely transferred between libraries without the necessity of generating intermediate punched output for recataloging. This new facility results in less complicated job streams, less operator intervention, and shorter job execution time. System generation and maintenance is simplified since library routines can be copied from one release of the system to a subsequent release without punching and recataloging.

A new MERGE control statement requests transfer of data between libraries. The statement indicates the type of library (resident or private) involved and the direction in which the data will move. The MERGE statement has the format: MERGE from, to. The operand fields from and to represent the files from which and to which the data will be copied and are specified by one of the following:

- RES - A System Residence file on SYSRES
- NRS - A modified or duplicate system residence file on SYS002
- PRV - A private relocatable library (from SYS001 or to SYSRLB) and/or a private source statement library (from SYS000 or to SYSSLB).

The MERGE statement is followed by appropriate copy

statements (COPYC, COPYR, COPYS) that indicate the phases, modules, or books that are to be transferred. If a phase, module, or book being copied already exists in the library being updated, the old phase, module, or book will be deleted from the library being updated.

System Dump Improvements - The DOS dump modules have been enhanced to produce dump output in both hexadecimal and Binary Coded Decimal format. This addition of BCD output to the system dump program eliminates the need for time consuming programmer translation of hexadecimal printouts into a character representation.

These interpretive dump modules are resident in both the core image and relocatable libraries of the DOS distribution system. The non-interpretive (hexadecimal) dump is also supplied in the relocatable library. Users with the Universal Character Set installed on the printer assigned to SYSLST will notice a significant performance degradation when using the interpretive dump and may wish to linkage edit the non-interpretive dump (called by IJBDUMPS) into the Core Image library of their operational system. The interpretive dump can also be linkage edited from the relocatable library with the calling book, IJBDUMPT.

#### DIRECT ACCESS METHOD, 360N-IO-454, CONSECUTIVE DISK IOCS, 360N-IO-455, CONSECUTIVE TAPE IOCS, 360N-IO-456, INDEXED SEQUENTIAL FILE MANAGEMENT SYSTEM, 360N-IO-457

Error Option Improvements - Error options are extended to allow the user greater flexibility in attempting to recover upon detection of an I/O error. The following extensions are being provided for the Direct Access, Sequential Disk, Indexed Sequential, and Magnetic Tape IOCS methods by utilization of the new IOCS operand, ERREXT=YES:

Additional unrecoverable I/O errors are returned to the problem program. Formerly, only wrong length record errors and data checks were returned. These errors occur as a result of an incorrect data transfer. The additional errors that are now to be returned are primarily those occurring before any data transfer has taken place; for example, channel failure. The problem program is able to return to the module from an error routine with a choice of skipping the block of records, ignoring the error, or retrying the specific I/O operation that failed. Return to the module should then be by use of the new ERET macro.

Label Handling Modifications - An additional label processing option is now available for Direct Access and Sequential Disk input files. User DASD labels may now be read, updated, and written back on the disk. The LBRET macro previously permitted two operands (1 or 2). Support is now extended to include a LBRET 3 which will write the updated user label onto the disk.

ISAM Double Buffering - Overlapping of I/O with processing is now possible for both the load (creation) and sequential retrieval functions of Indexed Sequential.

The use of a second I/O area is an optional operand in both the DTFIS and the ISMOD.

#### **UTILITIES (GROUP 1), 360N-UT-461, UTILITIES (GROUP 3), 360N-UT-463**

Both the Group 1 and the Group 3 Alternate Track Assignment utilities have been enhanced to allow the replacement or insertion of one or more records during the transfer of data to the alternate track. The data to be inserted or replaced is entered via utility modifier statements from the reader. The data for the insertion or replacement records must be supplied in hexadecimal in the utility modifier statements.

The Clear Disk Utilities program has been changed as follows:

If a user supplies an UPSI card with the seventh bit on (indicating a 1400-Series Emulator pack), the extents will not be cleared unless the pack has been initialized as a 1400-series pack. Instead, an information-type message will be given and the job will terminate. This change has been made to prevent the possibility of unintentional destruction of DOS files on shared disk packs.

#### **MAINTENANCE**

In addition to the new features described above, DOS Release 20 contains normal maintenance in the following components:

- System Control and Basic IOCS, 360N-CL-453
- Consecutive Disk IOCS, 360N-IO-455
- Consecutive Tape IOCS, 360N-IO-456
- Indexed Sequential File Management System, 360N-IO-457
- Consecutive Paper Tape IOCS, 360N-IO-458
- Basic Telecommunications Access Method, 360N-CQ-469
- Queued Telecommunications Access Method, 360N-CQ-470
- Compiler I/O Modules, 360N-IO-476
- Magnetic Ink Character Reader IOCS, 360N-IO-477
- Optical Character Reader IOCS, 360N-IO-478
- Assembler, 360N-AS-465
- Assembler F, 360N-AS-466
- COBOL, 360N-CB-452
- COBOL DASD Macros, 360N-CB-468
- Basic FORTRAN IV, 360N-FO-451
- Report Program Generator, 360N-RG-460
- OLTEP, 360N-DN-481
- Utilities (Group 1), 360N-UT-461
- Utilities (Group 2), 360N-UT-462
- Disk Sort/Merge, 360N-SM-450
- Tape Sort/Merge, 360N-SM-400
- PL/I, 360N-PL-464
- Tape and Disk Sort/Merge, 360N-SM-483
- 1401/1440/1460 Compatibility Support for the System/360 Model 30, 360N-EU-484

#### **BASIC PROGRAM PACKAGE**

See page 6

#### **OPTIONAL PROGRAM PACKAGE, ORDERING INFORMATION, AND ADDITIONAL PROGRAM MATERIAL**

See page 7.

**BASIC PROGRAM PACKAGE**

Documentation -- Program Material List ... Attachment I - to the Basic Program Material List ... Attachment II - Special Instructions ... Attachment III - PTF Information.

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: System/360 Disk Operating System --

Operating Guide	<u>C24-5022-6</u>
Concepts and Facilities <u>TNL N24-5379</u>	C24-5030-5
Timing Estimates	<u>C24-5032-8</u>
Systems Generation and Maintenance	<u>C24-5033-7</u>
Data Management Concepts	<u>C24-3427-4</u>
System Control and System Service Programs	<u>C24-5036-4</u>
Supervisor and Input/Output Macros	<u>C24-5037-6</u>
Basic Telecommunications Access Method TNLs N30-5509, 5515, 5520, 5525, <u>5530</u>	C30-5001-5
Utility Macros Specifications	C24-5042-3
Vocabulary File Program for the 7772 Audio Response Unit	C27-6924-2
Utility Programs Specifications TNLs N28-2328, 2347	C24-3465-4
Tape Sort/Merge Program Specifications	<u>C24-3438-4</u>
Sort/Merge Program Specifications	<u>C24-3444-4</u>
COBOL DASD Macros (Note - C24-5039 and TNLs N24-5142, 5181 may be used in lieu of C24-5039-1)	C24-5039-1
Assembler Specifications TNLs N26-0582, 0587, 0589	C24-3414-5
COBOL Programmer's Guide TNL N28-0253	C24-5025-5
COBOL Language Specifications TNL N28-0245	C24-3433-5
FORTRAN IV Programmer's Guide	C24-5038-2
FORTRAN IV Language	C28-6629-1
Report Program Generator TNLs N21-5095, 5096, <u>5102</u> (Note - SRL C26-3570-4 plus TNLs N21-5095, 5055, 5077, 5086, 5090, 5096, and N24-5195 may be used in lieu of the SRL C26-3570-5 plus TNLs N21-5095, 5096, and <u>5102</u> )	C26-3570-5
Autotest Specifications N33-8589	C24-5062
QTAM Message Control Program TNLs N30-5522, <u>5527</u>	C30-5004-2
QTAM Processing Program Services TNLs N30-5523, <u>5528</u>	C30-5003-3
Basic PL/I Reference Manual TNLs N33-9015, 9031, 9040	<u>C28-8202-1</u>
PL/I Programmer's Guide	<u>C24-9005-4</u>
PL/I DASD Macros TNL N24-5301	C24-5059
On-Line Test Executive Program Specs and Operating Guide	C24-5066-2
S/360 Disk Operating System - FORTRAN IV Programmer's Guide	C28-6397-0
S/360 FORTRAN IV Language <u>N28-0251</u>	C28-6515-7
S/360 FORTRAN IV Library Sub-programs <u>N28-0588</u>	C28-6596-4
S/360 Disk Operating System - Tape and Disk Sort/Merge Program <u>N28-2388</u>	C28-6676-1
S/360 Disk Operating System - 1401/144Q/1460 Emulator Programs for System/360 Models 30 and 40	<u>C27-6940-2</u>

Form numbers which have changed since previous release are underlined.

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

Machine Readable -- Appropriate material is distributed for the 2311 Resident Systems by specifying Program Number Extension 2311; or 2314 Resident System by specifying Program Number Extension 2314. Components are:

Assembler D	360N-AS-465
Assembler F	AS-466
COBOL	CB-452
COBOL DASD Macros	CB-468
System Control and Basic IOCS	CI-453
Basic Telecommunications Access	CQ-469
Queued Telecommunications Access Method	CQ-470
Model 30 Emulator	EU-484
Basic FORTRAN IV	FO-451
FORTRAN IV	FO-479
Direct Access Method	IO-454
Consecutive Disk IOCS	IO-455
Consecutive Tape IOCS	IO-456
Indexed Sequential File Management	IO-457
Consecutive Paper Tape IOCS	IO-458
Compiler I/O Modules	IO-476
MICR IOCS	IO-477
Optical Character Reader IOCS	IO-478
FORTRAN N Library Subprogram	LM-480
On-line Test Executive	DN-481
PL/I	PL-464
Autotest	PL-459
Report Program Generator	RG-460
Tape Sort/Merge	SM-400
Disk Sort/Merge	SM-450
Tape/Disk Sort/Merge	SM-483
Supervisor - 2311 (6K)	SV-474
Supervisor - 2314 (8K)	SV-486
Group 1 Utilities	UT-461
Group 2 Utilities	UT-462
Group 3 Utilities	UT-463
MPS Utility Macros	UT-471
Vocabulary File Utility for 7772	UT-472
Model 40 Emulator	EU-485

The reels of magnetic tape are in 1316 Disk Pack restore from.

The DOS/360 data is preceded by an initialize 2311 Utility Program and a Restore Tape-to-Disk program.

For 2314 Residence -- DOS/360 (except Autotest) is distributed on two (2400') reels of magnetic tape. The 2314 Residence is not available on disk.

The System Control and Basic IOCS components and one of the two Supervisor components are required. To order these components, specify on the IBM Program Order for System/360 Operating System (120-1957 or 820-2004) -- System Control and Basic IOCS, 360N-CL-453, and one of the following supervisors:

2311 Resident (6K) Supervisor	360N-SV-474
2314 Resident (8K) Supervisor	360N-SV-486

OPTIONAL PROGRAM PACKAGE

Documentation - Appropriate material delivered.  
 Machine Readable - Source code delivered in the volumes indicated below. Specify the appropriate program number extension.

Program Number Extension	Program Component Name	Program Number
VOL1	System Control	360N-CL-453
VOL2	Assembler Assembler F	AS-465 AS-466
VOL3	Group 1 Utilities (Unit Record and Disk) Group 2 Utilities (Magnetic Tape) Group 3 Utilities (Data Cell) MPS Utilities	UT-461 UT-462 UT-463 UT-471
VOL4	COBOL	CB-452
VOL5	Tape and Disk Sort/Merge	SM-483
VOL6	Autotest Report Program Generator (RPG)	PT-459 RG-460
VOL7	BTAM Vocabulary File Utility QTAM	CQ-469 UT-472 CQ-470
VOL8	Basic PL/I	PL-464
VOL9	Basic IOCS Optical Character Readers IOCS Magnetic Character Reader IOCS	IO-453 IO-478 IO-477
VOL10	On-Line Test Executive Tape Sort/Merge Disk Sort/Merge	DN-481 SM-400 SM-450
VOL11	Basic FORTRAN IV FORTRAN IV FORTRAN IV Subroutines	FO-451 FO-479 LM-480
VOL12	PL/I (continuation)	PL-464

Each tape may also be restored to a 2316 Disk Pack on a 2314 Disk Drive. When using a 2316 Disk Pack, the user should designate the device as a 2311 for all operations involving the restoring and using of the Disk Pack. However, it should be initialized as a 2316.

The above distribution volumes do not contain source statements which are available in source format with the basic machine readable material for DOS/360. Therefore, there is no optional program material for the following DOS/360 components: Consecutive Disk IOCS, 360N-IO-455; Consecutive Tape IOCS, 360N-IO-456; Direct Access Method, 360N-IO-454; ISFMS, 360N-IO-457; Consecutive Paper Tape IOCS, 360N-IO-458; COBOL DASD Macros, 360N-CB-468; Model 30 Emulator 360N-EU-484; Model 40 Emulator 360N-EU-485.

Source statements for the Supervisor - 2311 (6K), 360N-SV-474, 2314 (8K) 360N-SV-486, and the Compiler Input/Output Macros 360N-IO-476, are not provided. See System/360 Disk Operating System, System Generation and Maintenance, C24-5033-6, for information on these modules.

See GI page 14.2 for complete information before ordering additional program support material.

ORDERING INFORMATION: System Number 360N (please specify each component desired).

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	2311	MT	9/800 28	02
		MT	9/1600 29	02
		MT	7DC/800 26	03
			1316 52	02
	2314	MT	9/800 28	02
		MT	9/1600 29	02
MT		7DC/800 26	02	
Optional	VOL1 thru VOL12	MT	9/800 28	01
		MT	9/1600 29	01
		MT	7DC/800 26	01

ADDITIONAL PROGRAM MATERIAL

Program Logic Manuals

DOS/360

System Control Introduction	Y24-5017-5
Librarian Maintenance and Service Linkage Editor	Y24-5079-1 Y24-5080, TNLs Y24-5113, Y24-5116
Supervisor and Transients IPL and Job Control	Y24-5084-2 Y24-5086, TNLs Y24,5109, Y24-5120
Logical IOCS Introduction	Y24-5020-4, TNL Y24-5121
Unit Record, Mag. Tape, and Compiler Files Sequential and Direct Access Files	Y24-5087-1, TNL Y24-5122
ISFMS	Y24-5088-2
BTAM	Y24-5089-2
QTAM	Y30-5001-3
Utilities	Y30-5002-3, TNL Y30-5529
Disk Sort/Merge	Y24-5023, TNL Y21-0002
Autotest	Y24-5021, TNL Y28-2291
Tape/Disk Sort/Merge	Y24-5027
FORTRAN IV	Y28-6645-1 Y28-6394

DOS/360 and TOS/360

OLTEP	Y24-5056-1, TNLs Y24-5090 Y24-5106
MPS Utilities	Y24-5045-2
Tape/Disk Sort/Merge	Y28-6645
Assembler	Y26-3642-1, TNLs Y26-8006, Y26-8007, Y26-8015
Assembler F	Y26-3716
RPG	Y26-3701-1, TNL Y21-0009
COBOL	Y24-5025-2, TNLs Y28-6390, Y28-6389, Y28-6396
FORTRAN IV	Y24-5032
Subroutine Library	Y33-9013, TNLs Y33-9027, Y33-9018, Y33-9032, Y33-9031
PL/I Volume 1	Y33-9010-2
PL/I Volume 2	Y33-9011-1
PL/I Volume 3	Y33-9012-1
IBM System/360 DOS 1401/1440/1460	
Emulator Program Compatibility Support 30	Y27-7164, TNL Y27-7185
IBM System/360 DOS 1401/1440/1460	
Emulator Program Compatibility Support 40	Y27-7165

Program Listings: The DOS/360 assembly listings and/or Macro (Source Statement Library) SSERV listings are available on Microfiche from IBM Corporation, Department 906, Highway 52 and Northwest 37th Street, Rochester, Minnesota 55901. Specify Group Code 2030 for the assembly listings or Group Code 2032 for the Macro SSERV listings. The assembly listings are equivalent to the output listings produced by assembling the symbolic modules as required for each of the DOS/360 Components listed below. The Macro SSERV listings are equivalent to a SSERV display on a printer of the Macros of the Components where applicable.





**IBM****IBM World Trade Data Processing**

Pg 62

**PROGRAM ANNOUNCEMENT****System/360 Model 65 with 2314, 2401s and 2501****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

FOR IBM INTERNAL USE ONLY

Release Date: April 30, 1969  
 Distribution: All Areas

**OS/360 SYSTEMS MANAGEMENT FACILITIES  
 AVAILABLE FOR MVT, MFT, M65  
 MULTIPROCESSING, RJE, AND GJP**

OS/360 Systems Management Facilities (SMF) for MVT will be available October 31, 1969. A second release of SMF, which will be available June 30, 1970, will include MFT, M65 Multiprocessing, Remote Job Entry, and Graphics Job Processing.

The announcement of M65 Multiprocessing, RJE and GJP is in addition to the support included in the SMF Intent Statement P68-161.

SMF provides "automatic data collection" by gathering and recording information associated with the use of the computing system. This information can be used to optimize and plan the orderly growth of OS/360 multiprogramming installations. It is provided as a SYSGEN option that can be used with existing OS/360 configurations. Its use is recommended as an installation aid in controlling the activity within OS/360 multiprogramming systems.

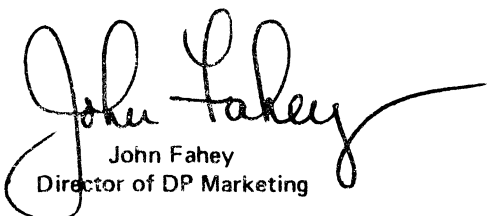
Automatic data collection is provided to record:

- . CPU time for processing programs
- . Start and stop times for jobs and steps
- . Start and stop times for readers and writers for each job
- . Region or partition size used by the program
- . Priority of the job when executed
- . Counts of SYSOUT, DD \*, and DD DATA logical records
- . Job, step and program names
- . Status of job and/or step at termination
- . Identification of devices allocated to each step and, for each device, a count of EXCP's issued for each data set processed using the devices
- . Maximum main storage required by each step
- . User exits at key points

Primary Control Program (PCP) and Conversational Remote Job Entry are not supported.

A new publication, Planning for System Management Facilities, will be available by May 30, 1969 for MVT. The planning information for the second release will be available in 4Q69.

For additional information see the reverse side.

  
 John Fahey  
 Director of DP Marketing

The OS/360 System Management Facilities (SMF) is available as an option of the MVT and MFT control programs. It gathers, formats, and records basic system and user information. Customers can use this information to determine the resources such as CPU, I/O and main storage used by each program.

#### Features

When SMF is selected at System Generation, the functions provided are:

- . "Automatic data collection" by gathering and recording information associated with the use of the computing system by each job and optionally, by each step. Items recorded are listed on the first page.
- . Exits in the Reader/Interpreter to edit the Job Control Language (JCL) card images for jobs entering the system and to augment the SMF collected data.
- . Exits in the Initiator/Terminator to validate and augment the SMF-collected data.
- . Exits when CPU time or WAIT time limits are exceeded.
- . SMF provides a system routine, invoked by a macro, to record information on the system management data set in standard record format, with overlapped recording. The routine uses a tape or a DASD (of the same device type used for System Residence).
- . SMF options can be specified from a system data set at IPL-time and can be overridden by the operator.

#### Performance

If SMF is not chosen at System Generation, there will be no degradation of the system.

The performance degradation is dependent upon the installation's use of the following:

- . SMF buffer size
- . Device used for the SMF data set
- . SMF data set allocation size
- . Number of jobs run per day
- . Execution time of the installation exit routines

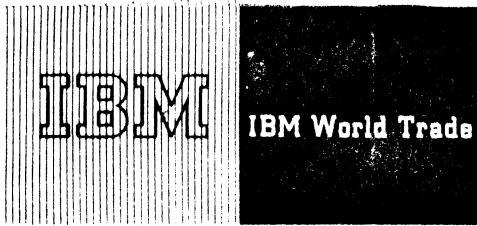
The performance degradation to the system when all System Management Facilities are functioning can be less than 5%.

#### Storage Requirements

A fixed amount of main storage is required when SMF is chosen at System Generation. In MVT a maximum of 1500 bytes is added to the main resident storage. In MFT, 6150 bytes including BSAM is required. Supervisor Queue Space is used for data collection tables, new job queue entries, and the user defined SMF buffer. The variable storage depends on the number of active jobs in the system and the SMF options chosen.

#### Other Facts

Job Control Language used with current jobs will continue to operate correctly. An additional optional parameter will be added to the JOB statement to allow a user to limit job time. BSAM will be used for recording SMF data.



P69-63

PROGRAM ANNOUNCEMENT

VERSION 2 OF RETAIL IMPACT STAPLE SYSTEM UNDER DOS/360 IS AVAILABLE (TYPE II)

Version 2 of Retail IMPACT Staple System under DOS (360A-DR-09X) is available. With Version 2, the complete facilities of the Retail IMPACT Staple System under DOS are available.

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
[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.

The system uses an advanced forecasting subsystem which employs adaptive forecasting, probability, and statistical science with appropriate decision rules to forecast demand, determine order points, and order up to levels. An advanced control subsystem is tailored to the needs of the retail industry. It may be used to create purchase orders, control merchandise on order, and monitor the performance of the system in terms of inventory and level of service.

This system also allows the simulation of a number of management policies, as well as for projecting demand and inventory behavior over an extended period, resulting from a particular policy or set of policies. With this feature, management will be able to establish a priority for departments to be implemented and obtain an estimate of the system's potential in these departments. The system reduces the difficulty of maintaining large inventories in multiple locations, typical of today's retail industry.

Optimum use of the system is achieved through the capture of daily sales information at the point of sale. For the few classes of merchandise or departments where the direct capture of daily SKU data is not feasible, the user may wish to employ stock counts to derive periodic sales.

Appropriate documentation is provided so that the Retail IMPACT Staple System can be used in conjunction with the customer's own stock counting procedures. Certain types of output, such as daily service measurement, cannot be provided if stock counting is employed.

See the following pages for details.

Handwritten signature of John Fahey, Director of DP Marketing

Note: Current users will receive a pre-printed Program Order Form and a letter announcing the availability of Version 2. The letter instructs them to order the new version through the branch office using this pre-printed Program Order Form. Complete ordering instructions are in the letter to users.

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

**Retail IMPACT System:** Retail IMPACT is an inventory management system designed specifically for the retail industry. Two independent systems are provided: one applies to staple merchandise and the other, to fashion. These two systems enable retail management to increase the opportunity for sales by increasing the availability of merchandise and at the same time to maintain a balanced inventory consistent with management objectives. They also provide for effective highlighting of items requiring action to maximize the profit potential in a department.

OS Fashion System	(360A-DR-04X)
OS Staple System (control, forecasting, and simulation subsystems)	(360A-DR-05X)
DOS Fashion System	(360A-DR-08X)
DOS Staple System (control subsystem 65K plus forecasting and simulation 131K subsystems).	(360A-DR-09X)

**Staple System:**

**Description** -- This system uses an advanced forecasting subsystem which employs adaptive forecasting, probability, and statistical science with appropriate decision rules to forecast demand, determine order points, and order up to levels. An advanced control subsystem is tailored to the needs of the retail industry. It may be used to create purchase orders, control merchandise on order, and monitor the performance of the system in terms of inventory and level of service.

This system also allows the simulation of a number of management policies, as well as for projecting demand and inventory behavior over an extended period, resulting from a particular policy or set of policies. With this feature, management will be able to establish a priority for departments to be implemented and obtain an estimate of the system's potential in these departments. The system reduces the difficulty of maintaining large inventories in multiple locations, typical of today's retail industry.

Optimum use of the system is achieved through the capture of daily sales information at the point of sale. For those few classes of merchandise or departments where the direct capture of daily SKU data is not feasible, the user may wish to employ stock counts to derive periodic sales.

Appropriate documentation is provided so that the Retail IMPACT Staple System can be used in conjunction with the customer's own stock counting procedures. Certain types of output, such as daily service measurement, cannot be provided if stock counting is employed.

**Features** -- A comprehensive Control Subsystem which provides for automatic reorder of forecasted items and items with ordering parameters specified by store personnel ... purchase order creation ... vendor lead time control by signaling irregular lead time ... generalized transactions which allow for file updating for a group of items with only one input transaction for size, color, style, store and/or department ... source records available for additional reports ... continual system monitoring of service level, inventory investment and sales ... store performance report for each department.

An advanced Forecasting System which employs adaptive forecasting, probability and statistical analysis for determining trends and seasonal behavior, editing "bad" data, and handling high and low volume items ... initial forecasting "models" developed automatically from sales history, buyer estimates, or by adapting models taken from similar items ... automatic adjustment of forecasting models, weighted according to currentness of data ... signaling of significant variation in item sales patterns ... scientifically determined decision rules based on forecasted sales, desired level of service, pack size, etc. ... forecast model by item, or by group of items.

An advanced Simulation Subsystem which determines the effects of alternative management policies -- before and after installation ... the ability to anticipate the inventory status at specified intervals during the year, number and value of purchase orders placed, and expected level of service ... analysis of vendor lead times including averages, deviations, correlations with quantity ordered and season.

**Fashion System:**

**Description** -- This system uses probability science to help the buyer respond quickly to styles performing significantly above or below other similar styles, based on their profitability. The maintenance of complete records at the style level eliminates tedious and sometimes inaccurate updating of manual records. Appropriate documentation and interfaces are provided for the user who wishes to maintain size and color detail. The combination of exception reporting and automatic maintenance of style records reduces the amount of clerical effort on the part of the buyer and his staff and enables them to achieve optimum results by concentrating on the creative aspects of fashion merchandising.

**Features** -- Automatic recommendations for reorder, return, markdown, and transfers based on sophisticated statistical techniques which accurately analyze the potential of a style early in its life ... the basic yardsticks used for making recommendations are dynamic class (or group) standards, based on profitability (which reflects the interaction of turnover and markup) to respond to the overall seasonal changes ... automatic maintenance of files to replace manual records at the style level ... status inquiry at buyer request (vendor status, etc.) ... various merchandise management reports can be created from the style master records (aging, stock status, etc.).

Use: These systems are designed to initialize and operate a complete department. The library programs do both the initializing and regular operation. The user does not have to write any programs to use the systems. However, the user may desire to modify the operational programs in the Staple Control Subsystem and Fashion reporting areas and will probably write additional programs to extend the reports produced by the system.

Additionally the user may wish to employ the Forecasting Subsystem to aid in developing seasonal forecasts as inputs to the planning process at the department and class level. Appropriate documentation and interfaces to the Forecasting Subsystem are provided.

**Customer Responsibilities:**

1. **Program Requirements** -- In general, the Staple and Fashion Systems are complete systems. However, since some users may have unique requirements in the way of significant transactions or reports, etc., some minor additions to the Retail IMPACT programs may be necessary. The following represent areas where user-generated programs may be required.

Changes to existing outputs of Retail IMPACT -- as an example, a basic purchase order is provided as part of the Staple System. If the user desires his own purchase order format, a program must be provided by the user to print in his format from the files that contain the Retail IMPACT purchase order information.

Additional merchandise management reports -- the user may wish to produce merchandise management reports beyond the basic reports provided by the Staple and Fashion Systems. The use of report generation techniques make the production of many additional reports feasible.

Any modification to the standard Retail IMPACT programs -- as an example, any transaction unique to a particular user -- would require a user-written modification. Users of the Fashion System who desire complete Black Book replacement or maintenance of summary records, users of the Staple System who desire stock count inputs, and users who wish to employ the Forecasting Subsystem to aid in developing planning forecasts will need to write required I/O and file maintenance routines. Appropriate flow charts and interfaces to the Staple Control Subsystem, the Forecasting Subsystem and the Fashion System are provided.

2. **Staffing** -- Capable user personnel are requisite to positive results. Needed to insure Retail IMPACT System benefits are Top Management Representative ... Project Director ... Systems Analyst ... System/360 Programmers ... Administrative.

The description of their qualifications and duties is detailed in the Application Description Manual (E20-0188).

3. **Education** -- Knowledge of the Retail IMPACT System, its implementation requirements, and its operation are achieved by user personnel through attendance in the following schools -- 2½-day Retail IMPACT System - Fashion ... 5-day Retail IMPACT System - Staple. Class dates listed in the Consolidated Industry Education Schedule.
4. **Evaluation** -- A very important responsibility of the customer is to establish a base for comparison of Retail IMPACT System results with those of the system replaced. Sales, inventory, and level of service represent minimum parameters for comparison. Further information regarding the need to evaluate and techniques for evaluation is detailed in the Application Description Manual (E20-0188).

**Programming Systems:** The programs are designed to operate under the OS/360, PL/I Level F; or DOS/360, PL/I.

**Minimum System/360 Configuration for Fashion under OS/360, PL/I and Staple Control Subsystem under DOS/360, PL/I:** System/360 Model F30 (64K) with Decimal Arithmetic (#3237), Floating Point Arithmetic (#4427), 1051 Attachment (#7915) ... 1051 Control Unit Model N1 with CPU Attachment (#3130) ... 1052 Printer-Keyboard Model 8 ... 1442 Card Read Punch Model N1 ... 1443 Printer Model N1 with Selective Character Set (#6402) and the 63 Character Set Type Bar (#9089)\* ... 24 Additional Print Positions (#5558) ... 2841 Storage Control ... 2311 Disk Units (4 required) ... 2415 Tape Unit Model 1.\*\*

**Minimum System/360 Configuration for Fashion under DOS/360, PL/I:** System/360 Model ED25 (48K) with Floating Point Arithmetic (#4427), 1052 Printer-Keyboard Model 7, Selector Channel (#6960), 1442 Card Read Punch Model N1, 1443 Printer Model N1 with Selective Character Set (#6402) and 63 Character Set Type Bar (#9089)\* ... 24 Additional Print Positions (#5558), Integrated 2311 Attachment (#4598), 2311 Disk Storage Drives (4 required),\*\* 2415 Magnetic Tape Unit and Control Model 1.

**Minimum System/360 Configuration for Staple under OS/360, PL/I and Staple Forecasting and Simulation Subsystems under DOS/360, PL/I:** System/360 Model G40 (128K) with Decimal Arithmetic (#3237), Floating Point Arithmetic (#4427), 1052 Adapter (#7920) ... 1052 Printer-Keyboard Model 7 ... 1442 Card Read Punch Model N1 ... 1443 Printer Model N1 with Selective Character Set (#6402) and the 63 Character Set Type Bar (#9089)\* ... 24 Additional Print Positions (#5558) ... 2841 Storage Control ... 2311 Disk Units (4 required) ... 2415 Tape Unit Model 1.

\*Users ordering a 1403 Printer will require a QN2 or PN2 print train.

\*\*Users operating the Fashion System who do not intend to implement "Black Book" replacement, summary files, or the Staple System will require one less disk or tape.

Basic Program Package for Fashion System/OS (360ADR04X):

Documentation -- Application Directory ... Program Description Manual (H20-0480, N20-1084) ... Operations Manual (H20-0481).

Machine Readable -- Source code, narrative, and sample problem.

Optional Program Package for (360ADR04X):

Machine Readable -- Flow charts.

Ordering Information: Program number 360A-DR-04X

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
BASIC	none	DTR	7DC/800 26	none
		DTR	9/800 28	none
		DTR	9/1600 29	none
OPTIONAL	none	DTR	7DC/800 26	none
		DTR	9/800 28	none
		DTR	9/1600 29	none

Also see Branch Office Manual, DP Sales Activity section.

Basic Program Package for Staple System/OS (360ADR05X):

Documentation -- Application Directory ... Program Description Manual (H20-0591) ... Operations Manual (H20-0593).

Machine Readable -- Source code, narrative, sample problem, and flow charts.

Ordering Information: Program number 360A-DR-05X

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
BASIC	none	MT	7DC/800 26	01
		MT	9/800 28	01
		MT	9/1600 29	01

Also see Branch Office Manual, DP Sales Activity section.

Basic Program Package for Fashion System/DOS (360ADR08X):

Documentation -- Application Directory ... Program Description Manual (H20-0540) ... Operations Manual (H20-0541).

Machine Readable -- Source code, narrative, and sample problem.

Optional Program Package for (360A-DR-08X):

Machine Readable -- Flow charts.

Ordering Information: Program number 360A-DR-08X

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
BASIC	none	DTR	7DC/800 26	none
		DTR	9/800 28	none
		DTR	9/1600 29	none
OPTIONAL	none	DTR	7DC/800 26	none
		DTR	9/800 28	none
		DTR	9/1600 29	none

Also see Branch Office Manual, DP Sales Activity section.

Basic Program Package for Staple System/DOS (360A-DR-09X):

Documentation -- Application Directory ... Program Description Manual (H20-0599-1) ... Operations Manual (H20-0592-1).

Machine Readable -- Source code, narrative, sample problem, and flow charts.

Ordering Information: Program number 360ADR09X

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
BASIC	none	MT	7DC/800 26	01
		MT	9/800 28	01
		MT	9/1600 29	01

Also see Branch Office Manual, DP Sales Activity section.

Additional Program Support Material: Application Description Manual (E20-0188).

If only the form numbered manuals that are a part of the Basic Program Package are required, order from Mechanicsburg -- not from PID. All other form numbered manuals are available only from Mechanicsburg.

For further information contact your Industry Marketing - Distribution Representative.





IBM World Trade Data Processing

P69-64

## PROGRAM ANNOUNCEMENT

OS/360 USER CAN READ DATA FROM  
2495 TAPE CARTRIDGE READER**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 new data set utility program will provide the OS/360 user with the ability to read data from a 2495 Tape Cartridge Reader, optionally edit the data, and output data to any I/O device supported by QSAM (direct access, magnetic tape, printer).

**Availability** - June 30, 1970.

**Features are:**

- Reads input created on either an IBM 50 Magnetic Data Inscrber or an IBM Magnetic Tape SELECTRIC Typewriter (MTST).
- Performs special processing of IBM 50 input including automatic field duplication from one record to the next, right-adjustment of left zero fields, organizing the character string input into logical records, and analyzing errors to maintain data integrity.
- Performs translation of MTST code to EBCDIC.
- Provides optional user exits for handling error conditions and writing user labels.
- Provides an optional user exit permitting the user to gain temporary control to process each logical record and/or perform his own output.

**System Configuration**

The IEBTCRIN data set utility operates with PCP, MFT and MVT. The 2495 is an asymmetric (single path) device connected to one CPU and channel. Under MVT Model 65 Multiprocessing, the loss of the CPU or channel causes the loss of the device. A minimum of 14K (excluding user exit routines and I/O buffers), is required for the utility.

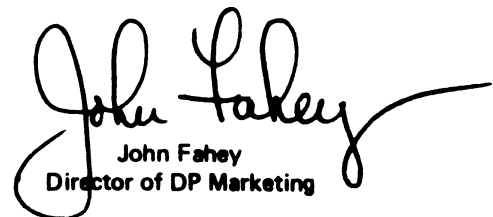
**Reference Publication**

IBM's System/360 Operating System: Planning for IEBTCRIN Data Set Utility Program (C21-5003).

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: April 30, 1969  
Distribution: All Areas



John Fahey  
Director of DP Marketing







**1130 RIGID FRAME SELECTION PROGRAM (TYPE II) MAY BE ORDERED**

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

The 1130 Rigid Frame Selection Program (1130-EC-09X) may be ordered through the regular procedures outlined in the Branch Office Manual, DP Sales Activity Section. Shipment from PID will begin May 8, 1969.

RFSP had been announced in P69-27 as available under Controlled Release.

RFSP operates under the Problem Language ANalyzer (PLAN) (1130-CX-25X), which must be ordered separately.

RFSP will assist customers who must design two or three hinged rigid frames and other simpler, structural elements.

It contains design logic for steel, laminated wood, and reinforced concrete structural elements and will be of direct interest to manufacturers of prefabricated buildings and to consulting engineers and architects.

The principal value of RFSP is its ability to produce a least weight design, within the range of material sizes available to a particular user. Designs produced by RFSP will satisfy one user-specified set of loading and stress specifications for generalized, non-symmetric frames. In the more typical case, symmetric frames can be designed for three standardized load cases at one time.

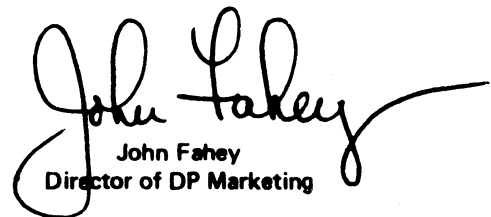
RFSP uses building profile dimensions, applied loads, and the user's choice of material dimensions to produce a design.

The System Manuals - Flowcharts and Narratives (Y20-0316) and Compile Listings (Y20-0366) will be available from Mechanicsburg May 8, 1969.

The DOS/360 and OS/360 RFSP programs will be available November 30, 1969 (see P68-172).

**Action Required ...** Notify all customers affected by these changes immediately.

Details are on the reverse side.



John Fahey  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Cancels: Memorandum to DP Branch Managers B69-19  
 Release Date: April 30, 1969  
 Distribution: All Areas

**Rigid Frame Selection Program:** RFSP assists customers who must design two or three hinged rigid frames and other simpler, structural elements. (1130-EC-09X)

It contains design logic for steel, laminated wood, and reinforced concrete structural elements. RFSP is of direct interest to manufacturers of prefabricated buildings and to consulting engineers and architects.

The principal value of the program is its ability to produce a least weight design, within the range of material sizes available to a particular user. Designs produced by RFSP will satisfy one user-specified set of loading and stress specifications, for generalized, non-symmetric frames. In the more typical case, symmetric frames can be designed for three standardized load cases at one time.

RFSP uses building profile dimensions, applied loads, and the user's choice of material dimensions to produce a design.

**Features:**

- . Has direct design of least-weight two- and three-hinged rigid frames by automatic, successive approximation, using outside building dimensions and applied loads.
- . Allows several inventory policies to be evaluated for a product line, by creating section economy tables from various inventory specifications.
- . Provides a convenient language for users to specify design and inventory variables.
- . Calculates dimensions and weights of frames and their components.
- . Allows for the design of members of other structures, given the results of a structural analysis.
- . Supports interactive operation via the 1130 keyboard.

**Use:** Inventory calculations are made once for each different choice of material types and sizes. Design calculations are made for each different structure, for each different combination of dead, live, and wind load.

Users describe inventory choices, external structure dimensions, and applied loads in a convenient free form language, implemented under the Problem Language ANalyzer (PLAN). These statements determine which inventory, analysis, input and output programs are executed. Results are printed for inspection and may be stored on disk for modification and recalculation.

**Customer Responsibilities:** Users should be familiar with the theory and practice of rigid frame design. At least one person in the installation should be familiar with the use of 1130 PLAN (1130-CX-25X) and the 1130 Disk Monitor System. No programming or classroom training is required unless the customer decides to alter or extend the system. In this case, he must be familiar with FORTRAN, PLAN, and structural engineering.

**Special Sales Information:** If this program is to be used regularly, the volume of output is such that an 1132 or 1403 Printer should be available. One to six additional disk cartridges are also advised, depending on the frequency with which the various design options are used.

**Programming System:** The RFSP/1130 is written in FORTRAN and operates under the 1130 Problem Language ANalyzer (PLAN) which, in turn, operates under the 1130 Disk Monitor Version 2.

**Minimum 1130 System Configuration:** 8K 1131 Model 2B Central Processing Unit ... 1442 Card Read Punch Model 6 ... one 2315 Disk Cartridge (see Special Sales Information).

**Expanded 1130 Systems:** RFSP throughput and usefulness are increased by the addition of a line printer, larger main storage, a 2310 Model B1 or B2, and faster main storage, in that order of importance. 1131 Models 2C, 2D, 3B, 3C, and 3D may be used. All combinations of 1130 line printers, card readers, and card punches supported by FORTRAN can be used for RFSP.

**Basic Program Package:**

Documentation -- Application Directory ... Program Description and Operations Manual (H20-0580). If only the form numbered manual is required, order from Mechanicsburg -- not from PID.

Machine Readable -- Object decks and sample problem.

**Optional Program Package:**

Machine Readable -- Source statements.

Ordering Information: Program number 1130EC09X.

	<u>PROGRAM NUMBER EXTENSION</u>	<u>DISTRIBUTION MEDIUM TYPE</u>	<u>CODE</u>	<u>USER VOLUME REQUIREMENT</u>
BASIC	none	2315	58	01
OPTIONAL	none	DTR 9/800 DTR 9/1600	28 29	none none

Also see Branch Office Manual, DP Sales Activity section.

**Additional Program Support Material:** Application Description Manual (H20-0598)\*... Systems Manual Flowcharts and Narratives (Y20-0316)\*... Compiled Listings (Y20-0366)\*.

**Reference Material:** PLAN Application Description Manual (H20-0490-1)\* ... PLAN Program Description Manual (H20-0594)\* ... 1130 PLAN Operations Manual (H20-0595)\*.

\*Available from Mechanicsburg.

The Systems Manual Flowcharts and Narratives (Y20-0316) and Compiled Listings (Y20-0366) will be available from Mechanicsburg May 8, 1969.

**MECHANISM DESIGN SYSTEM - KINEMATICS  
FOR 1130, OS/360, AND DOS/360  
MAY BE ORDERED (TYPE II)****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

Published by DP Sales Publishing Services, WTHQ

Three versions of Mechanism Design System - Kinematics (MDS-Kinematics) (1130-EM-03X, 360A-EM-04X and 360A-EM-05X) may be ordered. Shipments will begin the week ending May 16, 1969.

MDS-Kinematics assists the mechanical engineer and machine designer in analyzing linkage mechanisms. The program input provided by the engineer describes the linkage configuration, processing requirements for position and motion, and output desired in user oriented language. Plots of calculated results are available with the optional plotting equipment for the 1130.

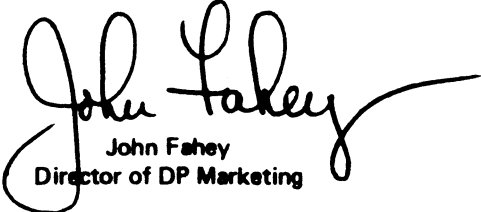
Users of the 1130 Disk Monitor Version 2 should order MDS-Kinematics (1130-EM-03X). Note that this version of MDS operates under 1130 PLAN (1130-CX-25X), which must be ordered separately.

Users of OS/360 should order MDS-Kinematics using program number 360A-EM-04X. Note that this version of MDS operates under OS/360 PLAN (360A-CX-27L), which must be ordered separately. OS/360 PLAN is distributed under Controlled Release as described in P69-24.

Users of DOS/360 should order MDS-Kinematics using program number 360A-EM-05X. Note that this version of MDS operates under DOS/360 PLAN (360A-CX-26L) which must be ordered separately. DOS/360 PLAN is distributed under Controlled Release as described in P69-24.

Program documentation may be ordered from Mechanicsburg May 16, 1969.

See the reverse side for more details.



John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: April 30, 1969  
Distribution: All Areas

**Mechanism Design System - Kinematics (MDS - Kinematics):** The kinematic analysis application program provides the capability to analyze a wide variety of two- and three-dimensional linkages. The program is available for the 1130 (1130-EM-03X), OS/360 (360A-EM-04X) and DOS/360 (360A-EM-05X).

**Description:** This program offers the mechanical engineer and mechanism designer a powerful, easy-to-use program for analyzing linkages. The system performs the kinematic analysis of two- and three-dimensional, simple or complex mechanical linkage systems which may use any combination of six lower pair types. The linkage mechanism to be analyzed is described in a simple problem descriptive language. From the user's description and metric data about the linkage, the programs will solve the position and motion of the linkage. The format of computed results varies depending on the system configuration. Tabulations of selected results are possible on 1130 systems with two or more disk drives and on both the DOS/360 and OS/360 versions. Plotted results are available only on the 1130 - two disk systems equipped with a 1627 plotter.

Linkage modifications are made readily with the problem language command set furnished with the system. Mathematical procedures are coded in FORTRAN and use vector analysis, which permits direct solution.

**Features:**

- Provides for the kinematic analysis of a wide variety of two- and three-dimensional linkages.
- Provides position of bodies in a mechanism defined by a number of points.
- Provides a command structure which is easy for the engineer to learn and use.
- Enables the engineer to quickly ascertain the effect of physical linkage modifications.
- The printed or plotted output is flexible.

**Customer Responsibilities:** A basic knowledge of kinematic analysis is required. The user must be capable of choosing the correct linkage configuration and dimensions which result in a feasible mechanism. The system will provide diagnostics for mechanisms which are under or over constrained. In addition, mechanisms which have a limited range of operation will cause a message to be generated if the input causes the mechanism to move into this range. The customer must be able to interpret the results furnished to properly evaluate his design. The customer must modify the program if further results are required which cannot be generated by the system.

**Use:** The Mechanism Design System - Kinematics is controlled by user written commands that describe the problem to be processed. A digital model of the linkage is created from the user's description in disk working storage. This digital model forms the basis for the processing phases which are position and motion solution. Motion solution includes velocity and acceleration analysis. Plots of selected calculated results are available with the optional plotting equipment for the 1130.

**Programming Systems:**

**1130 MDS-Kinematics** - is written in basic FORTRAN IV and assembly language and operates under the IBM 1130 Problem Language Analyzer (PLAN) (1130-CX-25X) which in turn operates under the 1130 Disk Monitor System, Version 2.

**OS MDS-Kinematics** - is written in basic FORTRAN IV and operates under the IBM Problem Language Analyzer (PLAN) (360A-CX-27L) for OS/360 which in turn operates under the Operating System/360. OS/360 PLAN is under Controlled Release.

**DOS MDS-Kinematics** - is written in basic FORTRAN IV and operates under the IBM Problem Language Analyzer (PLAN) (360A-CX-26L) for DOS/360 which in turn operates under the Disk Operating System/360. DOS/360 is under Controlled Release.

**Machine Configurations for Compilation and Execution:**

**Minimum 1130 System Configurations:** An 1131 Model 2C ... 1442 Card Read Punch Model 6 ... one 2315 Disk Cartridge.

**1130 Optional System Configurations:** 1627 Plotter ... 1133 Multiplex Control Enclosure with Channel Multiplexer (\*1865) ... 2310 Disk Storage Model 81 ... one 2315 Disk Cartridge. The additional disk drive is required for the results tabulation feature.

**1130 Expanded Systems Configurations:** Added speed and throughput may be achieved with a higher speed CPU (1131 Model 3C with 2.2 microsecond cycle time) and selected combinations (made up of the 1132 or 1403 Printer, 1442 Card Read Punch Model 7, 1442 Card Punch Model 5, and 2501 Card Reader).

**Minimum OS/360 Configuration:** System/360 models supported by OS/360. In addition to the S/360 main and auxiliary storage required by OS/360 and the DAS used by PLAN, MDS-Kinematics requires a 100K minimum partition or region and three million bytes of Direct Access Storage.

**Minimum DOS Configuration:** System/360 models supported by DOS/360, all features required by DOS/360, plus Floating Point Arithmetic (\*4427). In addition to main and auxiliary storage required by DOS/360 and the DAS required by PLAN, MDS-Kinematics requires a 56K background partition and one additional 2311 Disk Storage Drive.

**Basic Program Package for 1130 MDS-Kinematics:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0617)\* ... Operations Manual (H20-0618).\*

**Machine Readable** -- Object code, MDS phrases and sample problem.

**Optional Program Package:**

**Machine Readable** -- Source code.

**Order Information:** Program Number 1130EM03X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirements
Basic	none	2315	58	01
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

**Basic Program Package for OS/360 MDS-Kinematics:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0617)\* ... Operations Manual (H20-0618).\*

**Machine Readable** -- Object code, MDS phrases and sample problem.

**Optional Program Package:**

**Machine Readable** --

**Option 1** - Source code is specified by using Program Number Extension - OPT1.

**Option 2** - Compilation listings are specified by using Program Number Extension - OPT2.

**Ordering Information:** Program Number 360AEM04X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirements
Basic	none	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
Optional	OPT1	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
	OPT2	MT 9/800	28	02
		MT 9/1600	29	02

**Basic Program Package for DOS/360 MDS - Kinematics:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0617)\* ... Operations Manual (H20-0618).\*

**Machine Readable** -- Object code, MDS phrases and sample problem.

**Optional Program Package:**

**Machine Readable** --

**Option 1** - Source code is specified by using Program Number Extension - OPT1.

**Option 2** - Compilation listings are specified by using Program Number Extension - OPT2.

**Ordering Information:** Program Number 360AEM05X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirements
Basic	none	MT 7DC/800	26	none
		MT 9/800	28	none
		MT 9/1600	29	none
		1316	52	01
Optional	OPT1	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
	OPT2	MT 9/800	28	01
		MT 9/1600	29	01

Also, see Branch Office Manual, DP Sales Activity section.

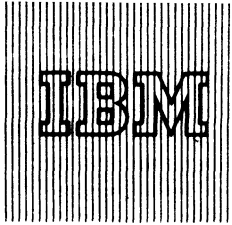
**Additional Program Support Material:** Application Description Manual (H20-0493-1)\*\* ... 1130, OS/360 and DOS/360 System Manual (narratives and flowcharts (Y20-0396)\*\* ... 1130 MDS-Kinematics System Manual (compilation listings) (Y20-0397)).\*\*

**Reference Material:** PLAN Application Description Manual (H20-0490)\*\* ... PLAN Program Description Manual (H20-0594)\*\* ... PLAN Operations Manual: 1130 PLAN (H20-0595),\*\* OS PLAN (H20-0596),\*\* DOS PLAN (H20-0597).\*\*

\* If only the form numbered manuals are required, order from Mechanicsburg ... not from PID.

\*\*Available from the Mechanicsburg Distribution Center.

For further information contact your Regional Manufacturing Industry Marketing Representative.



**PLAN GRAPHICS SUPPORT (TYPE II PROGRAM) MAY BE ORDERED FOR OS/360**

PLAN Graphics Support Program (360A-CX-34X) may be ordered; shipments will begin the week ending May 16, 1969.

This program requires the use of OS/360 PLAN (360A-CX-27L), which must be ordered separately. OS/360 PLAN is distributed under Controlled Release as described in P69-24.

PLAN Graphics Support provides a high level language for implementing and operating an interactive graphic interface between user-written application programs and the IBM 2250.

1130 PLAN Graphics Support Program will be available May 31, 1969 as announced in P68-101.

Program documentation may be ordered from Mechanicsburg May 16, 1969.

See the reverse side for more details.

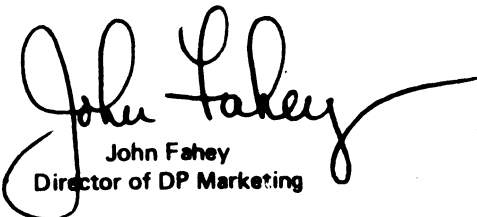
**NEW MINIMUM CONFIGURATION FOR VSP/360 (TYPE II)**

Effective immediately, the minimum system configuration for the Vehicle Scheduling Program (360A-ST-06X) includes a System/360 Model E25 (32K). The configuration now reads:

A System/360 Model E25 (32K) ... 1052 Model 7 and two 2311 Disk Storage Drives (which include provision for DOS/360 disk residence) with attached features ... 1442 Card Read Punch Model N1 ... 1443 Printer Model N1 and Multiplexer Channel.

Also, a TNL (N20-1917) to the Application Description Manual (H20-0464) is available from Mechanicsburg.

Pages P360A.33 and P360A.34 in the programming section of the sales manual will be updated shortly to reflect these changes and include the new PID ordering procedure.

  
John Fahey  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: April 30, 1969  
Distribution: All Areas

**PLAN Graphics Support:** PLAN Graphics Support (360A-CX-34X) reduces the time and effort required to implement an interface between the IBM 2250 Display Unit and application programs. In most instances, an application programmer may use this system to avoid coding the graphics portion of an application at a FORTRAN or Assembly Language level. The user may rapidly integrate graphic capability into existing and new applications. This system is an excellent tool to minimize learning and programming time when extending existing applications to include graphic capability. PLAN OS/360 (Problem Language Analyzer) a Type II program (360A-CX-27L) under Controlled Release, must be used by PLAN Graphics Support. The user has access to all the functional capability in PLAN.

**Description:** A user-oriented statement language has been implemented into PLAN Graphics Support via the facilities provided by PLAN for language definition. By means of the free format language statements and the more conventional fixed format specification cards, the application programmer can specify the graphic displays and interrupt (Light Pen and Keyboards) controls desired by the application user. During the execution of the application, the display console operator may dynamically control his application utilizing the interactive graphic capability of the IBM 2250.

The facilities available to the application user (display console operator via PLAN Graphics Support include:

- . **Graphic Output**  
Data lists from the application program may be displayed in any desired format using points, characters, lines, arcs, circles, etc. -- the format and control options being previously defined via language statements and/or specification cards.
- . **Graphic Input**  
Data may be created or modified at the console and passed to an application program via the Alphameric Keyboard and/or the Light Pen.
- . **Monitoring and Controlling the Application**  
The console user dynamically controls subsequent displays and application functions to be executed via the Light Pen, Programmed Function Keyboard, and the Alphameric Keyboard.

PLAN Graphics Support can be used for nearly any application which can utilize the capability of the IBM 2250. In particular, this includes Engineering Analysis, Petroleum Exploration and Production, Management Information Systems, and Data Reduction.

**Features:**

- . Easy-to-use statements for specification of graphic displays and interrupt control.
- . Includes routines for lines, arcs, circles, and conic sections.
- . Special "high speed displays" may be defined giving rapid response to operator interrupts.
- . Built-in default options simplify programming.
- . Since PLAN Graphics Support and PLAN coexist, all the PLAN functions and facilities are available to the user.
- . Open-ended system allows user to build additional capability into PLAN Graphics Support.
- . Special routines facilitate maintenance of graphic data.

**Special Sales Information:** PLAN Graphics Support is useful in any application based on FORTRAN and operating under OS/360. This system supports only locally attached models 1 and 3 of the IBM 2250. The customer's total effort in graphic programming should be significantly reduced. In many cases this system alone will be sufficient graphics support for an application.

**Use:** The application programmer describes the graphic displays and interrupt controls by means of statements and specification cards. These cards are normally used as input to an off-line operation during application development to create and store the files necessary to generate the graphic displays. During the running of the application, the previously stored files are used to generate the displays on the IBM 2250, allowing the console user to communicate with his application. Information flowing between PLAN Graphics Support and the application program pass through FORTRAN COMMON managed by PLAN.

**Customer Responsibilities:** PLAN Graphics Support minimizes the requirement for detailed knowledge of graphics. A knowledge of PLAN is useful but is not a prerequisite when working at the PLAN Graphics Support level. The application programmer must be familiar with FORTRAN conventions and the use of COMMON.

**Note:** The application user (the console operator) does not have to understand PLAN Graphics Support. Only a familiarity with the use of Light Pen, Programmed Function Keyboard, and Alphameric Keyboard is required.

**Programming Systems:** PLAN Graphics Support is programmed primarily in FORTRAN IV with some Assembler code and requires the following system environments: IBM System/360 Operating System ... IBM System/360 Operating System - Graphic Program Services for FORTRAN IV, Type I (360S-LM-537) ... S/360 PLAN (Problem Language Analyzer) Type II under Controlled Release (360A-CX-27L).

**Minimum System/360 Configuration:** S/360 Central Processing Unit Model 40 with a minimum of 128K memory (90K application partition required) ... One 2250 Model 1 with Absolute Vectors and Control (#1002), Alphameric Keyboard (#1245), Buffer (#1498 or 1499), Character Generator (#1880), Light Pen (#4785), Programmed Function Keyboard (#5855) ... OR ... One 2250 Model 3 with Alphameric Keyboard (#1245), Programmed Function Keyboard (#5855) and 2840 Display Control Model 2. In addition to the I/O units and intermediate storage for OS/360, PLAN, and Graphic Program Services for FORTRAN IV, storage on a DASD is

required for:

- (a) PLAN Graphics Support Load Modules -- approximately 350K bytes.
- (b) Panels - approximately 2K bytes per panel (based on an average of 25 specifications per panel).

Access to a tape drive will be necessary for system generation and maintenance.

Refer to the Program Description Manual (H20-0614) for tailoring the system to run an application in a minimum size partition of 90K.

**Basic Program Package:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0614) ... Operations Manual (H20-0615). If only the form numbered manuals are required order from Mechanicsburg -- not from PID.

**Machine Readable** -- Object Decks, Sample Job Control Cards, and the Sample Problem Decks.

**Optional Program Package:**

**Machine Readable** --

- Option 1 - Source statements are specified by using Program Number Extension - OPT1.
- Option 2 - Program Listings are specified by using Program Number Extension - OPT2.

**Ordering Information:** Program Number 360ACX34X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirements
Basic	none	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
Optional	OPT1	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
	OPT2	MT 9/800	28	01
		MT 9/1600	29	01

**Additional Program Support Material:** Application Description Manual (H20-0535-1)\* ... Systems Manual (Y20-0394).\*

**Reference Material:** PLAN Application Description Manual (H20-0490)\* ... PLAN Program Description Manual (H20-0594)\* ... PLAN Operations Manual (H20-0596)\* ... IBM S/360 Operating System - Graphic Programming Services for FORTRAN IV (C27-6932).\*

\*Available from Mechanicsburg Distribution Center.

For further information contact your Regional 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 DP 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.



**VERSION 2 OF THE 1130 PROGRAMS  
FOR PETROLEUM EXPLORATION  
AND ENGINEERING MAY BE ORDERED  
(TYPE II)**

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

Fifteen programs for petroleum exploration and engineering applications for use under 1130 Disk Monitor System Version 2 (1130-OS-005) may be ordered. These programs remain functionally equivalent to Version 1 of the same programs which they replace. Shipments will begin the week ending May 9, 1969.

**Expanded Features Support ...** These programs run on 8K or larger core systems. Where the programs make use of LOCAL cards, performance may be improved on 16 or 32K systems through customer removal of LOCAL cards.

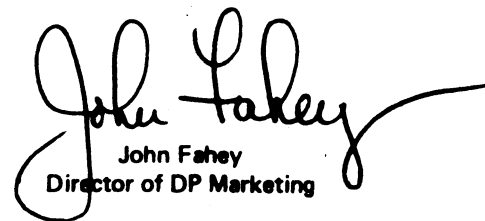
Support is provided for the IBM 1442 Model 6 or 7, or the IBM 2501 Card Reader and the IBM 1442 Model 5 Card Punch. Programs that supported the IBM 1132 Printer now support either the 1132 Printer or the IBM 1403 Model 6 or 7.

Current users of the program will receive a preprinted Program Order Form and a letter announcing the availability of the new versions. The letter instructs the user to order the new versions through his branch office. Current users should use the preprinted Program Order Form to order the new versions.

Program Documentation may be ordered from Mechanicsburg May 9, 1969.

See the following pages for descriptions of these programs and ordering information.

The sales manual pages will be updated shortly.

  
John Fahey  
Director of DP Marketing

**IBM 1130 ECONOMIC EVALUATION OF PETROLEUM PROJECTS PROGRAM**

The IBM Economic Evaluation of Petroleum Projects Program (1130-MP-01X) can be used to screen drilling proposals and rank them according to their profitability. Given the investment schedule and production forecast for an exploration and drilling prospect, the programs compute the payout period and rate of return using the discounted cash flow method.

The program considers producing rates, investment schedule, expense, taxes, working interest factors, product prices, time value of money and depreciation.

The program computes rate of return and payout for any given project. A project life of 30 years can be handled.

The program will accept directly the output of both the Decline Curve Analysis Program (1130-MP-03X) and the Gas Deliverability Program (1130-MP-07X).

The IBM 1130 Dipmeter Program (1130-MP-15X) containing specific plotting subroutines necessary to running the Economic Evaluation program must be ordered from PID.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0402)\* TNL (N20-1964) \* ... Operator's Manual (H20-0403)\* TNL (N20-1965).\*

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP01X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none	none	none

**Additional Program Support Material:** Application Description Manual (H20-0401)\*\* TNL (N20-1963)\*\* ... System Manual (Y20-0046-1)\*\*

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*

**IBM 1130 CASING DESIGN PROGRAM**

The IBM Casing Design Program (1130-MP-02X) allows the user to design the most economical combination casing string, in terms of grade and weight, that will meet the requirements of a given well. It will accept all possible casing-joint combinations. Each casing joint property card gives the properties of the casing and the joint to be used with it. A form of inventory control may be exercised by entering only the available casing-joint combinations.

The program takes into account mud weight, hole deviation, maximum differential pressure expected, minimum length of a given section, and initial joint selection for the bottom section.

The user may have the casing string designed from his own inventory of casing.

The casing string designed by the program will meet API standards.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0406)\* TNL (N20-1967) \* ... Operator's Manual (H20-0407)\* TNL (N20-1968).\*

Machine Readable -- FORTRAN source cards including property monitor control cards, and sample problem input data in card form.

**Ordering Information: Program Number 1130MP02X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none	none	none

**Additional Program Support Material:** Application Description Manual (H20-0405)\*\* TNL (N20-1966)\*\* ... System Manual (Y20-0047-1).\*\*

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*

**IBM 1130 DECLINE CURVE ANALYSIS PROGRAM**

The IBM Decline Curve Analysis Program (1130-MP-03X) computes the coefficients in the equation best fitting past production data and the reserves associated with these data. Using a method of least squares for non-linear systems, the coefficients of the equation best fitting past production are determined. By means of the equation, future production rates and future cumulative production are computed. These figures are used to better evaluate a producing property. Output may be on the typewriter, 1132 Printer, 1403 Model 6 or 7 Printer, or 1627 Plotter.

Up to 50 past production periods may be used. The user may select either a hyperbolic decline or an exponential decline. Results of the calculations may be tabulated or plotted. The output is directly available for input to the Economic Evaluation of Petroleum Projects Program (1130-MP-01X).

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0410-1) \* ... Operator's Manual (H20-0411-1) \*.

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP03X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none	none	none

**Additional Program Support Material:** Application Description Manual (H20-0409-1) \*\* ... System Manual (Y20-0048-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*

**IBM 1130 TARNER MATERIAL BALANCE PROGRAM**

The IBM 1130 Tarner Material Balance Program (1130-MP-04X) is an aid in predicting the performance of a reservoir. The routine permits analysis of a depletion type reservoir. It allows the user to calculate the recovery, instantaneous gas-oil-ratio, differential gas-oil-ratio, and total gas as a function of selected pressure values.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0414)\* TNL (N20-1971)\* Operator's Manual (H20-0415-1).\*

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP04X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none	none	none

**Additional Program Support Material:** Application Description Manual (H20-0413) \*\* ... TNL (N20-1970) \*\* ... System Manual (Y20-0049-1) \*\*.



**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**IBM 1130 SCHILTHUIS MATERIAL BALANCE PROGRAM**

This application program (1130-MP-05X) is useful as an aid in predicting the performance of a reservoir. It allows the user to calculate gas volume to oil volume ratio, initial gas content, water influx constant, and volume stock tank oil initially in place.

The Schilthuis material balance equation, for a reservoir which is subject to water influx, is evaluated at each past production data point (for up to 28 points). These values are weighted according to oil production and subjected to a least-squares solution to compute a most probable value of the original oil in place.

A least squares fit program is provided to furnish coefficients for fitting the laboratory pressure, volume, and temperature data. The program uses Gaussian matrix solution and may be used as a general program. The program is versatile. It may be used for estimates of initial oil and gas present on reservoirs with water drives and with or without gas caps.

**Basic Program Package:**

**Documentation** -- Application Directory ... Programmer's Manual (H20-0418) \* TNL (N20-1973) \* ... Operator's Manual (H20-0419-1) \*.  
**Machine Readable** -- FORTRAN source code and sample problem.

**Ordering Information:** Program Number 1130MP05X

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0417) \*\* ... TNL (N20-1972) \*\* ... System Manual (Y20-0050-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**Additional Program Support Material:** Application Description Manual (H20-0421) \*\* ... TNL (N20-1974) \*\* ... System Manual (Y20-0051-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 GAS DELIVERABILITY PROGRAM**

The IBM Gas Deliverability Program (1130-MP-07X) allows the user to project the annual rate at which volumes of gas reserve may be received into gathering systems. A printed report may be obtained by quarters showing a breakdown of the deliverability and daily takes for each well, and production, both daily and cumulative for the reservoir.

The program computes absolute open flow and future deliverabilities for up to 40 individual wells.

Daily production, cumulative production for the year, and total cumulative production are reported quarterly. Output can be read directly by the Economic Evaluation of Petroleum Projects Program (1130-MP-01X).

**Basic Program Package:**

**Documentation** -- Application Directory ... Programmer's Manual (H20-0426) \* TNL (N20-1976) \* ... Operator's Manual (H20-0427-1) \*.  
**Machine Readable** -- FORTRAN source code and sample problem.

**Ordering Information:** Program Number 1130MP07X

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0425-1) \*\* ... System Manual (Y20-0052-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 TWO-DIMENSIONAL WATERFLOODING PROGRAM**

This application program (1130-MP-06X) allows the user to determine the pressure distribution throughout a reservoir, taking into consideration the effect of water injection. The pressure distribution data may then be used to compute the rate of frontal advance through the reservoir, and the flood front may be plotted using an on-line plotter. As an additional feature, this program provides for analysis of complete injection patterns in a reservoir in order that the optimum pattern might be selected.

The solution considers reservoir geometry, boundary conditions, location of producing and injection wells, rates of injection and production, reservoir conductivity, and reservoir condition.

Flood fronts are plotted on an on-line plotter which allows the user to watch the reservoir performance as the computations proceed. The user may stop the flood at any time and change conditions.

**Basic Program Package:**

**Documentation** -- Application Directory ... Programmer's Manual (H20-0422) \* TNL (N20-1975) \* ... Operator's Manual (H20-0423-1) \*.  
**Machine Readable** -- FORTRAN source code and sample problem.

**Ordering Information:** Program Number 1130MP06X

**IBM 1130 MULTI-STAGE FLASH CALCULATION PROGRAM**

The IBM Flash Calculation Program (1130-MP-08X) is a general purpose flash calculation program that can be used for a variety of the computations made by the Petroleum Engineer. The program may be used to design surface separators or to determine the physical properties of the oil and gas from a surface facility. A laboratory differential liberation may be simulated.

The program will accommodate up to four stages of flash. The feed to the first stage may be entered directly, or computed from separator products. Under user option, the C<sub>7+</sub> cut can be broken down into five cuts (C<sub>7</sub>, C<sub>8</sub>, C<sub>9</sub>, C<sub>10</sub>, and C<sub>11+</sub>).

Specific K values can be entered; or, optionally, the program will compute K values from the NGPA (Natural Gas Processing Association) Equilibrium Coefficients.

**Basic Program Package:**

**Documentation** -- Application Directory ... Programmer's Manual (H20-0430-1) \* ... Operator's Manual (H20-0431) \* ... TNL (N20-1977) \*.

Machine Readable -- FORTRAN source code and sample problem.

**Ordering Information: Program Number 1130MP08X**

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0429-1) \*\* ... System Manual (Y20-0053-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 VELOCITY FUNCTIONS FROM TIME-DEPTH DATA PROGRAM**

The IBM Velocity Functions from Time-Depth Data Program (1130-MP-09X) permits a geophysicist to derive a velocity function and to prepare a tabulated Time-Depth Chart from well velocity data. The principal use of the Time-Depth Chart is to provide an easy method for the geophysicist to convert seismic reflection times to depths.

Up to 80 time-depth points can be used. Five velocity function equations and a linear interpolation between the time-depth points can be selected by the user. Results can be tabulated or plotted. Coefficients developed in this program can serve as input to the Wave-Front Ray-Path Determination Program (1130-MP-10X).

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0434) \* ... TNL (N20-1978) \* ... Operator's Manual (H20-0435-1) \*.

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP09X**

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0433-1) \*\* ... System Manual (Y20-0054-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 WAVE-FRONT RAY-PATH DETERMINATION PROGRAM**

The IBM Wave-Front Ray-Path Determination Program (1130-MP-10X) provides a flexible method to compute and tabulate a seismic wave-front ray-path chart; the geophysicist uses such a chart to restore seismic reflections to their true subsurface position.

Thirty ray paths are computed. Results are plotted to scale. Depth and horizontal offsets can be obtained from a tabulation or from a wave-front ray-path plot.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0438) \* ... TNL (N20-1980) \* ... Operator's Manual (H20-0439-1) \*.

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP10X**

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0437) \*\* ... TNL (N20-1980) \*\* ... System Manual (Y20-0055-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 SYNTHETIC SEISMOGRAM PROGRAM**

The IBM Synthetic Seismogram Program (1130-MP-11X) computes and plots a one-dimensional seismic model from well log data. The program aids the seismic interpreter in understanding the relationship between the geological section, as represented by a well log, and the seismic results obtained at the location of the wells.

The model of the layered earth can contain up to a maximum of 600 levels. Primaries only, multiples only, and combined primaries and multiples for both the transmission loss and no transmission loss cases can be computed. Results are plotted on an IBM 1627 Plotter.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0442) \* ... TNL (N20-1982) \* ... Operator's Manual (H20-0443-1) \*.

Machine Readable -- Source code and sample problem.

**Ordering Information: Program Number 1130MP11X**

	<u>Program Number Extension</u>	<u>Distribution Type</u>	<u>Medium Code</u>	<u>User Volume Requirement</u>
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0441) \*\* ... TNL (N20-1981) \*\* ... System Manual (Y20-0056-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM GRAVITY AND MAGNETIC CONTINUATIONS, DERIVATIVES AND RESIDUALS PROGRAM**

The IBM Gravity and Magnetic Continuations, Derivatives and Residuals Program (1130-MP-12X) provides a method for computing: (1) Upward and downward continuations of gravity and magnetic fields ... (2) First and second derivatives of these fields ... (3) Residuals of arbitrary type for gravity and magnetic values. All gravity and magnetic interpreters should be able to make use of this program to analyze potential field data.

The maximum gravity or magnetic station array size is 100 x 100.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0446-1) \* ... Operator's Manual (H20-0447-1) \*.

Machine Readable -- FORTRAN source code and sample problem.

**Ordering Information: Program Number 1130MP12X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0445-1) \*\* ... System Manual (Y20-0057-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 THEORETICAL GRAVITY OF A 3-D MASS PROGRAM**

The IBM Theoretical Gravity of a 3-D Mass Program (1130-MP-13X) allows the user to establish a synthetic gravity anomaly by computing the theoretical gravity of an assumed mass. It permits the comparison of the synthetic anomaly with an anomaly actually mapped and thereby allows the user to find out the reasonableness of his structural interpretation. The program will type and/or punch the gravity values for a grid of simulated gravity stations.

The mass is represented by a three-dimensional array with maximum dimensions of 30 x 30 x 10.

Each prism can be assigned a different density or the densities can be assigned on a layer-by-layer basis.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0450) \* ... TNL (N20-1984) \* ... Operator's Manual (H20-0451) \* ... TNL (N20-1985) \*.

Machine Readable -- FORTRAN source code and sample problem.

**Ordering Information: Program Number 1130MP13X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0449) \*\* ... TNL (N20-1983) \*\* ... System Manual (Y20-0058-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 QUANTITATIVE LOG ANALYSIS PROGRAM**

The Quantitative Log Analysis Program (1130-MP-14X) permits the user to compute the porosity and water saturation on prospective hydrocarbon zones in a well, using data from several log combinations. It aids in evaluating the zones in a well to enable decisions concerning the setting of casing, testing programs, reserve calculations, etc.

The Program allows fast quantitative analysis on an unlimited number of prospective hydrocarbon bearing zones in a well. Induction Logs, Electric Logs, Micrologs, and Sonic Logs can all be processed.

Both a detailed report giving many intermediate results of the calculations and a summary output report are available.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0454) \* ... TNL (N20-1987) \* ... Operator's Manual (H20-0455-1) \*.

Machine Readable -- FORTRAN source code and sample problem.

**Ordering Information: Program Number 1130MP14X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	none		none

**Additional Program Support Material:** Application Description Manual (H20-0453) \*\* ... TNL (N20-1986) \*\* ... System Manual (Y20-0059-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

**IBM 1130 DIPMETER PROGRAM**

The IBM Dipmeter Program (1130-MP-15X) assists in the analysis of the continuous dipmeter log by calculating the true dip of intervals in a well. Structural information is required in most phases of petroleum exploration and production; and, sometimes, the dipmeter is the only source of this information.

This program must be available to provide the plotting subroutines used by the IBM 1130 Petroleum Exploration and Engineering Programs.

The program allows fast calculation of the magnitude of dip and direction of dip of rock strata in a well bore.

Results of the calculations can be presented in typewritten tabular form, or polar coordinate plot, or a cartesian coordinate plot on the 1627 Plotter.

**Basic Program Package:**

Documentation -- Application Directory ... Programmer's Manual (H20-0458-1) \* ... Operator's Manual (H20-0459) \* ... TNL (N20-1989) \*.

Machine Readable -- FORTRAN source code and sample problem. Object code for the IBM 1627 plot subroutines.

**Optional Program Package:**

Machine Readable -- Assembly Language and FORTRAN Language source code for the IBM 1627 plot Subroutines.

**Ordering Information: Program Number 1130MP15X**

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	CARDS	15	none
Optional	none	CARDS	15	none

**Additional Program Support Material:** Application Description Manual (H20-0457) \*\* ... TNL (N20-1988) \*\* ... System Manual (Y20-0060-1) \*\*.

**Reference Material:** 1130 FORTRAN Language (C26-3715) \*\* ... 1130 Disk Monitor System, Version 2 (C26-3717) \*\* ... 1130 Input/Output Units (A26-5717) \*\*.

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

\*\* Available only from Mechanicsburg Distribution Center.



**1130 NUMERICAL SURFACE TECHNIQUES AND  
CONTOUR MAP PLOTTING VERSION 2  
AVAILABLE (TYPE II)**

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

Version 2 of Numerical Surface Techniques and Contour Map Plotting (1130-CX-11X) may now be ordered. Shipments will begin the week ending May 9. Version 2 operates under 1130 Disk Monitor System Version 2 (1130-OS-005). This program is functionally equivalent to, and replaces, Version 1 of the same program.

Numerical Surface Techniques and Contour Map Plotting supports a wide range of applications requiring the analysis of numerical surfaces and 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.

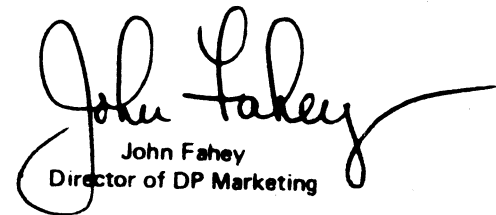
**Expanded Features Support ...** This program runs on 8K or larger core systems. Where LOCAL cards are used, performance may be improved on 16 or 32K systems by customer removal of LOCAL cards.

Support is provided for the IBM 1442 Model 6 or 7, or the IBM 2501 Card Reader and the IBM 1442 Model 5 Card Punch.

Current users of the program will receive a preprinted program order form and a letter announcing the availability of the new version. The letter instructs the user to order the new version through his branch office. Current users should use the preprinted program order form to order the new version.

**Special Ordering Information ...** Version 2 object decks will be distributed to match the customers card input/output configuration. For ordering purposes, a second program number, 1130-CX-38X, has been established to order the basic program material, including object decks for the 1442 Model 5 and 2501 Card Reader configuration. Orders for systems having a 1442 Model 6 or 7, and all orders for optional machine readable material should use program number 1130-CX-11X.

For more information, see the reverse side.

  
John Fahey  
Director of DP Marketing

**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, Version 2.

**Minimum System Requirements:** An IBM 1131 Model 2B and an IBM 1442 Card Read Punch or an IBM 2501 Card Reader and a 1442 Model 5 Card Punch, and an IBM 1627 Plotter.

**Basic Program Package:**

Documentation -- Application Directory ... Programmers' Manual (H20-0357 with TNL N20-1992) ... Operators Manual (H20-0356-1). If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.

Machine Readable -- Object code and Sample Problem.

**Optional Program Package:**

Machine Readable -- Source Statements (order using program number 1130CX11X).

**Ordering Information: Program Number 1130CX11X:**

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
BASIC	none	CARDS	15	none
OPTIONAL	none	MT 9/800	28	01
		MT 9/1600	29	01

**Ordering Information: Program Number 1130CX38X:**

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
BASIC	none	CARDS	15	none
OPTIONAL	none	none		none

Also see Branch Office Manual, DP Sales Activity Section.

**Special Ordering Information:** Object decks must be ordered to match the user's 1130 System card input/output configuration. For a system using a 1442 Model 6 or 7, order program number 1130CX11X; for a 2501/1442 Model 5, order program number 1130CX38X. The optional program material for either configuration must be ordered using program number 1130CX11X.

**Additional Support Material:** Application Description Manual (H20-0140 with TNL N20-1991)\* ... System Manual (Y20-0103-1)\*

**Reference Material:** 1130 FORTRAN Language (C26-5933)\* ... 1130 Disk Monitor System, Version 2 (C26-3717)\* ... 1130 Input/Output Units (A26-5890)\* ... 1130 Assembler Manual (C26-5927)\* ... IBM 1130 Subroutine Library C26-5929)\* ... IBM 1130/1800 Plotter Subroutines (C26-3755)\*

\*Available from Mechanicsburg Distribution Center.

For further information, contact the IBM Petroleum Industry Marketing Representative at 6900 Fannin Street, Houston, Texas 77025.



IBM World Trade Data Processing

P69-71

PROGRAM ANNOUNCEMENT

**VERSION 3 OF THE IBM TEST/360  
IS AVAILABLE (TYPE II)**

**Note to World Trade Readers**

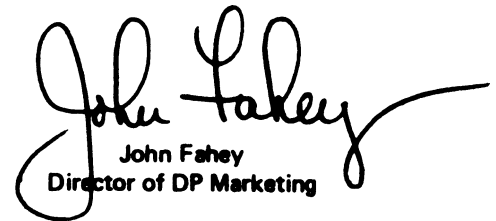
This letter is a reprint of an IBM Programming Announcement and was mailed concurrently to USA and WT offices. The following changes, when appropriate, should be applied to the text for WT use.

- [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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

Version 3 of TEST/360 (360A-SE-24R), an *IBM CONFIDENTIAL* program for testing Teleprocessing Systems, is available for use at the New York and Chicago Datacenters. Version 3 contains all features of earlier versions and adds support for the following additional terminals:

- The 2740 Communications Terminal Model 2
- The 2848/2260 Remote Display Control and Station
- The 2780 Data Transmission Terminal
- IBM Bi-Sync CPU to CPU

The sales manual entry on the reverse side describes in detail the devices and features supported. For additional information on the program and the features supported at the New York and Chicago Datacenters contact your field systems center.



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: May 9, 1969  
Distribution: All Areas

P69-71

**TEST/360:** An IBM confidential program which allows a CPU to simulate a real-time terminal network environment to assist in testing Teleprocessing programs. The user's Teleprocessing and application programs to be tested are loaded into one CPU. Via transmission control units, the user programs interface with the TEST/360 System, which resides in a second CPU. (360A-SE-24R)

TEST/360 is intended for use in testing Teleprocessing systems where simulated testing offers economic advantages over complete testing with actual equipment. Before using TEST/360, user programs should be tested at least to the point where single messages have been processed successfully through the system. With TEST/360, the user programs can be tested in a simulated environment that corresponds very closely to the actual environment in which these programs will operate after installation. Use of TEST/360 permits pre-installation testing to a greater degree than has previously been possible. This should significantly reduce the effort and expense of post-installation testing.

TEST/360 is available for customer use at designated datacenters. For these customers, documentation regarding functions, capabilities and use of TEST/360 may be made available on a "Restricted" basis.

The following procedure must be adhered to before TEST/360 facilities and supporting documents can be made available to your Teleprocessing customer:

1. Submit written specifications of your customer's Teleprocessing configuration and testing requirements to your local Field Systems Center Manager.
2. The Field Systems Center Manager will verify the feasibility of TEST/360 to meet the customer testing requirements. He will also communicate with the appropriate datacenter manager and verify the availability of the proper machine configuration and test time.
3. After having obtained written approval from the Field Systems Center Manager, the TEST/360 Application Description and Program Description manuals may be released to the customer for guidance in preparation for testing.

**Features:** Up to 62 half-duplex lines may be specified ... up to 300 simulated terminals may be specified ... the user may allocate any number of terminals (up to the maximum) across the specified number of lines (one type per line) ... TEST/360 includes the simulation of the 1030 Data Collection System, 1050 and 1060 Data Communication Systems, 2740 Model 1 and Model 2 Communication Terminals, 2848/2260 Display Control and Station, 2780 Data Transmission Terminal, Bi Sync CPU-CPU, AT&T 83B2-83B3 (TTY) Systems, and WU 115A (TTY) Systems ... up to 99 message types may be described for use by each terminal ... actual message generation rates and their data content, and probable distribution of messages per terminal can be generated ... messages may vary in length and their lengths are dependent on user specification and available core storage ... user may supply his own off-line prepared data messages as input to the system; input may be furnished from three sources (magnetic tape, disk, or dynamically generated by TEST/360) ... actual user supplied data messages and dynamically (TEST/360) generated messages can be simultaneously specified as input ... specified line message traffic may be monitored at peripheral printer or terminals ... the terminal network may consist of simulated and real terminal sets connected to the user's central ... system clock times may be dynamically altered during a system test run duplicating low and peak-load traffic ... printed on-line activity reports are available at user specified intervals as frequent as one minute ... terminals may be dynamically shut down or turned on by the user ... user supplied control cards describing the system, lines, terminals, and messages are edited and logically verified prior to system run execution ... comprehensive on-line statistical reports are furnished to the user; additional off-line performance reports are available to the user through a post-run analysis phase; refer to TEST/360 Program Description Manual for a detailed description of the available statistics ... all traffic transmitted and received is logged for subsequent post-run analysis sorting and listing. A logic switch is associated with each terminal; these switches permit conditional message selection for transmittal to the user's central; this feature allows the user to vary message composition and/or logic relative to the time and contents of received messages.

**Use:** TEST/360, operating in a separate System/360 CPU, interfaces with the user's Teleprocessing system through IBM Transmission Control Units. This technique enables the customer's programs to operate in accordance with actual operating conditions. The user's programs and associated hardware are both an integral part of the simulation process; therefore, TEST/360 provides a close approximation of a true operational environment. The user's programs do not require modification or alteration for use with TEST/360.

**Customer Responsibilities:** The customer must complete a series of control cards which describe the network configuration in terms of the number of lines and the terminal types to be associated with each line, and describe the source of his messages for transmittal by TEST/360. Messages can be dynamically composed by TEST/360 or can be input from magnetic tape or disk. Actual messages may also be loaded into TEST/360 from cards and stored in core in the form of a message library. The message generator will then reference the library for message generation. The user can elect to access messages from internal and external sources simultaneously or combine data fields from both sources to form a message.

**Special Sales Information:** Customers are charged for only one hour of test time for each test hour used on the datacenter TEST/360 duplex configuration. For excess test time customers must pay at the hourly test rate of 1/176 of the customer's on-order system monthly availability charge (MAC).

**Minimum Customer System Requirements:** Any IBM System that can interface with the Transmission Control Unit in the TEST/360 configuration.

The program is available for use at the Chicago and New York Datacenters.

**Basic Program Package:**

**Documentation** -- Application Directory ... Program Description Manual (Y20-0148-1) ... Operations Manual (Z20-1865) with TNL Z20-1919. If only the form numbered manuals are required, order from the IBM Distribution Center, Mechanicsburg -- not from PID.

**Machine Readable** -- Object code and sample problem.

**Optional Program Package:**

**Machine Readable** -- Source code and assembly listings.

**Ordering Information:** Program Number 360ASE24R:

	Program Number Extension	Distribution Type	Medium		User Volume Requirement
			Type	Code	
BASIC	none	DTR	9/800	28	none
		DTR	9/1600	29	none
OPTIONAL	none	MT	9/800	28	01
		MT	9/1600	29	01

See DP Sales activity section of Branch Office Manual.

**Ordering Procedures:** Submit a program order card with a letter of authorization from the Field Systems Center Manager to PID, DPD HQ.

The Application Description Manual (Y20-0009-2) and Program Description Manual (Y20-0148) can be ordered from Mechanicsburg with the approval of the Branch Manager. These documents can be distributed to TEST/360 users once the approval of the Field Systems Center Manager has been obtained.

**Additional Program Support Material:** Application Description Manual (Y20-0009) with TNL Y20-0354, System Manual (Z20-0823) with TNL Z20-1920.

For general reference in data communications, please refer to the Data Communications Handbook (Z20-1939).



**IBM****IBM World Trade Data Processing**

P69-72

**PROGRAM ANNOUNCEMENT****BOS/360 RELEASE 18 AVAILABLE**

BOS/360 Release 18 is now available. It is a maintenance update which contains the following programs at the change level indicated:

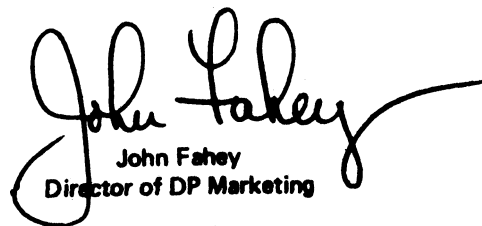
1070 PCS	1-3	360B-SV-032
Utilities, Group 1	1-7	UT-300
Utilities, Group 2	1-5	UT-301
Basic control programs	1-H (17)	CL-302
Consecutive processing macros	1-6	IO-303
ISFMS Macros	1-D (13)	IO-304
DAM Macros	1-5	IO-305
Autotest	1-5	PT-306
Report Program Generator -		
RPG	1-A (10)	RG-307
Sort/Merge	1-B (11)	SM-308
Assembler	1-E (14)	AS-309
STR Macros	1-5	IO-310
RJE	1-1	CQ-311
BSC	1-1	CQ-312

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

Program material and ordering instructions are on the reverse side.

  
**John Fahey**  
 Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

Release Date: May 13, 1969  
 Distribution: All Areas

P69-72

**BASIC PROGRAM PACKAGE (Available from PID)**

Documentation -- Material List and an attachment ... The following SRL publications appropriate to the components ordered are shipped with each initial BOS/360 order.

Assembler with Input/Output Macros Specifications, TNLs <u>N33-8564, 8571</u>	C24-3361-6
Programs and Assembler Operating Guide TNLs <u>N33-8533, 8566, 8577</u>	C24-3450-3
Programmer's Guide TNLs <u>N24-5336, 5328; N33-8531, 8544, 8565, 8572</u>	C24-3372-6
Operating Guide, Operator Messages TNLs <u>N33-8537, 8563, 8578</u>	C24-5024-3
System Generation and Maintenance TNLs <u>N33-8532, 8545, 8567, 8579</u>	C24-5060-2
Utility Programs Specifications and Operating Guide TNL <u>N28-2338</u>	C24-3409-3
1070 Process Communication Supervisor	C26-5996-1
1070 Process Communications Supervisor, Operating Guide	C26-3627-1
Autotest (8K Disk) Specifications TNLs <u>N21-5011, 5041, 5070; N33-8583</u>	C24-3378-2

Note: SRL C24-3378 1 plus TNLs N24-5015, N21-5011, N21-5041, and N21-5070 may be used in lieu of the SRL C24-3378-2 plus TNLs N21-5011, N21-5041, N21-5070 and N33-8583.

Report Program Generator (8K Disk) Specifications, TNLs <u>N21-5060, 5081, 5091, 5099; N24-5196</u>	C24-3387-4
--	------------

Note: SRL C24-3387-3 plus TNLs N24-5159, N24-5175, N24-5196, N21-5060, N21-5064, N21-5081, and N21-5091 may be used in lieu of the SRL C24-3387-4 plus TNLs N24-5196, N21-5060, N21-5099, N21-5081 and N21-5091.

Sort/Merge Program (8K Disk) Specifications TNL <u>N28-2389</u>	C24-3321-4
--	------------

Note: SRL C24-3321-3 plus TNLs N21-5045 and N28-2389 may be used in lieu of SRL C24-3321-4 plus N28-2389.

Macro Definition Language 8K Disk/Tape	C24-3364-3
--	------------

Form numbers which have changed since previous release are underlined.

Machine Readable -- 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.

Assembler	360B-AS-309
Basic Control Program	CL-302
Consecutive Processing MACROS	IO-303
IFMS - Indexed Seq. File MGT. SYSTEM MACROS	IO-304
DAM - Direct Access Method MACROS	IO-305
Synchronous Transmitter Receiver MACROS	IO-310
Autotest	PT-306
Report Program Generator	RG-307
Sort/Merge	SM-308
Group 1 Utilities	UT-300
Group 2 Utilities	UT-301
1070 PCS	SV-032
BCS	CQ-312
Remote Job Entry	CQ-311

**OPTIONAL PROGRAM PACKAGE**

Documentation - Material List - Optional Material instructions. The dumped disk pack data on the tape will be preceded by an initialize 2311 Utility Program and a tape to disk program. The operating instructions for creating a system pack from the tape are provided with the material list.

Machine Readable

1070 PCS	360B-SV-032
Utilities Group 1	UT-300
Utilities Group 2	UT-301
Basic Control Programs	CL-302
Autotest	PT-306
RPG - Report Program Generator	RG-307
Sort/Merge	SM-308
Assembler	AS-309

**ORDERING INFORMATION: System Number 360B (specify each component desired).**

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
		1316	52	01
Optional	none	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
		1316	52	01

**ADDITIONAL PROGRAM MATERIAL**

Program Logic Manuals ... Available from the IBM Distribution Center, Mechanicsburg.

BOS/360 Control Program	Y24-5002
IOCS	Y24-5003-1
Autotest	Y24-5004
Report Program Generator	Y24-5005
Sort/Merge	Y24-5001
Assembler	Y24-5000-1
1070 PCS	Y24-5006
RJE Work Station	Y30-2006-1

Program Listings: The BOS/360 listing (including the Control Program) is available on microfiche from the IBM Corporation, Department 906, Highway 52 and Northwest 37th Street, Rochester, Minnesota 55901 in the following groups:

The Control Program listing is also available on hard copy. Specify Group Code 2010 for the microfiche and/or Group Code 2011 for the hard copy. The listings are equivalent to the output listings produced by assembling the symbolic modules indicated below.

Program Component Name	Program Number
Basic Control Program	360B-CL-302
Utilities, Group 1	UT-300
Sort/Merge	SM-308
1070 PCS	SV-032
Assembler	AS-309
Utilities	UT-301
Autotest	PT-306
Report Program Generator	RG-307

See GI page 14.2 for complete information before ordering additional program material.

**CURRENT USERS**

Current users will receive a pre-printed Program Order Form and a letter announcing the availability of Release 18 instructing them to order the new Release through the branch office using this pre-printed Program Order Form. Complete ordering instructions are provided in the letter to users.

To order the maintenance package for System Release 18, the user must specify M for Maintenance Package with one of the appropriate Distribution Medium codes on the Program Order Form. User Volume Requirements for either the total replacement or the maintenance package is 1. The maintenance package will be available for 60 days from the date of announcement. Disk only users must order a complete Replacement BOS.

**DATA CONVERSION SUBROUTINE  
SUPPORT ALTERED (TYPE II)****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

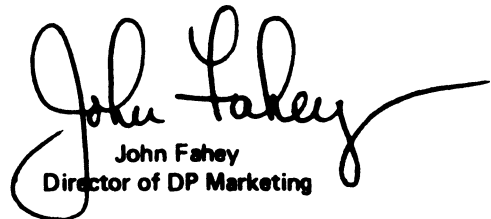
Effective immediately, the data conversion subroutine of the Data Conversion and Label Processing Subroutines package (360A-SE-23X) will no longer be supported to function with OS/360 FORTRAN.

The label processing subroutines will continue to be fully supported.

DOS/360 Basic FORTRAN IV, OS/360, and DOS/360 COBOL and Assembler users are not affected by this change.

The sales manual page will be updated shortly to reflect this change and include the new PID ordering procedure.

**Action Required ...** Notify all customers affected by this change immediately.



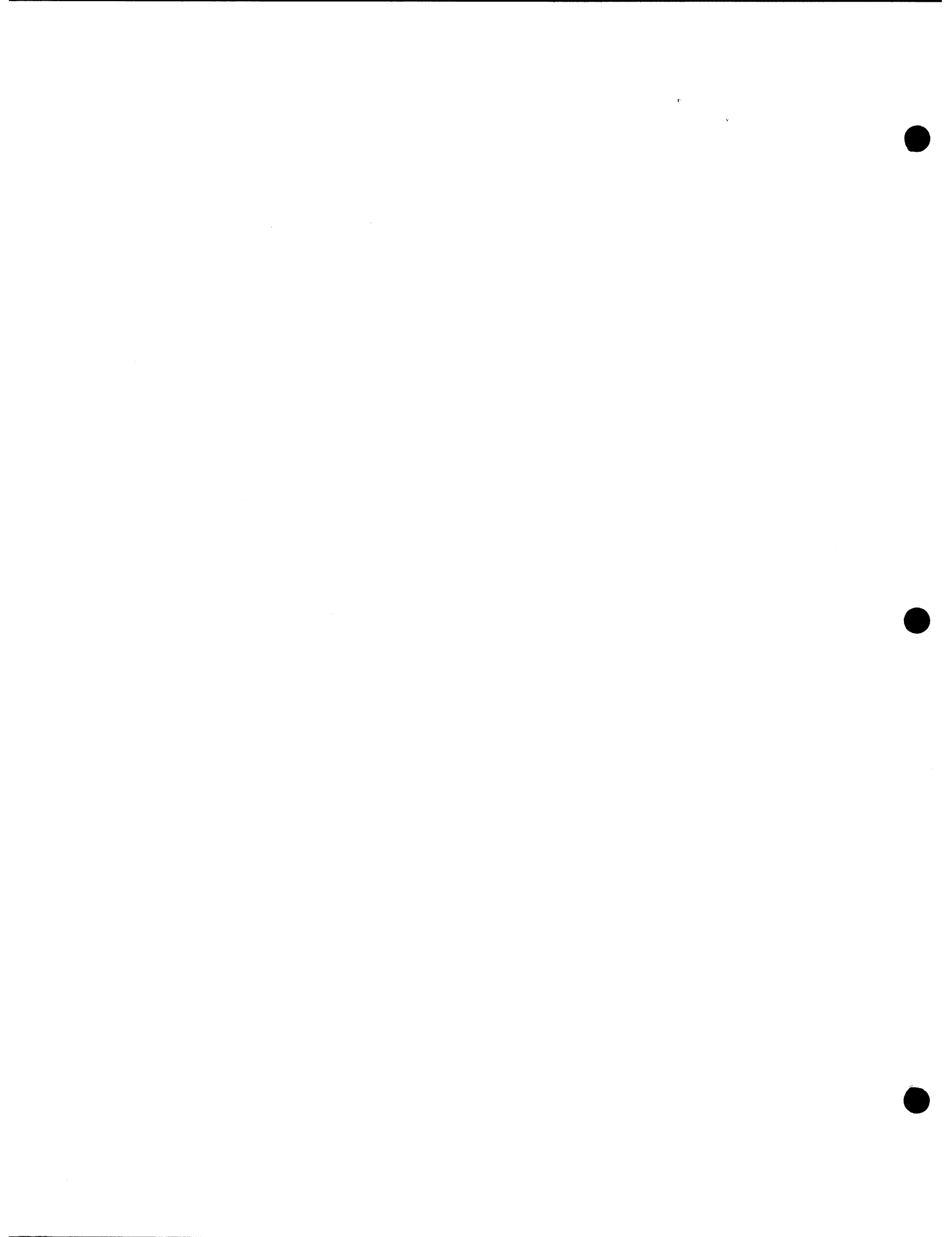
**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: May 14, 1969  
Distribution: All Areas

P69-73



**PLAN GRAPHICS SUPPORT (TYPE II)  
IS AVAILABLE****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**


PLAN Graphics Support Program (1130-CX-33X) is now available.

Note that this program requires the use of 1130 PLAN (1130-CX-25X), which must be ordered separately.

PLAN Graphics Support provides a high level language for implementing and operating an interactive graphic interface between user-written application programs and the IBM 2250.

Availability and form number for the Systems Manual will be announced in a Publications Release Letter.

See the reverse side for more details.



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: May 16, 1969  
Distribution: All Areas

P69-75

**PLAN Graphics Support:** PLAN Graphics Support reduces the time and effort required to implement an interface between the IBM 2250 Display Unit and application programs. In most instances, an application programmer may use this system to avoid coding the graphics portion of an application at a FORTRAN or Assembly Language level. The user may rapidly integrate graphic capability into existing and new applications. This system is an excellent tool to minimize learning and programming time when extending existing applications to include graphic capability. PLAN 1130 (Problem Language Analyzer), a Type II Program (1130-CX-25X), is required by PLAN Graphics Support. The user has access to all the functional capability in PLAN. (1130-CX-33X)

**Description:** A user-oriented statement language has been implemented into PLAN Graphics Support via the facilities provided by PLAN for language definition. By means of the free format language statements or more conventional fixed format specification cards, the application programmer can specify the graphic displays and interrupt (Light Pen and Keyboards) controls desired by the application user. During the execution of the application, the display console operator may dynamically control his application utilizing the interactive graphic capability of the IBM 2250.

The facilities available to the application user (display console operator) via PLAN Graphic Support include:

- . Graphic Output  
Data lists from the application program may be displayed in any desired format using points, characters, lines, arcs, circles, etc. -- the format and control options being previously defined via language statements and specification cards.
- . Graphic Input  
Data may be created or modified at the console via the Alphameric Keyboard and the Light Pen and passed to an application program.
- . Monitoring and Controlling the Application  
The console user dynamically controls subsequent displays and application functions to be executed via the Light Pen, Programmed Function Keyboard, and the Alphameric Keyboard.

PLAN Graphic Support may be used for a wide variety of applications which can be enhanced with man-machine interaction and graphic display capabilities. In particular, this includes Engineering Analysis, Petroleum Exploration and Production, Management Information Systems, and Data Reduction.

**Features:**

- . Easy-to-use statements for specification of graphic displays and interrupt controls.
- . Includes routines for lines, arcs, circles, and conic sections.
- . Major portion of graphic interface is specified external to the application, allowing for minimal impact on application program code.
- . Built-in default options simplify programming.
- . Since PLAN Graphics Support and PLAN coexist, all the PLAN functions and facilities are available to the user.
- . Open-ended system allows user to build additional capability into PLAN Graphics Support.
- . Special routines facilitate maintenance of graphic data.

**Special Sales Information:** PLAN Graphics Support is useful in many applications based on FORTRAN and operating under 1130 Monitor. This system supports only the locally attached model 4 of the IBM 2250. The customer's total effort in graphic programming should be significantly reduced. In many cases this system alone will be sufficient graphics support for an application.

**Use:** The application programmer describes the graphic displays and interrupt controls by means of language statements or specification cards. These specifications are normally used as input to an off-line operation during application development to create and store the files necessary to generate the graphic displays. During the running of the application, the previously stored files are used to generate the displays on the IBM 2250, allowing the console user to communicate with his application. Information flowing between PLAN Graphics Support and the application program pass through FORTRAN COMMON managed by PLAN.

**Customer Responsibilities:** PLAN Graphics Support minimizes the requirement for detailed knowledge of graphics. A knowledge of PLAN is useful but is not a prerequisite when working at the PLAN Graphics Support level. The application programmer must be familiar with FORTRAN conventions and the use of COMMON.

**Note:** The application user (the console operator) does not have to understand PLAN Graphics Support. Only a familiarity with the use of Light Pen, Programmed Function Keyboard, and Alphameric Keyboard is required.

**Programming Systems:** PLAN Graphics Support is programmed in FORTRAN IV and requires the following system environments:

- 1130 Disk Monitor, Version 2 (1130-OS-005)
- 1130/2250 Graphic Subroutine Package, Type II for Basic FORTRAN IV (1130-LM-008)
- 1130 PLAN (Problem Language Analyzer) Type II (1130-CX-25X)

**Minimum 1130 Configuration:** 1131 Central Processing Unit Model 2D or 3D with 1442 Model 6 or 7 Attachment (#4454) or 2501 Attachment (#8042) and Expansion Adapter (#3854), Storage Access Channel (#7490) ... 1133 Multiplex Control Enclosure with Channel Multiplexer (#1865), Storage Access Channel II (#7492), Disk Control (#3201) ... 1442 Card Read Punch Model 6 or 7 or 2501 Card Reader Model A1 or A2 with 1130/2501 Coupling (#3630) and 1442 Card Punch Model 5. In addition to the built-in drive and a 2315 Disk Cartridge for system programs, a single 2310 Disk Storage Drive with one 2315 Disk Cartridge (with available space

for data files) ... 2250 Display Unit Model 4 with Alphameric Keyboard (#1248), Program Function Keyboard (#5858).

**Basic Program Package:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0614) ... Operations Manual (H20-0616). If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.

**Machine Readable** -- Object Code Language statements, and the Sample Problem Decks.

**Optional Program Package**

**Documentation** -- none

**Machine Readable** -- Source statements and Sample Problem.

**Ordering Information:** Program number 1130CX33X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	Cards	15	none
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

**Additional Program Support Material:** Application Description Manual (H20-0535-1)\* ... Systems Manual (availability and form number will be announced in a PRL).

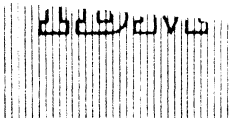
**Reference Material:** PLAN Application Description Manual (H20-0490)\* ... PLAN Program Description Manual (H20-0594)\* ... 1130 PLAN Operations Manual (H20-0595)\* ... 1130/2250 Graphic Subroutine Package for Basic FORTRAN IV (C27-6934).\*

\*Available from Mechanicsburg.

For further information contact your Regional Manufacturing Industry Marketing Representative.

~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~

P69-76



Data Processing

PROGRAM ANNOUNCEMENT

**DOS/360 BTAM SUPPORT TO BE AVAILABLE FOR 2972-8 GENERAL BANKING STATION**

The Basic Telecommunication Access Method (BTAM) under DOS/360 is being extended to include the 2972-8 General Banking Station. Availability will be September 30, 1969.

Binary synchronous communication will be supported with the 2972-8 for multipoint line connections only. The 2972-8 must be at EC 346185 level or later.

BTAM provides the basis for a complete spectrum of on-line banking applications from general administrative transactions to savings, loan, and commercial deposit transactions.

The CPU initiates transmission of messages from or to a specific 2972-8 on a multipoint line by placing the line in control mode and then sending the appropriate polling or addressing sequence to the 2972-8. The polling or addressing sequence that is sent may consist of a maximum of seven characters preceding the ENQ character.

Read, Write, and Control options available for communication with the 2972-8 are:

READ	Initial	WRITE	Initial
READ	Interrupt	WRITE	Initial Conversational
READ	Continue	WRITE	Continue
READ	Continue with Leading Graphics	WRITE	Conversational
READ	Repeat	WRITE	End-of-Transmission
READ	Repeat with Leading Graphics	WRITE	Inquiry
READ	Inquiry	WRITE	Wait-Before- Transmitting CONTROL Mode

Further information on these macro instructions is in the System/360 Model 20 Multipoint section of the DOS BTAM SRL, C30-5001-5.

The 2972-8 is a binary synchronous device. It employs the centralized multipoint line control plus limited conversational mode. It operates on non-switched multipoint lines with transmission speeds of 1200, 2000, or 2400 baud. One to twenty-four of these stations can be connected on one multipoint line. The 2972-8 is a buffered control unit that provides one buffer of either 48 or 96 characters for each attached device.

Three types of devices are available for attachment to the 2972-8: (1) The 2980-1 Teller Device allows data entry and printing on a journal sheet, on inserted documents, and on passbooks folded vertically; (2) The 2980-2 Administrative Device allows data entry and printing on a journal sheet, and (3) The 2980-4 Teller Device allows data entry and printing on a journal sheet, on inserted documents, and on passbooks folded vertically or horizontally.

Publications - The IBM System/360 Disk Operating System Basic Telecommunications Access Method Manual (C30-5001) will be updated by September 30, 1969 to include this programming support.

Minimum Systems Configuration - 32K bytes of Main Storage ... One selector channel for system residence ... One multiplexer channel ... One 2311 or 2314 direct access device ... One card reader ... One card punch ... One printer ... One 1052 printer keyboard ... One 2701\* or 2703 attached to the MPX channel and communication equipment necessary to interface to the communication lines.

  
**John Fahey**  
Director of DP Marketing

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

\* The 2701 can attach to the selector channel under conditions defined in the sales manual.

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 World Trade Data Processing

P69-77

PROGRAM ANNOUNCEMENT

**NEW VERSION OF 1800/1130 CONTROL  
OPTIMIZATION PROGRAM AVAILABLE  
(TYPE II)**

Version 2 of COP (1800-CC-01X) is available. It operates under the 1130 Disk Monitor System Version 2 (1130-OS-005) and replaces Version 1 of COP.

The features of Version 2 are the same as Version 1 except for expanded device support.

In addition to the 1442 Card Read Punch, this version also supports the 2501 Card Reader and the 1442 Card Punch Model 5. The 1403 Printer Model 6 or 7 and multiple disk drives are supported as optional equipment.

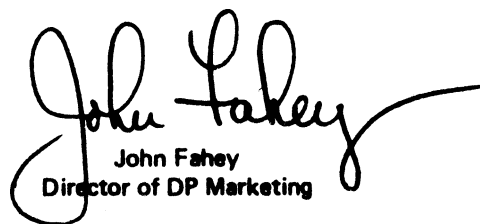
Current users of the program will receive a preprinted program order form and a letter announcing the availability of the new version. The letter instructs the user to order the new version through the branch office. Current users should use this preprinted program order form to order the new version.

New sales manual write-up attached to P69-69.

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**



**John Fahey**  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

ATTACHMENT (1): PROGRAMMING 9000.1  
Release Date: June 6, 1969  
Distribution: All Areas

P69-77





IBM World Trade Data Processing

P6g-78

PROGRAM ANNOUNCEMENT

**NEW MODIFICATION TO S/360 ATTACHED  
SUPPORT PROCESSOR INCLUDES  
USE OF OS/360 MFT (TYPE II)**

System/360 Attached Support Processor (ASP) Version 2 Modification Level 3 is available (360A-CX-15X).

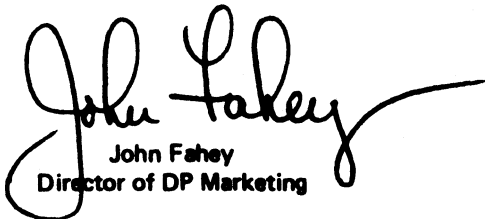
This new modification to Version 2 of ASP supports the use of the OS/360 Multiprogramming with Fixed Number of Tasks (MFT) Control Program. This support is analogous to the MVT support of Version 2 Modification Level 2, and similarly allows control of application job execution with MFT on the Support Processor.

With this significant extension, the ASP system now offers the reduced core requirements of MFT multiprogramming with the operational advantages of the ASP system on from one to three processor systems. Users may now select the control program options best suited to their configurations and requirements (PCP, MFT, or MVT on the Main Processor and PCP, MFT, or MVT on the Support Processor).

Job execution with MFT on the Support Processor permits the Support Processor to execute jobs from the ASP job queue under control of the ASP system, which is executing as a high-priority task with OS/360 MFT. MFT permits the use of a 256K Support Processor with multiprogramming. (Local execution mode previously required a 512K system for MVT.) This MFT local execution mode option is analogous with and offers the same advantages of the MVT support released December 20, 1968 in P68-169.

This significant modification will be automatically distributed to all current users.

For details, see the following pages and the revised System Description (H20-0466-3).



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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: June 6, 1969  
Distribution: All Areas

P69-78

**Attached Support Processor:** The Attached Support Processor (ASP) provides a multiprocessor operating system as an extension of System/360 Operating System (OS/360).

Version 2 extends ASP Version 1 to support Dual Main Processors and local mode execution on one processor. Improvements have also 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 one, two, or three 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 (360C-EU-729) jobs in the input stream, supports Remote Job Processing from Synchronous Transmit Receive (STR) terminals or Binary Synchronous Communications (BSC) terminals, and permits other background functions to share Support Processor CPU time with the primary support functions. (360A-CX-15X)

**Description:** The ASP Supervisor operates as a single-step job in the Support Processor under control of OS/360. The OS/360 Primary Control Program (PCP), the OS/360 Multiprogramming with Fixed Number of Tasks (MFT) Control Program, or the OS/360 Multiprogramming with Variable Number of Tasks (MVT) Control Program may be used on the Support Processor. The ASP Supervisor schedules and initiates the various support and background functions. It is multiprogrammed within itself to minimize the overhead associated with the sharing of CPU and channel time. Excess CPU capacity may be absorbed by other OS/360 tasks if MFT or MVT is utilized on the Support Processor.

The Main Processor operates under either the OS/360 PCP, MFT, or MVT 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. 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 if the 709X Emulator feature is installed on a Model 65 Main Processor. 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 ASP system accepts job streams from remote terminals over STR or BSC transmission lines. The STR package supports three input/output data formats for Remote Job Processing. One is compatible with the IBM 1974 or the IBM 1978 terminals (RPQ devices). The second is oriented toward System/360 Model 20s; and the third is designed for other System/360 processors equipped with proper STR features on a 2701 Data Adapter Unit, and for the 1130 system. The data format is suitable for any computer which has an eight-bit byte data format and which can accept STR transmission. The BSC package supports three data formats for Remote Job Processing. One is compatible with the 2780 Data Transmission Terminal, and the other two are full and partial pressed formats that are designed for the System/360 and 1130 computer terminals. Note that the ASP system does not include the computer 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 symmetric but, rather, may be any combination of permissible Main Processors. Jobs will be distributed to the available system based upon job priority, device requirements, and processor dependency (including the requirement for 709X Emulation). 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.

The ASP system supports the use of OS/360 PCP, MFT, or MVT Control Program configurations on the Main Processor. With MFT or MVT, the ASP system provides for the execution of several jobs concurrently under control of the ASP Supervisor. With MVT, the ASP system maintains control of Main Processor execution, varying the depth of multiprogramming based upon the current job mix. An attempt is made to optimize the scheduling of jobs to balance the computer workload and to take maximum advantage of the available core storage. The ASP system is also capable of supporting the execution of application programs on the Support Processor, provided that the OS/360 MFT or MVT control program is used. This mode of execution permits the Support Processor to assume part of the application workload of the installation as if the Support Processor were another Main Processor, and may be used in a single processor environment. With this feature, it is possible to have a Dual Main Processor with only two CPUs.

**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 multiple System/360 processors.

These features are made possible by:

1. Computer-controlled execution of support functions in multiprogrammed mode on a lower cost Support Processor or in a partition/region of OS/360 MFT/MVT which 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, such as:
    - Card-to-Tape
    - Tape-to-Tape
    - Tape-to-Printer
    - Tape-to-Card
    - Card-to-Printer
    - Card-to-Card
    - 7090/94 Direct Couple Operating System (DCS) Tape Format Deblocking
    - Remote Terminal Transmission
    - Remote Terminal Reception
    - User-written background programs
    - Tape labeling
    - Tape dumping
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 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 and BSC 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 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. 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.

For jobs to be executed under the control of the 709X Emulator, the programmer must use an OS/360 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 the 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.

**Sales Information:** ASP is designed for the user whose computer installation is operated on a job shop basis. The degree to which an installation will realize the functional and performance advantages of the ASP system is determined by the nature of the job mix.

**Customer Responsibilities:** A customer using ASP must take the following steps prior to installation to ensure that the use of the system will be satisfactory:

1. The customer 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 operation 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 of remote terminals that is necessary for their operation.

**Branch Office Responsibility:** To best service the user, the ASP Development Group uses the SECOM network to distribute all program fixes. Use SECOM fixes until program modifications are sent by the Program Information Department to registered users. The responsible account representative should contact the customer to determine how SECOM information could best be used to meet his specific requirements.

**Programming Systems:** The ASP system 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 Control Program nucleus that are required for operation as an ASP Main Processor increase the nucleus by approximately 3000 bytes. If the 709X Emulator is used, approximately 2000 more bytes must also be added to the nucleus.

**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 5000 100-byte records.) System capability can be expanded by attaching additional units of the following:

- 1403 Printers, Model 2 or N1
- 2540 Card Read Punches
- 2311 Disk Storage Drives

2401 Magnetic Tape Units (at least one 9-track or 7-track tape unit with Data Conversion feature is recommended for system maintenance). The ASP system supports 2401 Magnetic Tape Units for use by background programs.

In addition, a 2701 Data Adapter Unit with the Synchronous Data Adapter Type I feature and the 2701 Data Adapter Unit with the Synchronous Data Adapter Type II feature may be attached for Remote Job Processing. When Remote Job Processing is used, at least a Model 40H is required. 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. A 2314 Direct Access Storage Facility may be substituted for 2311 Disk Storage Drives 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 (H20-0323-5) which contains an algorithm for estimating core storage needs.

The following devices are supported as auxiliary operator consoles in the ASP system:

- IBM 2740 Communication Terminal attached on a dedicated line through an IBM 2701 Data Adapter Unit.
- IBM 2260 Model 1 Display Station attached through a directly attached IBM 2848 Display Control Model 3 (with the Line Addressing feature).
- 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 MFT or MVT Control Program:** The minimum Support Processor for use of OS/360 Multiprogramming with Fixed Number of Tasks (MFT) Control Program in the Support Processor is the same as for the Primary Control Program except that the minimum processor for MFT is a Model 40H. For MFT operation, the minimum partition size for ASP is 150,000 bytes. This system permits independent scheduling of other partitions by OS/360.

If MVT is to be used in local mode, the minimum processor is a Model 501. In this mode of operation, the region size for ASP should be approximately 150,000 bytes. Consideration should be given to larger region sizes, commensurate with planned system facilities, such as an additional Main Processor or Remote Job Processing.

At least one IBM 2401 Magnetic Tape Unit (9-track 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 that supports the Primary Control Program with the following 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.

At least one IBM 2401 Magnetic Tape Unit (9-track or 7-track with Data Conversion feature) should be available for system maintenance.

**Note:** These 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 705835 and EC 254902 on the Channel-to-Channel Adapter (special feature #1850).

**Basic Program Package:**

Documentation\* -- Application Directory ... Application Programmer's Manual (H20-0322-4) ... Console Operator's Manual (H20-0321-5) ... System Programmer's Manual (H20-0323-5).

Machine Readable -- Object code, source code, OS/360 modifications, 709X Emulator modifications and macro definitions.

**Optional Program Package:**

Documentation\* -- Systems Manual (Y20-0305) with TNL (Y20-0426).

Machine Readable -- Assembly listings.

**Ordering Information:** Program number 360ACX15X

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	none	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
Optional	none	MT 9/800	28	02
		MT 9/1600	29	02

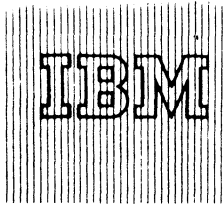
For additional ordering information see Branch Office Manual, DP Sales Activity section.

\* If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.

**Additional Support Material:** System Description Manual (H20-0466-3). Available from IBM Distribution Center, Mechanicsburg.

For further information see the ASP Regional Marketing Representative.





**1800 MPX OPERATING SYSTEM  
ENHANCED WITH MACRO ASSEMBLER**

The 1800 Macro Assembler program will be available in MPX Version 2, June 1970. This new macro capability is a direct extension of the MPX Assembler and is entirely compatible in syntax and language usage.

**Advantages**

- . Introduces high level language capability, specified by the customer.
- . Decreases customer programming effort through the development of his own application or systems oriented macro libraries.
- . Provides full library facilities for user macros.
- . Enables your customer to create a language suitable to his unique environment, making it simple for his programmers to code complex DACS problems.

**Features**

*Macro Definition*

- MAC - Start user macro
- SMAC - Start system macro
- MEND - macro end

*New Pseudo Operations*

- EJCT - 1443 Carriage eject
- SPAC - Line spacing control
- LIST - ON, OFF listing control

*Conditional Assemblies*

AIF, AGO - Provide for conditionally or unconditionally passing over and not assembling blocks of code.

*Name Redefinition*

SET - Permits redefinition of a name without a multiple definition error occurring.

*Library Purging*

PURG - Removes macro name from the users library.

FOR IBM INTERNAL USE ONLY

*Macro Update Program*

MUP - Provides the facility for maintaining user macro libraries.

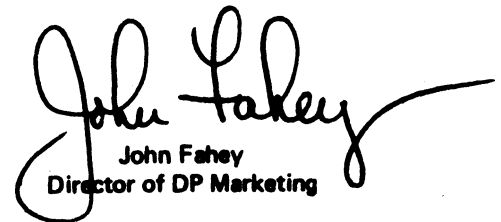
- initializes disk space for user macro libraries
- purge system macros and reclaim space
- insert or delete individual statements
- rename a macro
- add new macros to library
- physically or logically join libraries
- obtain listing of macro libraries

**Performance**

The Macro Assembler will perform as efficiently as the MPX Assembler when used for assembling non-macro code.

**Core Utilization Requirements**

Requires minimum VCORE partition for MPX-5120 words.

  
 John Fahey  
 Director of DP Marketing

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

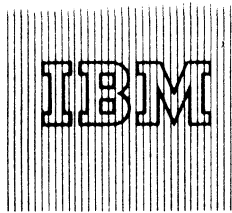
Published by DP Sales Publishing Services, WTHQ

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 World Trade Data Processing

P69-79A

Type II  
Programming Announcement

**IBM SYSTEM/360 MODEL 20  
CAPACITY LOADING AND  
SCHEDULING SYSTEM (CLASS 20)**

The new 360 Model 20 Capacity Loading and Scheduling System (Class 20), Type 2/360V-MX-05X, may now be ordered.

*Description:* CLASS 20 establishes and maintains schedules for the planned and open orders of a manufacturing plant. In addition, CLASS 20 provides a forecast of capacity requirements and computes appropriate processing sequences for the available machines.

The system is designed for small and medium-size job shops in the manufacturing and assembling industries. The extent of coverage is shown by the following objectives:

1. Assurance that schedules are met
2. Shorter production time
3. Level machine loads
4. Reduction of manufacturing costs

The program handles single-part and assembly production.

The package consists of:

1. Order Maintenance
2. Order Scheduling, plus Network Scheduling (optional)
3. Finite Capacity Loading

The system is designed to run under the IBM System/360 Model 20 Disk Programming System. It is written in DPS/TPS Assembler language, using the DPS Input/Output Control System. The design point is 13,500 bytes excluding the supervisor. The load point in the standard version is 2,850 bytes.

*Publication Support:* The Application Description Manual, Form H19-0008, Program Description Manual, Form H19-0029 and Operations Manual, Form H19-0028 will be available. Advance copies will be shipped. Additional copies will be available from the IBM Distribution Center, Mechanicsburg, Pa. Consult the weekly Publications Release Letter for actual date of availability.



John Fahey  
Director of DP Marketing

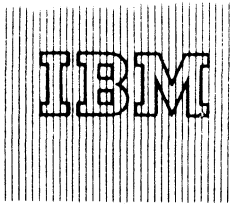
Attachment [1]: P9025

Distribution: All Areas

Release Date: June 11, 1969

P69-79A





IBM World Trade Data Processing

P69-80

PROGRAM ANNOUNCEMENT

**CHECKPOINT/RESTART SUPPORT  
EXTENDED TO OS/360 MFT AND MP/65**

The new Checkpoint/Restart facility is now available under all options of OS/360. Some of the functional improvements provided by this advanced capability are:

- Automatic and Deferred Restart
- Step Restart in addition to Job Restart
- Suppression of Checkpoint and Restart through JCL
- Unit and volume switching at restart time
- Support for COBOL and SORT

MFT and MP/65 users now have the same reliability features that are available to the MVT and PCP users.


**Checkpoint/Restart for MFT Available  
by Special OS/360 Release 17**

Checkpoint/Restart for the OS/360 MFT user is included in a special Release 17. This special release has the same incremental improvements and maintenance corrections as Release 17. It should be ordered only by the MFT user requiring Checkpoint/Restart. This special release cannot be SYSGENed or used in a PCP or MVT environment; therefore, it should not be ordered by PCP or MVT users.

For more information and other Release 17 features available in this special release see P69-28 and the inside pages.

**Checkpoint/Restart for MVT Model 65  
Multiprocessing to be Automatically  
Distributed to Users of MP/65**

All users with an MP/65 system installed or scheduled for installation through 1969 will automatically be mailed a DTR. The DTR, when applied to Release 17, will extend the MVT support for Checkpoint/Restart to the MP/65 systems. See paragraph 'Checkpoint/Restart for Model 65 Multiprocessing' for distribution and ordering procedure.

  
John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

Release Date: June 16, 1969  
Distribution: All Areas

P69-80

**Programming Systems Maintenance** - PTF support for a given release of OS/360 is provided for nine months beyond the replacement release. PTF support for Release 15/16 will be provided until December 24, 1969 which is nine months following the initial availability of Release 17. PTF support for Release 17 and the Special Release of 17 will be provided for nine months following the initial availability of the next release of OS/360 (Release 18). This extended support plan is described in P68-170.

**PTF Distribution** - There are eight PTFs provided with the system on a trailer to the distribution libraries. A description of these PTFs and instructions for their retrieval and application are provided with the system. A number of additional PTFs are available through the normal FE channels.

**FE/SE System Generation Planning** - Close cooperation between Field Engineering and Systems Engineering is vitally important, particularly when installation of a new release is planned. FE and SE representatives should meet before the system generation is performed to review known restrictions and PTFs available for this release. Engineering change level prerequisites must be installed. Appropriate PTFs should be installed before attempting customer operations. This review should consider all available information sources, including Installation Newsletters, SECOM and RETAIN.

The FE technical organization and the field system centers should be informed of any programming situation that prevents an OS/360 installation from advancing to this Special Release of 17.

**Announcement Documentation** - A memo to users will be sent with the order form to current OS/360 users. The memo contains descriptions of Release 17 functions including Checkpoint/Restart for MFT users, an operational consideration section, plus other pertinent information about this special release. Information copies will also be sent to branch offices and field system centers.

**Consolidated Document** - The PLM "IBM System/360 Operating System Consolidated Document", Y28-6681-1, is currently available. This PLM outlines the status of Release 17. Included are the Memo to Users, EC Change Levels, a list of modules, changed, added or deleted, plus lists of APARs, PTFs and PROSE items resolved and unresolved. A copy of the PLM will be shipped to OS/360 Users of record. The availability of a TNL updating this document for the Special Release of 17 will be shipped to OS users of record when available.

**Reference Publications** -- IBM System/360 Operating System: Job-Control Language Charts, C28-6632-5 and TNL N28-2382 ... IBM System/360 Operating System: Planning for Multiprogramming with a Fixed Number of Tasks (MFT), C27-6939-4 and TNL N28-2374.

**Optional Program Material** - The Symbolic libraries for the changed modules of this Special Release of 17 will not be provided. The original Release 17 symbolic libraries are available and apply to the special release except for those modules changed to include the Checkpoint/Restart feature. A list of the new and changed modules are included in the documentation shipped with the system. The microfiche listings reflect these changes.

**Release Independent Components** - The release independent components in this Special Release of 17 are the same components and maintenance level as Release 17 except 360S-CI-535. A list of these components and details on their use are in P69-43.

**IEBUPDAT Utility Program** - This program, although it has been largely replaced by the newer IEBUPDTE utility, can still perform some functions not yet incorporated into IEBUPDTE. For this reason, it is retained as part of the system. Users may wish to include both IEBUPDTE and IEBUPDAT in their generated systems, as described in the IBM System 360 Operation System Generation, C28-6554.

**Floating Point Engineering Change Support** - The "tolerance code" made available initially in Release 14 FORTRAN Library is continued in the Release 17 and Special Release of 17 FORTRAN Library. See P69-43.

**Engineering Change Requirement** - The EC requirements are the same as for Release 17. See P69-43 and the Consolidated Document, Y28-6681-1 for details.

**Check/Restart for Model 65 Multiprocessing** - The documentation mailed with the DTR, to users with an MP/65 system installed or scheduled for installation during 1969, consists of:

- A Memo to Users describing Checkpoint/Restart for a multiprocessing configuration.
- A Program Material List of the items that constitute the program package.
- A User's Information Document containing instructions on the use of the DTR and publications information.

The publication information lists the form number of the TNL to the MVT Supervisor PLM (Y27-7190) and provides additional explanation to an existing message in the Messages & Codes SRL. The restrictive statements pertaining to the use of Checkpoint/Restart with an MP/65 system appearing in the specified SRLs are no longer appropriate with release of this DTR.

The additional code to provide the Checkpoint/Restart function for MP/65 users will be incorporated in the next OS release. Any customer not on this automatic distribution list can order this additional function by submitting a request to the Regional Programming Systems Marketing Manager.

**BASIC PROGRAM PACKAGE -- Available from PID.**

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.

Documentation -- Program Material List ... PTF Writeup ... OS/360 Prose ...  
List of changed modules

ALGOL Programmer's Guide TNLs N33-8000, N33-8002, N33-8012 N33-8013	C33-4000-0
Assembler E Programmer's Guide	C28-6595-1
Assembler F Programmer's Guide	C26-3756-3
COBOL F Programmer's Guide	C28-6380-3
Concepts and Facilities TNL N28-0249*	C28-6535-4
Job Control Language TNL N28-2387*	C28-6539-8
Operator's Guide TNL N28-2375*	C28-6540-8
System Programmer's Guide TNL N28-2372*	C28-6550-5
Storage Estimates TNL N28-2380*	C28-6551-7
System Generation TNL N28-2383*	C28-6554-5
System Control Blocks TNLs N28-2381*, 2390**	C28-6628-3
Messages and Completion Codes TNL N28-2373*	C28-6631-6
Programmer's Guide to Debugging	C28-6670-1
Advanced Check Point Restart	C28-6708-1*
COBOL E Programmer's Guide TNL N28-0247*	C24-5029-3
Basic Telecommunications Access Method TNL N30-2628**	C30-2004-2
QTAM Message Control Programs	C30-2005-2
QTAM Message Control Processing Program	C30-2003-3
On-Line Test Executive Program	C28-6650-1
Supervisor and Data Management Services TNL N28-0595*	C28-6646-2
Supervisor and Data Management Macro-Instructions TNLs N28-0696, 0697*	C28-6647-3
Linkage Editor TNL N28-2382	C28-6538-6
FORTRAN E Programmer's Guide TNLs N28-0578, 0580, 0586	C28-6603-2
FORTRAN G and H Programmer's Guide TNL N28-0573**	C28-6817
Graphic Programming Services for 2250 Display Unit TNL N27-1289, N27-1301	C27-6909-4
Graphic Programming Services for 2260 Sub-Programs	C27-6912-6
1130 System Introduction	C26-3709-3
FORTRAN Library Sub-Programs TNL N28-0588	C28-6596-4
PL/I F Comp Subroutines TNL N33-6004	C28-6590-1
1130 Programmer's and Operator's Guide TNL N33-8024	C26-3717-3
1130 Subroutine Library TNL N33-8022	C26-5929-4
Graphic Programming Services for FORTRAN IV	C27-6932-3
Data Transmission for FORTRAN	C27-6937-1
PL/I F Programmer's Guide TNLs N33-6010, 6012*	C28-6594-4
TESTRAN Note: SRL C28-6648-0 plus TNLs N28-2249, 2270, 2303 and 2324 may be used in lieu of the SRL C28-6648-1.	C28-6648-1
Remote Job Entry TNL N30-2622	C30-2006-2
User's Guide for Job Control From the 2250 Display Unit TNL N27-1303	C27-6933-1
SGJP User's Guide	C27-6938-1
Sort/Merge	C28-6543-5
Maintenance	C27-6918-1
Utility Programs	C28-6586-9
Consolidated Document	Y28-6681-1*

\* Denotes Change From Previous Release.

\*\* Denotes changes for Basic Material List that were created since Release 17.

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

**Machine Readable:** The complete special release of OS/360 is distributed as follows:

For the 2311 User - on two 2400 foot reels of magnetic tape, either 9-track (800 bpi), or two 7-track magnetic tapes (800 cpi Data Conversion Feature required), or one 9-track magnetic tape (1600 bpi), or four 1316 Disk Packs.

Note: 2311 users for this special release must specify Program Number Extension "2311CR" otherwise Release 17 will be forwarded. This special release is for MFT users only.

For the 2314 User - two 2400 foot reels of magnetic tape, either 9-track (800 bpi), or two 7-track magnetic tapes (800 cpi Data Conversion Feature required), or one 9-track magnetic tape (1600 bpi).

Note: 2314 users for this special release must specify Program Number Extension "2314CR" otherwise Release 17 will be forwarded. This special release is for MFT users only.

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 Program Order Form.

Starter System for 2311 Residence	360S-CI-514
Starter System for 2314 Residence	-CI-534
Primary Control Program/MFT	-CI-505
Primary Data Management	-DM-508
OS/360 Utilities	-UT-506
Independent Utilities	-UT-507
Assembler E	-AS-036
Assembler F	-AS-037
Linkage Editor E	-ED-510
TESTRAN	-PT-516
Basic Direct Access Method (BDAM)	-DM-509
Basic Telecommunications Access Method (BTAM)	-CQ-513
Queued Telecommunications Access Method (QTAM)	-CQ-519
Graphic Programming Services	-IO-523
Indexed Sequential Access Methods (BISAM, QISAM)	-IO-526
Sort/Merge	-SM-023
FORTRAN E	-FO-092
FORTRAN G	-FO-520
FORTRAN H	-FO-500
FORTRAN Library	-LM-501
COBOL E	-CO-503
COBOL E Library	-LM-504
COBOL F	-CB-524
COBOL F Library	-LM-525
PL/I F	-NL-511
PL/I Subroutine Library	-LM-512
ALGOL	-AL-531
ALGOL Library	-LM-532
SERO, SER1, and EREP for Models 40, 50, 65, and 75	-DN-527
Report Program Generator	-RG-038
Satellite Graphic Job Processor	-RC-543
1130/360 Data Transmission	-LM-542
On-Line Test Executive Program	-DN-533
Graphic Subroutine Program	-LM-537
Graphic Job Processor	-RC-541
Linkage Editor F	-ED-521
Recovery Management Mod/65	-DN-539
Remote Job Entry	-RC-536

360S-CI-505 has changed with this release; all other components remain the same as in Release 17.

Ordering Instructions

For new users the branch office must have the Program Order Form (120-1957-0). Current users of OS/360 will receive a preprinted Program Order Form and a letter announcing availability of the Special Version of Release 17 for MFT with Checkpoint/Restart instructing them to order the new release through the branch office using this form. Complete ordering instructions are provided in the letter to users.

The preprinted order form 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.

Special Note for 2314 Direct Access Storage Facility Users

Tapes will be in the dump/restore format. A 2314 user having two or more 2311 Disk Drives but not 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.

Ordering Information: System Number 360S

Note: Basic machine readable material for this system is ordered by specifying a "System Line" (Columns 1-7, 15-24) and "Component Lines" (Columns 8-12) of the Program Order Form. Enter a separate Component Line for each component

desired. Respecify the System Line for each different Program Number Extension.

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	2311CR	MT 7DC/800	26	02
		MT 9/800	28	02
		MT 9/1600	29	01
		1316	52	04
2314CR		MT 7DC/800	26	02
		MT 9/800	28	02
		MT 9/1600	29	01

#### ADDITIONAL PROGRAM MATERIAL

Program Logic Manuals (available from the IBM Distribution Center, Mechanicsburg)

COBOL E	Y24-5009-1, TNLS Y28-6385 Y28-6393
ALGOL F Compiler	Y33-8000, TNLS Y33-8001, Y33-8003
Assembler E	Y26-3598
Assembler F	Y26-3700
Checkpoint/Restart	Y28-6672-1
RPG	Y26-3704, TNL Y2i-0006
Graphic Problem Oriented Routines	Y27-7110-1
Graphic Access Method	Y27-7113-3
MFT Control Program	Y27-7128-3, TNLS Y28-2340, 2376*
Graphic Programming Services for FORTRAN	Y27-7152, TNLS Y27-7163, Y27-7177
Graphic Job Processor	Y27-7159, TNL Y27-7178
Model 65 Recovery Management	Y27-7155-1
COBOL F	Y28-6382-2
Sort/Merge	Y28-6597-3
FORTRAN E	Y28-6601-2, TNLS Y28-6383, Y28-6819, Y28-6827
Sequential Access Method	Y28-6604-1, TNLS Y26-8010, Y26-8011
Introduction to Control Program Logic	Y28-6605-4
Catalog Management	Y28-6606, TNLS Y26-8013, Y26-8020
Direct Access Device Space Management	Y28-6607-4
Input/Output Support (OPEN/CLOSE/EVO)	Y28-6609-2
Linkage Editor E	Y28-6610-2, TNLS Y28-2301, Y28-2356
Linkage Editor F	Y28-6667, TNL Y28-2357
TESTRAN	Y28-6611, TNL Y28-2371
Fixed Task Supervisor	Y28-6612-4 TNL Y28-7188
P C P Job Management	Y28-6613-3
Utilities	Y28-6614-4
Guide to Model 91	Y28-6665-0, TNL Y28-2290
Input/Output Supervisor	Y28-6616-4, TNL Y28-2363
Basic Direct Access Method	Y28-6617-3, TNL Y26-8019
Indexed Sequential Access Method	Y28-6618-2
FORTRAN G	Y28-6638-1, TNL Y28-6826
FORTRAN H	Y28-6642-3
On-Line Test Executive	Y28-6651-1
MVT Logic Summary	Y28-6658-2
MVT Supervisor	Y28-6659-3
MVT Job Management	Y28-6660-3 TNL Y28-2386
Initial Program Loader and Nucleus	
Initialization Program	Y28-6661-1
PL/I (F)	Y28-6800-3, TNLS Y33-6002, Y33-6004
PL/I (F) Subroutine Library	Y28-6801-4
Update Analysis	Y28-7106
Basic Telecommunications Access Method	Y30-2001-2, TNLS Y30-2511, Y30-2518
QTAM	Y30-2002-2
Remote Job Entry	Y30-2005-2
OS/360 Rel 17 Consolidated Document	Y28-6681-1 TNL Y28-2387*
System/360-1130 Date Transmission for FORTRAN	Y27-7161-0
System/360 Job Processing from a Remote 1130/22 Subsystem /	Y27-7166-0

#### Program Listings

Operating System/360 program listings are available on microfiche from IBM Corporation, Department 906, Highway 52 and Northwest 37th Street, Rochester, Minnesota 55901, in the following group.

S/360 OS Primary Control Program 1010\*

Refer to P-letter P69-43 for a complete list of microfiche group codes for Release 17.

\* Denotes the change from previous release.

#### Notes 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 20  
CAPACITY LOADING AND  
SCHEDULING SYSTEM (CLASS 20)**

The new 360 Model 20 Capacity Loading and Scheduling System (Class 20), Type 2/360V-MX-05X, may now be ordered.

*Description:* CLASS 20 establishes and maintains schedules for the planned and open orders of a manufacturing plant. In addition, CLASS 20 provides a forecast of capacity requirements and computes appropriate processing sequences for the available machines.

The system is designed for small and medium-size job shops in the manufacturing and assembling industries. The extent of coverage is shown by the following objectives:

1. Assurance that schedules are met
2. Shorter production time
3. Level machine loads
4. Reduction of manufacturing costs

The program handles single-part and assembly production.

The package consists of:

1. Order Maintenance
2. Order Scheduling, plus Network Scheduling (optional)
3. Finite Capacity Loading

The system is designed to run under the IBM System/360 Model 20 Disk Programming System. It is written in DPS/TPS Assembler language, using the DPS Input/Output Control System. The design point is 13,500 bytes excluding the supervisor. The load point in the standard version is 2,850 bytes.

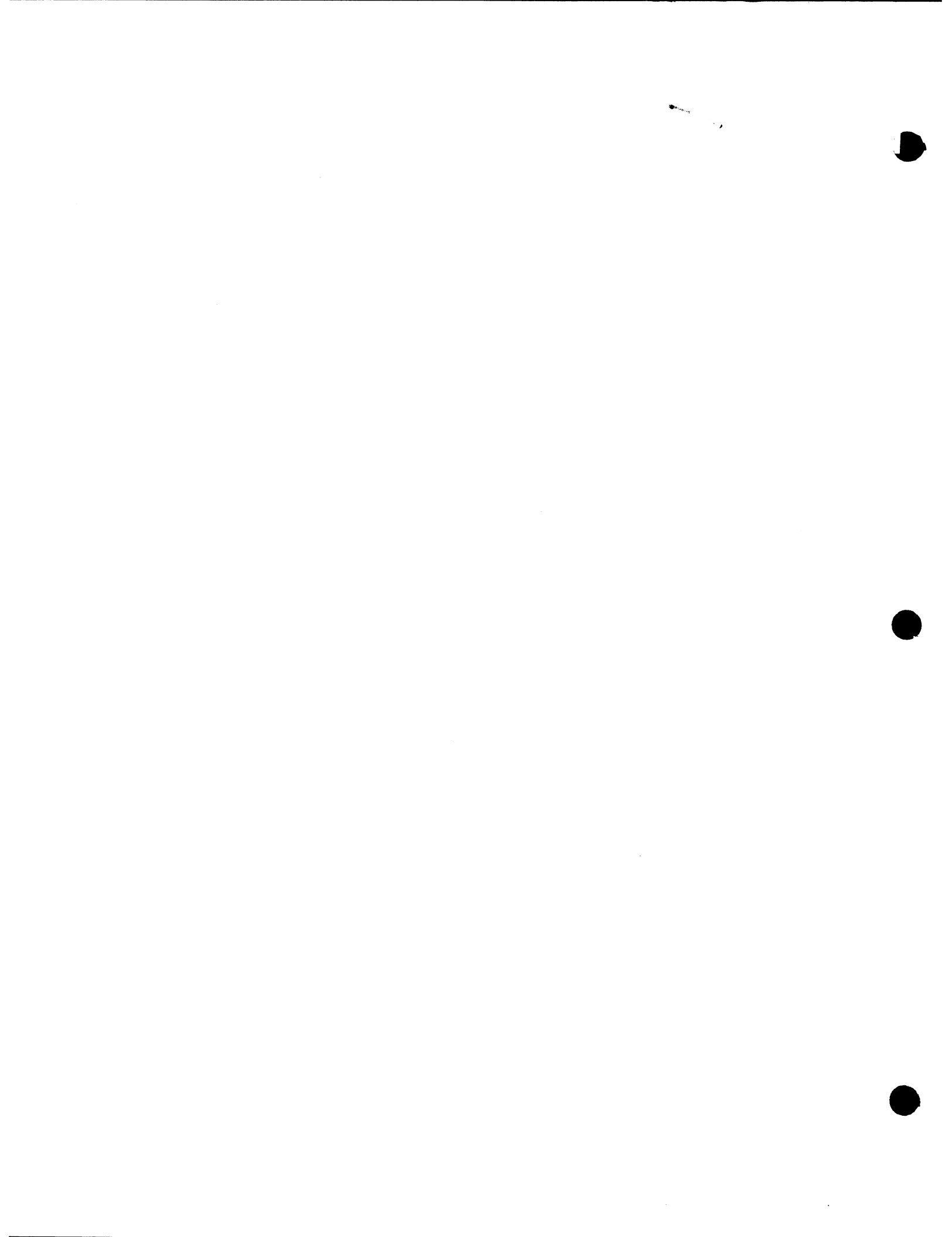
*Publication Support:* The Application Description Manual, Form H19-0008, Program Description Manual, Form H19-0029 and Operations Manual, Form H19-0028 will be available. Advance copies will be shipped. Additional copies will be available from the IBM Distribution Center, Mechanicsburg, Pa. Consult the weekly Publications Release Letter for actual date of availability.

  
John Fahey  
Director of DP Marketing

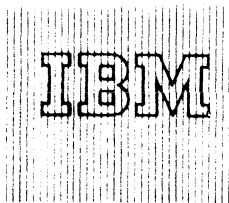
Attachment [1]: P9025

Distribution: All Areas

Release Date: June 11, 1969







**NEW VERSION OF 1130 PROJECT CONTROL SYSTEM IS AVAILABLE (TYPE II)**

Version 2 of the 1130 Project Control System is available (1130-CP-05X). This version of the Program operates under the IBM 1130 Disk Monitor System Version 2.

Current users will receive a preprinted program order form and a letter announcing availability of Version 2. The letter instructs them to order the new version through the branch office. They should use the pre-printed order form.

See the reverse side for more information.

**NEW VERSION OF 1130 AUTOMATED CHEMISTRY PROGRAM (ACP) IS AVAILABLE (TYPE II)**

Version 2 of ACP for the 1130 is available (1130-UH-13X). The program supports the IBM 1080 Data Acquisition System in the Clinical Laboratory. This version operates under the 1130 Disk Monitor System Version 2.

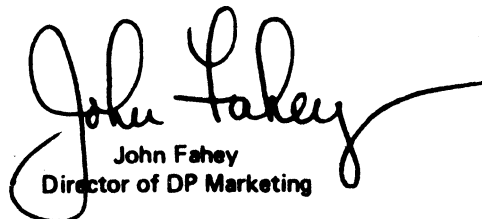
Current users will receive a preprinted program order form and a letter announcing availability of Version 2. The letter instructs them to order the new version through the branch office. They should use the pre-printed order form.

See the reverse side for more information.

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

  
**John Fahey**  
 Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

**Project Control System (PCS):** PCS provides a basic tool needed by management to fulfill its responsibilities in the planning, supervising, and controlling of project-oriented work. In addition to critical path analysis, the system provides the capability for summarizing externally prepared resource and cost information. (1130-CP-05X)

For critical path networks, the 1130 Project Control System will process 2,000 activities either in the form of precedence lists or in ij/PERT/CPM notation. Its design allows for a simple approach to networking, but also offers many of the features normally found only in programs designed for large computers. Users consistently planning to run networks greater than 1,200 activities with extensive report printing are urged to consider PMS/360 (360A-CP-04X).

**Features:** 2,000 work items (or ij/PERT/CPM activities) ... 4,500 precedence relationships ... each precedence relationship can be lagged ... the number of days and the starting day of the work week can be specified for each item ... for in-progress work items, progress can be reported as a percent complete, or as the number of work days remaining ... scheduled and actual dates can be assigned to both the beginning and end of each work item ... basic resource and cost summarization capability is provided ... tabular and graphic reports are available ... card or disk files may be used ... arbitrary non-work days, in addition to regular holidays, can be incorporated into the calendar.

**Sales Information:** The major market for 1130 PCS consists of government and industry areas concerned with construction or maintenance. The needs of this market determined the titles and formats of the reports and the formats of the various input cards. However, intensive investigation has revealed that there are no significant differences among the needs of all critical path users. For this reason, 1130 PCS can meet the critical path requirements of a broad range of 1130 users, irrespective of industry. Industry prospects include:

**Manufacturing and Distribution Industries** -- where 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** -- where network techniques have been used to schedule applied research projects and computer program development.

**Service Industries** -- where network techniques have been used to schedule power plant operations, bank clearing-house operations, dividend check distribution, and insurance report preparation.

**GEM Accounts** -- where network techniques have been used for internal management control as well as for contractor control, test production of biological products, experimentation with drugs, and university and college curricula and facilities usage.

**Transportation Industries** -- where network techniques have been used to schedule 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 system in virtually all industries.

**Use:** To use 1130 PCS, the customer must describe the work items and their relationships, which constitute the project network. These data are punched into formatted cards for entry into the 1130. Optional data, including resource and cost information, may be entered initially or during a later network updating run. Requests for a variety of output reports can be made during any type of 1130 PCS computer run.

**Customer Responsibilities:** All users should be familiar with the various 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 technique including precedence list concepts before they can prepare input. Networks generated under the previous version of PCS will have to be regenerated under this version.

**Programming Systems:** The program is written in both 1130 Basic FORTRAN IV and Assembler language and runs under the 1130 Disk Monitor System Version 2. The program is designed to meet the needs of most users without modification; however, it is recognized that special individual requirements do arise. Therefore, the elements of the program written in FORTRAN include those that the user is most likely to modify to suit his own application.

**Minimum System Requirements:** 1131 Model 2B or larger ... 1442 Card Read Punch Model 6 or 7, or 2501. Card Reader and 1442 Card Punch Model 5 ... 1132 Printer or 1403 Printer Model 6 or 7.

**Basic Program Package:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0342-2) with TNL (N20-2004) ... Operator's Manual (H20-0343-3). If only the form numbered manuals are required, order them from Mechanicsburg -- not PID.

**Machine Readable** -- Object code and sample problem.

**Optional Program Package:**

**Documentation** -- None.

**Machine Readable** -- Flowcharts and source statements.

**Ordering Information:** Program Number 1130CP05X:

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	none	2315	58	01
Optional	none	MT 9/800	28	01
		MT 9/1600	29	01

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

**Additional Program Material\*:** Application Description Manual (H20-0576) ... Systems Manual (Y20-0091) ... Source Listings Manual (Y20-0430).

**Reference Material\*:** 1130 Disk Monitor System Version 2 Programming and Operator's Guide (C26-3717) ... 1130/1800 Basic FORTRAN IV Language (C26-3715) ... 1130 Assembler Language (C26-5927).

For further information contact your Regional Scientific Marketing Manager or your Industry Marketing Representative.

\* Available only from Mechanicsburg.

**Automated Chemistry Program (ACP):** ACP supports the IBM 1080 Data Acquisition System in the clinical laboratory. (1130-UH-13X)

**Description:** This program processes the punched card output of the IBM 1080 Data Acquisition System.

**Processing of 1080 Punched Card Output** -- establishes the calibration function from control standard ... checks the quality of the control standards used ... computes the test result ... 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:** This program encompasses the following unique features that produce more reliable test result -- it checks reliability of control standards ... adjusts for analyzer drift ... reports quality control information ... flags abnormal test results for retesting of these specimens.

**Special Sales Information:** The output from this program 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 1130 ACP.

**Use:** The program is loaded into the library and called via job control cards. Environmental data are loaded and retained on disk via a maintenance program included with this program, this is a one-time operation for a given operating environment ... 1080 card output can then be processed.

**Customer Responsibilities:** The user is responsible for -- 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:** ACP is written in 1130 Basic FORTRAN IV and Assembler language and operates under the 1130 Disk Monitor System Version 2.

**Minimum System Requirements:** An 1131 Model 2B (8K) Central Processing Unit or larger, with 2315 Disk Cartridge, 1132 Attachment (#3616), Expansion Adapter (#3854), 1442 Model 6 or 7 Attachment (#4453) ... 1442 Card Read Punch Model 6 ... 1132 Printer Model 1.

**Additional Device Support:** A 2501 card reader and a 1403 printer are supported under Version 2.

**Basic Program Package:**

**Documentation** -- Application Directory ... Program Description Manual (H20-0542-1) ... Operations Manual (H20-0543-1)

**Machine Readable** -- control cards, object modules necessary to store the programs in the users area of the 1130 Monitor Disk, and a sample problem (with control cards).

**Optional Program Package:**

**Documentation** -- None

Machine Readable -- Source code.

Ordering Information: Program number 1130UH13X

	Program Number Extensions	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	none	Cards	15	none
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

Additional Program Material\*\*: Application Description Manual (H20-0482) with TNL (N20-1998) System Manual (Y20-0216) with (Y20-0402).

Reference Material\*\*: System Summary (A26-5574) ... Installation Manual-Physical Planning (A26-3684) ... Functional Characteristics (A26-3661)... Disk Monitor System Reference Manual (C26-3750) ... Basic FORTRAN IV Language (C26-5933) ... Assembler Language (C26-5927) ... Subroutine Library (C26-5929) ... Functional Characteristics (A26-5881) ... Data Presentation System--User's Manual (H20-0338) ... Problem Language Analyzer (PLAN) Program Description Manual (H20-0594) ... 1130 Operations Manual (H20-0595)

For further information contact your Regional Medical Industry Marketing Representative.

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

\*\* Available only from Mechanicsburg.





P69-82

PROGRAM ANNOUNCEMENT

**NEW VERSIONS OF TWO TYPE II PROGRAMS AVAILABLE**

Two programs for engineering applications for use under 1130 Disk Monitor System Version 2 (1130-OS-005) are available. They are:

- . 1130 Mechanism Design System Gears and Springs Version 2 (1130-EM-01X)
- . 1130 Work Measurement Aids Version 2 (1130-MF-03X).

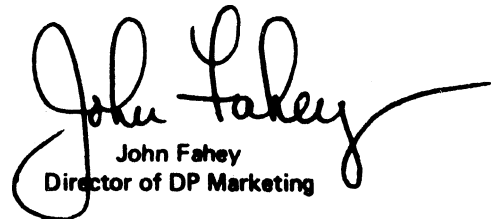
These programs remain functionally equivalent to Version 1 of the same programs which they replace, and operate under the 1130 Problem Language ANalyzer (PLAN) submonitor (1130-CX-25X).

The programs run on 8K or larger core systems. Where the programs make use of LOCAL cards, performance may be improved on 16 or 32K systems through customer removal of LOCAL cards.

Support is provided for the IBM 1442 Model 6 or 7, or the IBM 2501 Card Reader and the IBM 1442 Card Punch Model 5. Programs that supported the 1132 Printer now support either the 1132 Printer or the IBM 1403 Model 6 or 7.

Current users of the programs will receive a preprinted Program Order Form and a letter announcing the availability of the new versions. The letter instructs the user to order the new versions through the branch office. Current users should use the preprinted Program Order Form to order the new versions.

See the following pages for more information.



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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

FOR IBM INTERNAL USE ONLY

Published by DP Sales Publishing Services, WTHQ

Release Date: June 16, 1969  
Distribution: All Areas

P69-82

**Mechanism Design System Gears and Springs:** This program provides design and analysis for five distinct mechanical components used in a wide variety of machines. 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 flexible, easy-to-use program set which will design new parts or analyze existing parts. Gears and Springs may 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 processed by the Problem Language Analyzer (PLAN). It greatly simplifies man-machine communication. Operation can be either by a batch, card input mode or in interactive typewriter input mode. In the latter case, an engineer can readily evaluate parametric changes and 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 requirements ... input can be in batch or interactive mode ... while operating in the latter 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; 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 type 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 a feature provided. If he cannot, however, program modification will be necessary. The programs were constructed with this in mind and are modularly coded in FORTRAN, and thoroughly 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. The commands are processed by the Problem Language Analyzer (PLAN).

**Programming Systems:** Version 2 of the IBM 1130 Monitor (1130-OS-005) Modification Level 5 or higher and 1130 Problem Language Analyzer (PLAN) (1130-CX-25X). The application programs are written in 1130 FORTRAN.

**Minimum System Requirements:** 1130 Model 2B Computing System ... 1442 Model 6 or 7 Card Read Punch ... 2315 Disk. Larger 1130 models, alternate card input/output devices and printers supported by 1130 Disk Monitor are also supported by Mechanism Design.

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

**Basic Program Package:**

Documentation\* -- Application Directory ... Program Description Manual (H20-0365-1) ... Operations Manual (H20-0366-1).

**Machine Readable** -- Object code decks, language definition card decks, and sample problem.

**Optional Program Package:**

**Machine Readable** -- Program source code. Decks and listings are generated by the self-loading program on the tape using a System/360 Model 2030 D or larger.

**Ordering Information:** Program Number 1130EM01X

	Program Number	Distribution Medium		User Volume Requirements
		Extension	Type Code	
Basic	none	CARDS	15	none
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

**Additional Program Material\*\*:** Application Description Manual (H20-0268-1) with TNL (N20-2020) ... System Manuals -- Flowchart and Narratives (Y20-0109-1) ... Listings (Y20-0434).

**Reference Material\*\*:** PLAN Application Description Manual (H20-0490) ... PLAN Program Description Manual (H20-0594) ... 1130 PLAN Operations Manual (H20-0595).

\*If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.

\*\*Available from the Mechanicsburg Distribution Center.

For further information contact your Regional Manufacturing Industry Marketing Representative.

**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 (1130-MF-03X) 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.

**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. 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 (360A-ME-06X).

**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 Program Description 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 are described in the WMA Program Description 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 group, for up to five machine groups. This allows the manufacturing engineer to determine the 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 are 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 an estimated 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 PLAN language statements. 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:** Version 2 of the IBM 1130 Monitor (1130-OS-005) Modification Level 5 or higher and 1130 Problem Language Analyzer (1130-CX-25X).

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. Larger 1131 models, alternate card input/output devices and printers supported by 1130 Disk Monitor are also supported by Work Measurement Aids.

**Basic Program Package:**

Documentation\*--Application Directory ... Program Description Manual (H20-0363-1) ... Operations Manual (H20-0364-1).

Machine Readable--Object code, sample program, and sample reference data cards.

**Optional Program Package:**

Machine Readable -- Program source code. Decks and listings are generated by the self-loading program on the tape using a System/360 Model 2030 D or larger.

**Ordering Information: Program Number 1130MF03X**

	Program Number Extension	Distribution Medium		User Volume Requirements
		Type	Code	
Basic	none	2315	58	01
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

**Additional Program Material\*\*:** Application Description Manual (H20-0249-1) with TNL (N20-2019) ... System Manual -- Flowchart and Narratives (Y20-0104-1) ... Listings (Y20-0435).

**Reference Material\*\*:** Sales and Systems Guide to Industrial and Manufacturing Engineering (Z20-1713) ... Methods and Standards Automation (E20-0144) ... Automated Manufacturing Planning (E20-0146) ... PLAN Application Description Manual (H20-0490) ... PLAN Program Description Manual (H20-0594) ... 1130 PLAN Operations Manual: (H20-0595).

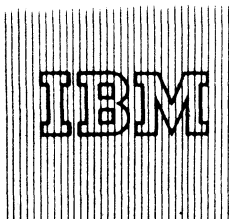
\*If only the form numbered manuals are required, order from Mechanicsburg--not from PID.

\*\*Available from the Mechanicsburg Distribution Center.

For further information contact your Regional Manufacturing Industry Marketing Representative.







**NEW VERSION OF SYSTEM/360 MODEL 20 DISK RPG INCREASES APPLICATION RANGE**

To increase the functional capability of the RPG language, five facilities will be added to the existing System/360 Model 20 Disk Programming System Report Program Generator (Disk RPG).

The functions, to be available April 30, 1970, are:

**CHAIN Function**

With the operation code, CHAIN, a user can retrieve one or more records from an Indexed-Sequential file in his calculation specifications. A user also has the option of specifying an alphanumeric or packed key field on disk -- a facility that is also extended to the existing chaining technique, C1-C9. With this function, spread card processing against an Indexed Sequential file is possible.

**EXCPT Function**

The operation code, EXCPT, permits the user to output one or more records during detail or total calculations, and return to the next calculation specification for continuation of processing. This facilitates multiple or exception output processing and uses a new output record identification, E, to supplement H, D, and T records.

**Closed Subroutines**

Closed subroutines are coded in RPG and are compiled with the source program. With the operation codes, BEGSR (Begin Subroutine), ENDSR (End Subroutine), and EXSR (Exit Subroutine), it is possible to reduce repetitive coding in the calculation specifications. All RPG calculation operations, including EXSR and EXIT, are allowed in a closed subroutine. A subroutine is identified in the calculation specifications with "SR" in columns 7-8.

**User Date Fields**

Four reserved words, UDATE, UDAY, UMONTH, and UYEAR, may be specified in a program. If specified, they are filled from a date field in the communication region of the monitor at the beginning of object program execution. These fields cannot be modified within the program.

The job control program accepts a new card,

//UPDATE, that allows the user to specify a date different from that required for label checking. A second date field in the monitor is used. The standard date card places the date in both fields and the new card places a date in the second field only.

**Edit Codes**

Edit codes are provided in order to reduce, or in most applications, eliminate the need for edit words. These edit codes provide for decimal point and comma insertion, zero suppression, sign removal, negative indication (CR or -), blanking zero fields, and date field editing. A simplified handling of floating dollar sign or asterisk is also provided.

**Machine Configuration** --The required configuration is the same as for the Model 20 Disk Programming System RPG.

**Object Program Core Requirements (In Bytes)** -- These extensions, if used, add to the user's object program the number of bytes shown below. If these extensions are not used, no additional storage is required.

CHAIN	100-130
EXCPT	30- 50
Subroutines (Linkage, each use)	10- 20
User Date	4
Edit Codes - Same as for the normal edit mask, except additional bytes for:	
. Blanking zero fields	10
. Positive sign removal	12

**Reference Material ...** Updated Model 20 Programming System SRLs will be announced in a future Publications Release Letter.

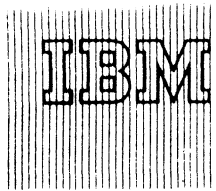
*John Fahey*  
John Fahey  
Director of DP Marketing

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

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY





IBM World Trade Data Processing

P69-84A

Type II

Program Announcement

**AUTOSPOT NUMERICAL CONTROL  
CAPABILITIES BROUGHT WITHIN  
REACH OF THE 1130 USER**

The 1130 AUTOSPOT numerical control processor, which will be available December 31, 1969, provides a means for small manufacturers to implement computer-assisted preparation of input to machine tool controllers for point-to-point and simple milling operations.

This new Type II program gives to the small computer user the ability to solve problems which could only previously be handled by more sophisticated systems.

The 1130 AUTOSPOT processor accepts a high-level language which corresponds to a compatible subset of System/360 AUTOSPOT. It encompasses an extensive set of pattern definition and manipulative capabilities. Machining verbs are interpreted, thus reducing the complexity of the user-supplied postprocessor. Contouring capabilities are provided as well by means of a description of straight or circular paths of the cutter center.

User advantages can be summarized as follows:

- . Control tapes are produced faster and free of errors.
- . Machine-tools are better scheduled and used.
- . Programming techniques are standardized and become an information exchange media.
- . Reaction to emergency orders and unforeseen changes are greatly accelerated.

Advance copies of Application Description Manual (H19-0030-0) have been shipped to DAPS recipients and additional copies are available from the Mechanicsburg Distribution Center.

See the attached Sales Manual pages for more detailed information.

  
John Fahey  
Director of DP Marketing





IBM World Trade Data Processing

P69-85

PROGRAM ANNOUNCEMENT

**VERSION 2 OF 1130 DATA PRESENTATION SYSTEM AVAILABLE**

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

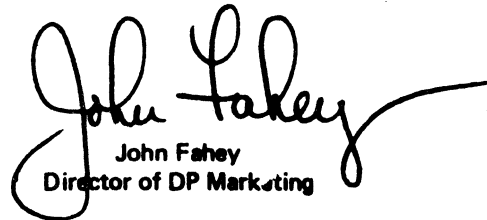
Version 2 of 1130 Data Presentation System (1130-CX-14X) for use under 1130 Disk Monitor System Version 2 (1130-OS-005) is now available. This program remains functionally equivalent to Version 1 of the same program which it replaces. It operates under the 1130 Problem Language ANalyzer (PLAN) sub-monitor (1130-CX-25X).

The program runs on 8K or larger core systems. Where the program makes use of LOCAL cards, performance may be improved on 16 or 32K systems through customer removal of LOCAL cards.

Support is provided for the IBM 1442 Model 6 or 7, or the IBM 2501 Card Reader and the IBM 1442 Model 5 Card Punch. This program supports the 1132 Printer or the IBM 1403 Model 6 or 7.

Current users of the program will receive a preprinted Program Order Form and a letter announcing the availability of the new version. The letter instructs the user to order the new version through his branch office. Current users should use the preprinted Program Order Form to order the new version.

See the reverse side for a description of this program and ordering information.



John Fahey  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR INTERNAL USE ONLY

Release Date: June 19, 1969  
Distribution: All Areas

P69-85

**Data Presentation System:** The Data Presentation System is a three-level graphic support system for the IBM 1130. (1130-CX-14X)

**Description:** The IBM 1130 Data Presentation System supplies high quality, hardcopy graphic output at exceptionally low cost. This system can be used independently as a Graphic Report Generator. The user can choose one or two levels of subroutines from the system for inclusion in his own graphic output programs. The scope and flexibility of this program make it valuable in many applications of the 1130.

Analysis and synthesis of data are a difficult part of most significant jobs. Important facts are often hidden by routine output. Recognizing this, it is common for managers, engineers, and analysts to draw graphs, plots, and diagrams.

There are three levels of control. The Graphic Report Generator, Level III, is the highest level. It is a self-contained system that requires no further programming to operate. It is controlled by input statements that describe the plot to be generated and data files to be processed.

Level II subroutines utilize the routines of Level I to perform larger, logical tasks such as scale annotation and curve fitting. Over 30 subroutines, callable from the program library, are included in Level II.

Level I of this system provides subroutines to generate, scale, and rotate characters and lines using the 1627 plotter attached to the 1130. These routines include interrupt handling and overlapped processing capability.

**Features:** Up to eight data scales may be drawn at any chosen location on the graph; scales may be linear, logarithmic, polar, monthly or calendar date ... several graphs may be plotted from data contained in a single data file or in multiple data files; data from different data files may be plotted against each other ... the automatic scaling feature of the Graphic Report Generator eliminates the need for manual scanning of data; the minimum and maximum data values are automatically extracted and used to select a scale, within the requirements specified by the user, that is convenient to use and that keeps all data on the graph ... scale limits may be user specified to restrict the range of plotting ... scales and scale annotations are automatically system generated but may be suppressed, if desired ... data may be plotted as point plots, line plots, polynomial series, histograms, or horizontal or vertical bar graphs ... the number of data points which may be plotted on one curve or the number of curves on one graph is effectively unlimited ... existing data can be extracted from card or disk files in a variety of formatted or unformatted arrangements ... data may be in any format acceptable to 1130 FORTRAN; in addition, data may be punched in a continuous manner separated with commas ... data may be written onto disk by user programs with PLAN Subroutines in one application and then plotted by the Graphic Report Generator in a subsequent operation ... special reference axis may be generated at any output grid coordinate; reference axis serve such functions as the separation of negative and positive areas ... alphanumeric commentary may be plotted at any coordinate on the plotting grid. Characters may be rotated to any angle and may have any x and y font size .06 inch or larger ... the proportionally spaced character set can be modified to any users special requirements ... graph elements such as scales, labels or data may be saved from graph to graph to eliminate redundant entry of repetitive information ... standard user exits allow easy incorporation of user written modules for purposes of executing functions not provided for in the Graphic Report Generator ... the macro language feature allows one-time definition of repetitive shapes for permanent storage in a macro file ... macro elements may be executed with variable rotation, variable x and y scale factors and at variable locations ... additional commands may be added to the system without recompilation of any modules; the added commands have the result of making the Graphic Report Generator an integral part of a larger engineering, design or analysis information system ... perspective plots of vectors can be drawn from any vantage point; the data used is a series of vectors defined in three-dimensional (x, y, z,) coordinates ... equations may be evaluated and plotted over a defined range ... only the programs that are required to be executed for any run are loaded ... new FORTRAN source decks may be generated with new sequence/identification, reasigned, sequential statement numbers, BCD characters converted to EBCDIC, and program text reformatted into standard arrangement ... features of the Graphic Report Generator which will not be used at any installation can be removed from the program library without any required recompilation.

**Use:** The Graphic Report Generator is controlled by user-written PLAN commands that describe the plot to be generated and the data to be processed.

**Customer Responsibilities:** The customer should be thoroughly familiar with the use of the system as described in the Program Description Manual.

**Special Sales Information:** A partial list of applications that could advantageously use the 1130 Data Presentation System is engineering analysis ... statistical studies ... schematics ... sales analysis ... machine performance ... semi-standard drawings ... quality control ... inventory control ... mathematical analysis ... schedules ... data reduction ... wage studies ... forecasting ... data verification ... product evaluation ... program documentation.

**Programming Systems:** The Data Presentation System runs under 1130 Disk Monitor System Version 2 (1130-OS-005) Modification Level 5 or higher and 1130 Problem Language Analyzer (PLAN) (1130-CX-25X). If only Level II and Level I are to be used, PLAN is not a required component.

The Data Presentation System is programmed in the 1130 (BASIC) FORTRAN and 1130 Assembly Language.

**Minimum Systems Configuration:** 1131 Central Processing Unit, Model 2B ... 1442 Card Read Punch and 1442 Attachment (#4454) or 2501 Card Reader and features #3630, #8042, and #3854 ... 1627 Plotter Model 1 or 2, 1627 Attachment (#7187 for Model 1 and #7189 for Model 2).

Larger 1131 models, alternate card input/output, printers, and additional disk storage supported by the 1130 Monitor are also supported by the Data Presentation System.

**Basic Program Package:**

**Documentation\*** -- Application Directory ... Program Description Manual (H20-0338-1) ... Operations Manual (H20-0337-1).

**Machine Readable** -- Object code, language definition cards, and sample problem.

**Optional Program Package:**

**Machine Readable** -- Program source decks. Decks and listings are generated by the self-loading program on the tape using a System/360 Model 2030 D.

**Ordering Information:** Program Number 1130CX14X

	Program Number Extension	Distribution Type	Medium Code	User Volume Requirement
Basic	none	2315	58	01
Optional	none	DTR 9/800	28	none
		DTR 9/1600	29	none

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

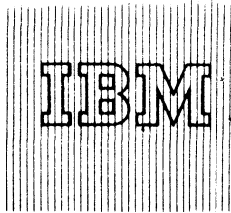
**Additional Program Material\*\*:** Application Description Manual (H20-0235-2) ... Systems Manual -- Flowcharts and Narrative (Y20-0089-1), Listings (Y20-0436).

**Reference Material\*\*:** PLAN Application Description Manual (H20-0490) ... PLAN Program Description Manual (H20-0594) ... 1130 PLAN Operations Manual (H20-0595).

\* If only the form numbered manuals are required, order from Mechanicsburg -- not PID.

\*\* Available from the Mechanicsburg Distribution Center.

For further information contact your Regional Manufacturing Industry Marketing Representative.



**CALL/360-OS AVAILABILITY ANNOUNCED**

CALL/360-OS, including the CALL/360-OS BASIC, CALL/360-OS PL/I and CALL/360-OS FORTRAN language processors will be available by May 29, 1970.

This new Type I program uses timesharing techniques to provide a personal computing system to multiple terminal users under Operating System/360 (OS/360). The personal computing system is designed to satisfy the requirements of both the experienced professional and the individual who has little or no experience in using computers.

CALL/360-OS provides a comprehensive terminal command language and three programming languages:

CALL/360-OS BASIC for the new user or for the occasional user who needs improved techniques for the solution of his daily problems, which may previously have been solved by non-computer methods.

CALL/360-OS PL/I for the solution of more sophisticated and complex problems.

CALL/360-OS FORTRAN, one of the most widely used engineering and scientific programming languages.

CALL/360-OS operates as a task under the OS/360 MFT control program. It occupies one partition of the MFT system. There is no direct communication between CALL/360-OS language processors and Operating System/360. System resources not assigned to CALL/360-OS are available for allocation by the Operating System.

CALL/360-OS has been designed towards providing the responsiveness required of a personal computing system. It is designed to handle the high volume of traffic in a problem-solving environment.

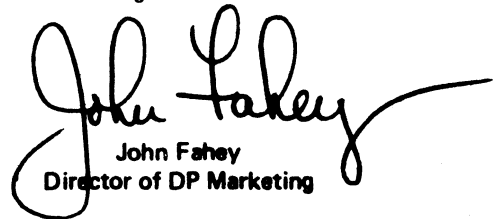
Because of the dynamic nature of the user problems and the manner in which they are handled, no statement may be made regarding the impact of the CALL/360-OS partition on any other partition or vice versa. For increased performance, the CALL/360-OS partition should have the highest dispatching priority within the OS/360 MFT System.

Language Reference Manuals for the CALL/360-OS languages will be available by October 31, 1969. Known differences between Operating System/360 languages (PL/I and FORTRAN) will be identified in these manuals.

The availability of the System Description Manual will be announced in Publications Release Letter; preliminary copies are being distributed with Memorandum to Branch Managers B69-118.

See the reverse side for detailed information.

For further information, contact your Regional Director of Marketing.

  
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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

**CALL/360-OS:** Provides a personal computing system to multiple terminal users under OS/360 Multiprogramming with Fixed Number of Tasks (MFT). This personal computing system attempts to satisfy the computing needs of both the experienced professional and the individual who has not used the computer because of his location or his requirement for immediate service.

The personal computing system provides an easy to learn and use BASIC language. For larger and more sophisticated problems the powerful PL/I and FORTRAN languages are provided.

**Description:** CALL/360-OS operates as a task under the OS/360 MFT control program. Because it requires only one partition in this environment, background jobs may execute concurrently to use available CPU and core storage capacity of the System/360 processor.

The prime objective of the program is to provide a terminal user with a personal computing facility. In this environment, each user operates independently of other users and is usually not aware of other terminal users or other MFT partition activity. The terminal devices supported by the program are the IBM 2741 Communications Terminal and the Teletype Model 33/35 or equivalent.

#### Languages

For the solution to his particular problem, the user of the personal computing system has at his disposal a Terminal Command Language and three programming languages, CALL/360-OS BASIC, CALL/360-OS PL/I, and CALL/360-OS FORTRAN. Since these languages have been implemented to operate in a personal computing environment, differences with the Operating System /360 languages (PL/I and FORTRAN) exist. Known differences will be identified when the language reference manuals are made available.

#### Terminal Command Language

The Terminal Command Language is designed to facilitate communications between the terminal user and the computer. It provides commands that permit the terminal user to:

- Create and modify program files
- Define and redefine data files
- Save, protect, and purge program and data files
- Obtain listings of program files
- Cause a program to be compiled and executed
- Obtain information relative to connect time, CPU time, program files and data files
- Use routines residing in CALL/360-OS libraries
- Choose a language processor for compilations

With these commands, the user is able to access those resources within the system which are applicable to his particular computing problem. The Terminal Command Language is structured so that the user may concentrate on problem solution rather than on the intricacies of the computing machinery.

#### CALL/360-OS BASIC

The CALL/360-OS BASIC language is based upon the BASIC language originally developed at Dartmouth College, Hanover, New Hampshire. This language was specifically designed to be easy to learn and easy to use. It is suited for use as a first entry language for new users and for the occasional user who might normally use a slide rule or desk calculator.

#### CALL/360-OS PL/I

For more complex programs, the powerful CALL/360-OS PL/I language is provided. This language contains powerful features for handling such diverse computing problems as substring processing and array manipulation. CALL/360-OS PL/I provides the user with many features of the PL/I language, using the facilities of CALL/360-OS via a remote terminal. The combination of language and system features provides many advantages to the user, including:

- Capacity to handle a variety of data types including character strings and complex numeric data
- Extended array facilities
- Flexible stream-oriented input/output facilities including list-directed, data-directed, and edit-directed data specification
- A large number of built-in functions
- User-controlled interrupt processing
- Terminal check-out (debugging) of the CALL/360-OS PL/I program
- Ease of modifying CALL/360-OS PL/I programs

#### CALL/360-OS FORTRAN

FORTRAN is the most widely used and known of all higher level scientific languages. It provides language capability in a form convenient and familiar to the scientific/engineering technical community. CALL/360-OS FORTRAN provides a processor with personal computing terminal extensions. Through CALL/360-OS, a FORTRAN language is made available to this community with all the facility offered by a personal computing system.

#### Performance

CALL/360-OS has been designed towards providing the responsiveness required of a personal computing system. In particular, it is designed to handle the high volume of traffic in a problem solving environment.

As is true in all multiprogramming environments, the performance of one user may be impacted by other users. CALL/360-OS specifically addresses these problems through internal features such as dynamic relocation and dynamic reassignment of dispatching priorities. Thus, the system provides rapid response for those features (for example, input program statements, etc.) where fast response is required as opposed to those features (for example, extensive calculation, etc.) where such response is not required.

Because of the dynamic nature of the user problems and the manner in which they are handled, no definitive statement may be made regarding the impact of the CALL/360-OS partition on any other partitions or vice versa. For increased performance, however, the CALL/360-OS partition must have the highest dispatching priority within the OS/360 MFT system.

#### Features

- Personal computing system under OS/360 MFT
- Concurrent batch processing capability under OS/360 MFT
- Extensive Terminal Command Language
- Multiple languages:
  - CALL/360-OS BASIC
  - CALL/360-OS FORTRAN
  - CALL/360-OS PL/I
- Structure designed for problem solving, including:
  - Compiler-generated, dynamically relocatable code
  - Multiprogramming within a partition
  - Dynamic assignment of dispatching priorities

#### Special Sales Information

CALL/360 OS is a reimplemention, under OS/360 MFT, of the standalone CALL/360 program with the addition of the FORTRAN language processor.

#### Use

The CALL/360-OS program operates as a task in a partition of OS/360 MFT. It is initiated as a job through the use of OS/360 Job Control Language (JCL) statements. Variations in the configurations of terminals and available libraries may be attained by the inclusion or exclusion of specific data definition (DD) statements at initiation time.

A terminal user may become attached to the system when the CALL/360-OS program is executing merely by dialing the computer. If a line is available, his call is automatically answered. A comprehensive Terminal Command Language is provided to assure data and program security from other interactive users of CALL/360-OS, and to allow the user to initiate his terminal activity.

#### Customer Responsibilities

The customer is responsible for performing the following functions:

- Ordering and installing satisfactorily all required communications equipment
- An OS/360 Systems Generation to include one "user" SVC which is provided with the program
- Allocating DASD space for the CALL/360-OS control program and libraries
- Generating a CALL/360-OS control program
- Using a supplied utility program to load the CALL/360-OS libraries

#### Programming Systems

CALL/360-OS operates under and is dependent upon the OS/360 MFT control program. It is written in OS/360 Assembly Language and uses EXCP for all input/output operations. To install CALL/360-OS, the user must have an MFT system with at least an OS/360 Assembler and Linkage Editor. There is no direct communication between the CALL/360-OS language processors and OS/360.

#### Minimum Machine Configuration

CALL/360-OS is structured to run on an IBM System/360 Model 50 HG and above. For additional information see Core Requirements below.

The minimum peripheral equipment for online operation is listed below:

- 1 Selector Channel
- 1 2314 Model A2 Direct Access Storage Facility
- 1 2702 or 2703 Transmission Control Unit
- 2 2741 Communications Terminals (correspondence)

In addition, the following peripherals are needed for offline operation:

- 1 Printer Output Unit, OS/360 supported with 132 print positions and graphics equivalent to the PN print arrangement
- 1 Punched Output Unit (See OS/360 Minimum Requirements)
- 1 Card Input Unit (See OS/360 Minimum Requirements)
- 1 2401 Magnetic Tape Units (any model)
- 1 Tape Control (appropriate model)

Any peripheral above and beyond those given above will be supported within the limits of OS/360 to support them. Specifically, CALL/360-OS can use a second selector channel and a second 2314. The use of the High Resolution Timer RPQ gives the most accurate accounting capability. This RPQ is available on the Models 50 and 65.

#### Representative Configurations

The following are representative configurations.

#### Model 50 (Representative)

Type	Model or Feature	Description
2050	1	Processing Unit
	6980	Selector Channel 1st
	7920	1052 Adapter
1052	7	Printer-Keyboard as console typewriter
	9572	Printing element: PTTC/EBCD Code
2821	1	Control Unit
	8637	Universal Character Set Adapter
	9241	Printer Feature



1403	2	Printer
	4740	Interchangeable Chain Cartridge Adapter
	8641	Universal Character Set Feature
	9709	System 360 Adapter
	9631	Type PN2 Print Chain Arrangement
2540	1	Card Read Punch
2803	Any	Tape Control Unit
2401	Any	Tape Unit
2314	A2	Direct Access Storage Facility
	RPQ-E15092	High Resolution Timer
		Transmission Control Unit (select transmission Control Unit dependent on the maximum number of lines. See the 2702/2703 configurations below.)

Model 65 (Representative)

Type	Model or Feature	Description
2065	IH or J	Processing Unit
2365	1	Processor Storage to support 3/4 or 1 million bytes (3 or 4 each)
	7920	1052 Adapter
	2860-1	Selector Channel
	2870	Multiplexer Channel
		Same requirements for 2821, 1403, 2540, 2314, 2702/2803, and 1052 as for Model 50 Configuration
	RPQ-E43528	High Resolution Timer

2702 Configuration

Type	Model or Feature	Description
2702		Transmission Control Unit
2741	4615	IBM Terminal Control Type I
Related Features	9684	Selective Speed
	8055	2741 Break Feature
	3233	Data Set Line Adapter - 1 per line
		The above 2702 configuration can be expanded to handle up to 15 2741 lines by adding one 3233 per line.
TTY	7912	Telegraph Terminal Control - Type II
33/35	E62920	CR cause interrupt on TTY
Features	3233	To go to 15 TTY on 2702, add 1 3233 per TTY line
To go beyond 15 lines	7955	31 line expansion - to allow expansion from 15 to 31 lines
	3853	Expansion Base
Allow mix of 2741 and TTY	7935	Terminal Control Expansion

2703 Configuration

Type	Model or Feature	Description
2703		Transmission Control Unit
2741	7505	Start Stop Base 1
Related Features	4619	IBM Terminal Control Base
up to eight lines	4696	IBM Terminal Control Type I
	8055	2741 Break Feature
	4878	Line speed option (134.5)
	3205	Data Line Set
TTY	7905	Telegraph Terminal Control Base
Related Features	7912	Telegraph Terminal Control Type II
up to 8 lines	4877	Line Speed Option (110)
	3205	Data Line Set
	RPQ-E62376	CR Interrupt on TTY
To expand from 8 to 88	3206	Data Line Set Expander
	3205	Data Line Set. For each set of 8 lines beyond first 8, add for first 8 additional lines a 3206, for next 8 (lines 17-24) a 3205. This alternation (3206, then 3205) continues to 88 lines.
To expand beyond 88 lines	1440	Basic expansion
	7505	Start Stop Base Type I additional
		Alternate 3205 - 3206 as above.
		To mix Teletype and 2741, combine the features specified above.

Terminals

In addition to the standard system console (required by OS/360), two consoles are required for CALL/360-OS, a command console and a communication console. They are used for activation, termination, and for monitoring system load and status. The command or communication consoles may be 2741s and/or TTYs.

2741 Terminal Components

T Type	Model or Feature	Description
2741	1	Communications Terminal
	3255	Dial up
	4708	Interrupt
	9104	Character spacing: 10/inch
	9114	Data set attachment: Western Electric 103A
	9435	Line Feeding: 6/inch
	RPQ-S30006	Printing element and keyboard arrangement (RPQ)

Teletype (Alternate) Command Console

35ASR	LINE	Teletype communications terminal 'XON' and 'XOFF' feature, noncoded answer back drum
	LINE	1-Dial telephone line (1MB), unlisted 1-Type 3002 (schedule 4-type 4), half-duplex private line 1-Ring down signal circuit 1-Alternate Use Key 1-Ringing Key
	DATA SET	Western Electric Data Set 103A2 at TCU, equipped with: Initial Disconnect Response to Disconnect Selective Automatic Answer
	DATA SET	Western Electric Data Set 103A2 at terminal, equipped to be compatible with 103A above (Automatic Answer)

Teletype (Alternate) Communications Console

35R0 or- 35KSR		Teletype Communications Terminal
	LINE	Same as above--in Command Console
	DATA SET	Same as above--at TCU
	DATA SET	Same as above--at terminal-

Core Requirements

The minimum partition size required for use of CALL/360-OS is 264K. This allows a configuration of ten lines with the BASIC and FORTRAN compilers and an object program size of 70K. A typical BASIC program could be expected to generate 70K of object program with approximately 450 statements. Additional partition space is required for increased terminal networks, the PL/I compiler, larger programs, and for improved performance in a large network environment.

Reference Material

Availability of a System Description Manual, BASIC Language Reference Manual, PL/I Language Reference Manual, and FORTRAN Language Reference Manual will be announced in PRL. The reference manuals will be available by October 31, 1969.

For further information, contact your Regional Director of Marketing.





IBM World Trade Data Processing

P69 87

PROGRAM ANNOUNCEMENT

**NEW MODIFICATION LEVELS FOR S/360  
PRODUCT STRUCTURE RETRIEVAL  
AND INVENTORY CONTROL (TYPE II)**

Both the S/360 Product Structure Retrieval (360A-ME-07X) and Inventory Control (360A-MF-04X) programs are now available at Version 1 Modification Level 1.

The new modification level for both programs consists of revised documentation only. The revised publications describe the use of the 2314 Direct Access Storage Facility with these programs and the Model 25 minimum system configuration.

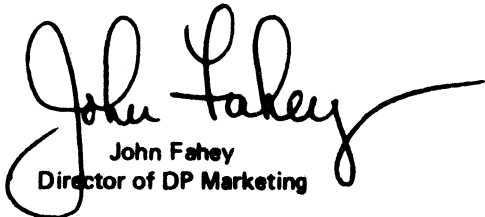
The new publication for the Product Structure Retrieval program is TNL N20-2015 to the Application Description Manual (H20-0329-1). The new technical newsletters for the Inventory Control program are TNL N20-2014 to the Program Description Manual (H20-0555) and TNL N20-2013 to the Application Description Manual (H20-0471).

The new sales manual write-ups are on the following pages.

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

  
John Fahey  
Director of DP Marketing

Published by DP Sales Publishing Services, WTHQ

FOR IBM INTERNAL USE ONLY

Release Date: June 20, 1969  
Distribution: All Areas

P69-87

**Inventory Control:** This group of integrated programs has been especially designed for the implementation of order point inventory control where it applies in manufacturing organizations (360A-MF-U4X).

Programs are provided for (1) classification of inventory items for determining the type of control, (2) calculation of economic order quantities based upon usage information or future requirements, (3) computation of safety stock and order point, (4) projection of demand based upon historic data, and (5) basic programs for transaction processing and report preparation.

**Description:** This application programming package consists of source programs and supporting documentation for the installation of an effective order point inventory control system. There are three major aspects - planning, projection, and execution.

For planning purposes three programs are provided: (1) Inventory Analysis, (2) Order Point, and (3) Order quantity.

The projection phase includes four programs: (1) Edit, (2) Model Select, (3) Initial Update, and (4) Update and Project.

The execution phase is made up of two basic programs: (1) Transaction Processing, and (2) Status Reporting.

**Inventory Analysis:** A program that provides detailed analysis of inventory items based upon usage and cost. The output is useful in determining how the items are to be controlled.

**Order Point:** A program that calculates order point and safety stock for items in the inventory master file. Seven different options for computing safety stock are provided. Four of these use Mean Absolute Deviation (MAD) and user supplied level of service.

**Order Quantity:** Inventory carrying rate and order costs are used by this program to determine economic order quantities. The program calculates order quantities based on average usage or future requirements. Four techniques for order quantity calculation are included in the module. It is highlighted by an analysis for implementation feature which permits the user to analyze the effect of changing order quantities prior to implementing.

**Edit:** A program that provides an interface to user demand data. The program converts the user's demand history file (card, disk or tape) to format required for the model select program. It also edits data for unusual demand variations.

**Model Select:** The historic demand information is analyzed by this program to determine if patterns exist. Items are classified into one of four types that are used to select the technique for projecting future demand. Initial values (averages, MAD, etc.) are also computed.

**Initial Update:** This program uses the output of model select and places these codes and values on the item master file.

**Update and Project:** An operational program that uses the latest demand for each time period and keeps the item master up to date. It has provision for projecting future demand based upon the most recent information in the item master file.

**Transaction Processing:** This program accepts input transaction, for example, receipts, issues, etc., and updates the item master record. Transaction listings with exception highlighting and order recommendation cards for order point items are the output of this program.

**Status Reporting:** Information regarding the status of items in the file is made available by this program. Output is a stock status report for all or a selected portion of the items in the file.

**Features:**

- Nine programs are provided to assist the customer in developing an order point inventory control system.
- Four of the inventory programs are for analysis of inventory usage to provide information for operational programs.
- Operational programs that update inventory master record for current status and the most recent usage information.
- Provision for order action notice for order point items when order point is calculated and when transactions are processed.
- Five options for computing safety stock including two statistical methods using Mean Absolute Deviation (MAD) and user specified level of service.
- First and second order exponential smoothing with automatic updating of MAD.
- Highlighting of items when new order point varies from old order point by a specified percentage.
- Evaluation of old and new safety stock each time order point is calculated.
- Analysis can be performed on all items or on a portion of the file, with or without updating.
- Order quantity calculations based on averages or future requirements.
- Four methods for calculation of order quantity with exits for insertion of user routines.
- Analysis for implementation is part of order quantity program it provides for contrasting the newly computed order quantity to existing order quantity.
- Analysis for implementation feature of order quantity program provides for contrasting the newly computed order quantity to existing order quantity with respect to inventory level and set up costs.

Order quantity category code allows for many combinations of order costs and carrying rates. Only the code is stored on the inventory record.

Provision for processing specific transactions that update the master inventory file.

- Special emphasis is placed on ease of implementation.
- Programs are modular in design to permit the customer to use only the options he desires.

**Special Sales Information:** The programs are designed to utilize files organized by the S/360 Bill of Material Processor (360A-ME-06X) or the DOS/360 Indexed Sequential File Management System (360N-I0-457).

Many of the aspects of these programs are discussed in the IBM Manual, Production Information and Control System, (E20-0280).

The two basic programs for execution phase can be easily modified by the user to produce additional reports and process other transactions. Normally this will only involve changing the RPG specifications for input, output, and processing.

**Use:** The System/360 Inventory Control Programs are direct access file oriented and work in conjunction with an item master inventory file. The records within this file are created, added, deleted, and reorganized using the S/360 Bill of Material Processor Program or DOS/360 Indexed Sequential File Management System.

The inventory control package includes initializing and operational programs. Inventory Analysis, Edit, Model Select, and Initial Update are designed to be used once to set up the system, then periodically (perhaps yearly) or as required to meet changing conditions. Order Point and Update and Project are run on a regular basis (for example, every month or every two weeks). The frequency of using the Order Quantity program depends upon the user's requirements. Normally the items considered as having a fixed order quantity would be processed once or twice a year. This is true if present order quantities are consistent with management's ordering policy. If the order quantities are not considered economical, this program, with its analysis for implementation feature, will be used frequently.

The execution phase consists of two basic programs for recording and obtaining information from the file. The two basic programs of execution (or modifications to these of the user's own programs) will be used in the day-to-day operation. The amount of use depends upon transaction volume and the number of reports the user prepares.

**Customer Responsibilities**

- Tailor the source programs to meet user requirements.
- Organization and construction of item master file, including specifying all data fields to be included.
- Creating, adding, deleting of records in the master file.
- An understanding of the inventory control concepts embodied in the programs so that the customer can make the selection and/or specification of parameters for planning and projection programs.
- Provide historic data for inventory analysis programs.
- Identification coding and processing definition for transactions.
- Writing routines to perform tasks not covered by these programs.

**Programming Systems:** Inventory Control Programs will operate under the IBM System/360 Disk Operating System. The planning and projection programs are written in Assembler Language. The execution programs are written using Report Program Generator.

**Minimum System Requirements:** System/360 Model 2030E ... Decimal Arithmetic (#3237) ... 1051 Control Unit Model N1 ... 1052 Printer-Keyboard Model 8 with appropriate attachments ... 2841 Storage Control Model 1 ... 2311 Disk Storage Drives as required to contain Disk Operating System/360 and user's data files (minimum of 2) or 2314 Direct Access Storage Facility Model A2 (configurations with 2314 only require a 2400 series tape drive for system preparation) ... System/360 Card Reader and Card Punch or Card Read Punch capable of reading one file and punching a second file simultaneously ... System/360 Printer with at least 120 print positions.

System/360 Model 2025E ... 1052 Printer-Keyboard Model 7 ... 2311 Disk Storage Drives as required to contain Disk Operating System/360 and user's data files (minimum of 2). System/360 Printer, Card Reader and Card Punch as described for Model 2030E.

**Basic Program Material:**

Documentation -- Application Directory ... Program Description Manual (H20-0555) with TNL (N20-2014) ... Operation Manual (H20-0556). If only the form numbered manuals are required, order from the IBM Distribution Center, Mechanicsburg -- not from PID.

Machine Readable -- Source code and sample problem.

**Ordering Information:** Program Number 360AMF04X

	Program Number Extension	Distribution Type	Medium		User Volume Requirement
			Code		
Basic	none	MT 7DC/800	26		01
		MT 9/800	28		01
		MT 9/1600	29		01
		1316	52		01
Optional	none	none			none

P69-87

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

**Additional Program Material\*:** Application Description Manual (H20-0471) with TNL (N20-2013) ... System Manual (Y20-0256).

**Reference Material\*:** Production Information and Control System, E20-0280 ... System/360 Bill of Material Processor - Application Description Manual, H20-0197 ... System/360 Bill of Material Processor - Programmer's Manual, H20-0246 ... Wholesale IMPACT Inventory Management Program and Control Techniques, E20-8105 ... Wholesale IMPACT Advanced Principles and Implementation Reference Manual, E20-0174.

For further information contact your Regional Manufacturing Industry Marketing Representative.

\*Available only from Mechanicsburg.

**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:** System/360 Model 2030 D or DC (16K under BOS control or 24K under DOS control) ... Decimal Arithmetic (#3237) ... 1051 Control Unit Model N1 ... 1052 Printer-Keyboard Model 8 with appropriate attachments ... 2841 Storage Control Model 1 ... 2311 Disk Storage Drives as required to contain BOS/360 or DOS/360 and the user's data files (minimum of 2) or 2314 Direct Access Storage Facility Model A2 (DOS only) ... any System/360 Card Reader and Card Punch or Card Read Punch ... any System/360 Printer.

System/360 Model 2025 D or DC (16K under BOS control or 24K under DOS control) ... 1052 Printer-Keyboard Model 7 ... 2311 Disk Storage Drives as required to contain BOS/360 or DOS/360 and the user's data files (minimum of 2) ... any System/360 Printer, Card Reader and Card Punch or Card Read Punch.

**Basic Program Material:**

**Documentation** -- Application Directory ... Programmers Manual (H20-0369) ... Operators Manual (H20-0370). If only the form numbered manuals are required, order from the IBM Distribution Center -- not from PID.

**Machine Readable** -- Source code.

**Ordering Information:** Program Number 360AME07X

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	none	BTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
Optional	none	none		none

Additional ordering information is in the Branch Office Manual, DP Sales Activity section.

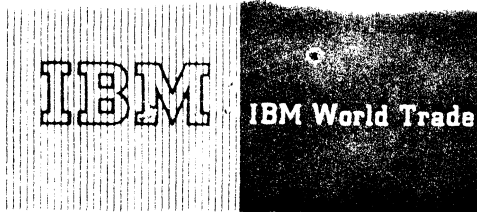
**Additional Program Material\*:** Application Description (H20-0329) with TNL (N20-2015) and Systems Manual (Y20-0112).

**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).

For further information contact your Manufacturing Industry Marketing Representative.

\*Available only from Mechanicsburg.





P69-88

**PROGRAM ANNOUNCEMENT**

**RESTRICTED USA STANDARD COBOL  
FEATURES FOR OS/360 AND DOS/360  
TO BE AVAILABLE**

**MODEL 20 PL/I IMPROVED WITH ARRAYS  
OF STRUCTURES**

The initial announcement of OS/360 and DOS/360 USA Standard COBOL (P68-145) did not provide availability dates for certain functions. These functions have now been scheduled.

"Arrays of Structures" is a language facility that provides an easy method of defining and referring to data items in a PL/I program. This technique is used typically in the description of external data records -- especially spread information and historical data.

**DOS/360 USA Standard COBOL**

"Arrays of Structures" is a natural approach to data definition and is easier to learn and use than the alternatives: use of simple structures or based variables.

The BLOCK CONTAINS clause for the specific case where logical record size is greater than physical record size for data sets whose organization is DIRECT.

Availability will be concurrent with Model 20 PL/I, April 30, 1970.

This feature will be available June 26, 1970.

**OS/360 USA Standard COBOL**

This feature does not alter P69-4, "PL/I: A Powerful Language for the Model 20," but rather provides additional functional capability. This feature is provided in OS/360 PL/I-F, but is not provided in DOS/360 PL/I-D.

The following functions will be available September 30, 1970:

IBM System/360 Model 20 DPS PL/I (C33-6007) will be updated to reflect this additional feature. Availability will be announced in a future PRL.

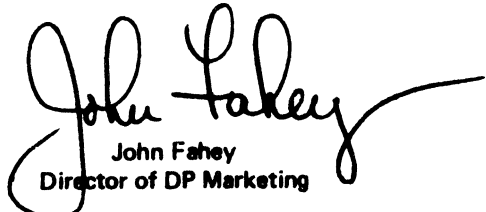
The BLOCK CONTAINS clause for the specific cases where logical record size is greater than physical record size.

Physical, rather than logical REWIND/NO REWIND interpretation.

Label processing at CLOSE time, rather than at end of file on input and update mode sequential data sets.

Implementation of the USE BEFORE/AFTER STANDARD LABEL clause.

Note: OS/360 USA Standard COBOL is a replacement for OS/360 COBOL F. COBOL F will be withdrawn two years after availability of OS/360 USA Standard COBOL as stated in P68-145.

  
**John Fahey**  
Director of DP Marketing

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

**FOR IBM INTERNAL USE ONLY**

Published by DP Sales Publishing Services, WTHQ

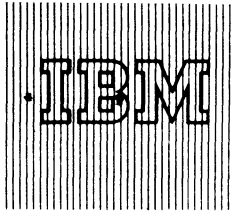
Release Date: June 20, 1969  
Distribution: All Areas

**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.
- [4] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.





P69-89

PROGRAM ANNOUNCEMENT

2770 DATA COMMUNICATION SYSTEM, A NEW BSC TERMINAL SYSTEM SUPPORTED BY ... OS/360 BTAM ... DOS/360 BTAM ... OS/360 TCAM ... OS/360 RJE

DOS/360 BTAM, OS/360 BTAM, OS/360 TCAM

The 2770 Data Communication System consists of a 2772 Multi-purpose Control Unit and a variety of input/output devices. The 2772 and the input/output devices form a multi-purpose terminal which meets the function, volume and media requirements of a variety of applications. Communication between System/360 and the 2772 may be achieved over point-to-point non-switched, multipoint non-switched, or point-to-point switched communication lines.

Availability... DOS/360 BTAM June 30, 1970; OS/360 BTAM September 30, 1970; OS/360 TCAM IQ71.

The DOS/360 BTAM, OS/360 BTAM and OS/360 TCAM programs support the 2770 Data Communication System when operating with the System/360 Models 25 (DOS only), 30 (DOS only), 40, 50, 65, 67, (65 mode), 75, 85 (OS only) and 91 (OS only) in a point-to-point or multi-point leased or private network or switched (dial) network. The System/360 Model 25 can use the Integrated Communications Attachment (ICA), 2701, or 2703. The 2770 terminal may use EBCDIC or USASCII code. The input/output media are keyboard, printer, cards, display, magnetic tape, MICR documents, and paper tape. Terminal special feature which may be used are:

- . Multipoint Data Link Control
- . EBCDIC Transparency
- . Automatic Answering
- . Conversational Mode
- . Processor Interrupt
- . Buffer Expansion
- . Transmit-Receive Monitor Print
- . Keyboard Correction
- . Synchronous Clock
- . Display Format Control
- . Identification

The 2770 may share a non-switched multi-point line with the 2780, 2715 Model 2, 1800, 1130, and Model 20. In a switched network, the 2770 may communicate with a System/360 computer by using the same termination (phone number) at the computer that is used by other BSC terminals, such as another System/360, a Model 20, 1130, 1800, 2715 Model 2 and 2780. All terminals on a multi-point line or using a common switched termination must use the same type of communication data set (modem) or approved IBM and announced PTT) and use the same transmission code. Additional information

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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

FOR IBM INTERNAL USE ONLY

Release Date: July 14, 1969  
Distribution: All Areas

on intermix restrictions is contained in SRL Manuals C30-1005 and Letter No. P69-95.

#### Minimum System Configuration

##### DOS/360 BTAM

Main Storage - 32K bytes ... Standard Instruction Set ... One 1052 Printer Keyboard ... One Selector Channel for System Residence ... One Multiplexer channel or an additional selector channel for communication control units (multiplexer channel only for S/360 M25) ... One Card Reader\* (1442, 2501, 2520, or 2540) ... One Printer\* (1403, 1404, 1443) ... One 2311 or 2314 Disk Storage Device ... Communication equipment necessary to interface to the communication line.

##### OS/360 BTAM and OS/360 TCAM

Main Storage - 128K bytes ... Standard Instruction Set ... Storage Protection ... Interval Timer ... One 1052 Console ... One selector channel for system residence ... One multiplexer channel or an additional selector channel for communication control units ... One Card Reader\*\* (1442 or 2540) ... One Printer\*\* (1403, 1404, or 1443) ... Two 2311 or 2314 Disk Storage Devices ... Communication equipment necessary to interface to the communication line.

#### Publications (Availability to be announced by PRL)

IBM System/360 Disk Operating System ... Basic Telecommunications Access Method ... C30-5001 ... IBM System/360 Operating System ... Basic Telecommunication Access Method C30-2004 ... IBM System/360 Operating System ... Telecommunications Access Method (TCAM).

IBM System/360 OS and DOS ... System Planning for improved BTAM support of Remote Synchronous Stations, C30-1005

\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360N (March 69 Reprint)

\* \*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360S.9 (May 1969 Revision)

#### OS/360 RJE

Operating in conjunction with the OS/360 RJE program in a central system and attached by a binary synchronous communication line, the 2770 terminal provides for transmission of input OS/360 jobs and work stations commands to the central station through an attached card reader and the receiving of transmitted command responses and job output of an attached printer or punch.

Availability ... September 30, 1970.

The 2770 system supported consists of a 2772 Control Unit with a 2502 Card Reader, a 2213 Printer, and an optional 545 Card Punch. If punching capability is not desired the card punch may be omitted.

The programing support requires the following special features on the 2772: EBCDIC Transparency (3650) and Extended retry Transmission (9140).

The following 2772 special features are supported on an optional basis: Buffer Expansion (1490) and Multi-point Data Link Control (5010 required if terminals share a common non-switched line).

The 2770 Data Communication Systems which are to be used as work stations are defined during RJE program generation. The 2772 may be operated in conjunction with other 2770 or 2780 Data Communication Terminals on the same non-switched line. A switched line connection at the central processor will be available to either a 2770 or 2780 work station. The 2780 and 2770 work stations cannot share the same non-switched multipoint line or switched connection with processor work stations (1130, Model 20, System/360).

Prior to operating as an RJE work station, the 2770 device addresses must be properly set up by the operator in accordance with RJE requirements.

#### Minimum System Configuration

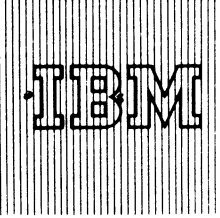
Main Storage -- MFT - 256K bytes, MVT - 512K bytes ... Standard Instruction Set ... Storage Protection ... Interval timer ... One 1052 Console ... One selector channel for system residence ... One multiplexer channel or an additional selector channel (2701 only) for communication control units ... One 2701 or 2703 equipped with appropriate feature for binary synchronous communication in EBCDIC transparent mode ... One card reader\* (1442 or 2540) ... One printer\* (1403, 1404, or 1443) ... Two 2311 or 2314 Disk Storage Devices ... Communication equipment necessary to interface to the communication line.

#### Publications

IBM System/360 Operating System Planning for IBM 2770 RJE Support (C30-2015).

  
John Fahey  
Director of DP Marketing

\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360S.9 (May 1969 Revision)



P69-90

PROGRAM ANNOUNCEMENT

**2715 TRANSMISSION CONTROL UNIT SYSTEM SUPPORTED UNDER OS/360 BTAM AND DOS/360 BTAM**

Telecommunications support under both OS/360 BTAM and DOS/360 BTAM is being expanded to include support for the 2715 Transmission Control Unit System.

This support consists of modifications to BTAM and new Assembler MACRO definitions to support generation of user table-defining statements to object format.

Availability -- DOS/360 June 30, 1970, OS/360 September 30, 1970.

The DOS support applies to S/360 Models 25, 30, 40, 50, 65, 67 (in 65 mode) and 75. The OS support applies to S/360 Models 40, 50, 65, 67 (in 65 mode), 75 and 85.

**BTAM Modifications**

Two main modifications will be made to BTAM. One provides for centralized logging of errors collected by the 2715 relating to itself and devices attached to it. This facility is useful for Customer Engineering maintenance of the 2715 complex. The second provides for 2715 originated messages to be displayed on the S/360 console. This means that the S/360 console can receive informational messages if the 2715 has no 2740 attached or if the 2740 is inoperative.

**2715 Table Translator**

DOS/360 and OS/360 Assembler Language macros are provided to define user tables for the 2715.

The macros constitute simple parameters (mostly keyword types) which wholly define the control to be exercised upon data entered through the various input devices on the 2715. This control consists of input definitions (e.g., card, badge, manual) up to 16 data entries per transaction, digit validation, routing of the completed transaction (e.g., 2715 integral disk), and internal or external message routing from an input device on the 2715 to another output device on the same 2715 (this last facility requires the expanded capability feature).

After the macros have been translated to object format, the user's BTAM program can transmit them to the 2715 by reading the object module (without using LINK-EDIT), formatting each card into a 2715 message and using normal BTAM BSC WRITE facilities.

**2715 Local/Remote Support**

The following 2715 arrangements are supported under BTAM.

**2715 - Local**

BTAM supports the 2715 Model 1 Transmission Control Unit as a local attached BSC device to System/360 multiplexer channel. In this arrangement, support is for point-to-point non-switched.

Note: There is no need for communication equipment (modem or data set) in this arrangement.

**2715 - Remote**

BTAM supports the 2715 Model 2 Transmission Control Unit as a BSC device operating over point-to-point switched or non-switched, or multipoint non-switched Communication networks via SDA II on a 2701 or the Synchronous Adapter on a 2703 installed on the System/360 multiplexer channel, or via ICA on the System/360 Model 25.

Note: BTAM supports the 2701 on a selector channel for point-to-point non-switched operation.

A 2701, 2703, or Model 25 operating with the 2715 Model 2 requires the following Communication code arrangements:

2701 EBCDIC (9060), Transparency (8029)

2703 EBCDIC Synchronous Terminal Control (7715)

Model 25 Transparency (9751, 8752)

See reverse side for Minimum System Configurations and Publications.

  
**John Fahey**  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: July 14, 1969

Distribution: All Areas

## Minimum System Configuration

### DOS/360 BTAM

Main Storage - 32K bytes ... Standard Instruction Set ... One 1052 Printer Keyboard ... One Selector channel for System residence ... One Multiplexer channel or an additional selector channel for communication control units ... One Card Reader\* (1442, 2501, 2520, or 2540) ... One Printer\* (1403, 1404, or 1443) ... One 2311 or 2314 Disk Storage Device ... Communication equipment necessary to interface to the communication line.

### OS/360 BTAM

Main Storage - 128K bytes ... Standard Instruction Set ... Storage Protection ... Interval Timer ... One 1052 Console ... One selector channel for system residence ... One multiplexer channel or an additional selector channel for communication control units ... One Card Reader\*\* (1442 or 2540) ... One Printer\*\* (1403 or 1443) ... Two 2311 or 2314 Disk Storage Devices ... Communication equipment necessary to interface to the communication line

\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360N.9 (March 69 Reprint)

\*\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: P360S.9 (May 69 Revision)

## Publications

IBM System/360 OS and DOS Planning for Improved BTAM support of Remote Binary Synchronous Stations, C30-1005.

General Information - Binary Synchronous Communication Manual

BTAM Planning for 2790 Data Communication System Support.

The following publications will be updated, concurrent with program availability, to reflect 2715/2790 capability:

IBM System/360 DOS BTAM  
IBM System/360 OS BTAM

Availability of the publications will be announced in a future PRL.

### 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 World Trade Data Processing

P69-91

# TCAM

## PROGRAM ANNOUNCEMENT

An advanced Telecommunication Access Method for OS/360

TCAM is an advanced access method that incorporates and extends the functions of the Queued Telecommunication Access Method (QTAM).

TCAM establishes a new interface which may be utilized in the development of telecommunication oriented programs in an environment where multiple applications are envisioned for terminal devices.

Availability -- 1Q71

### Highlights

- Support for Binary Synchronous Communications (BSC) and Start/Stop terminals, audio and display products.
- Capabilities such as core queuing and a terminal/application program lock function provide support for conversational operations.
- Recovery and Serviceability features aid in achieving increased system availability.
- Debugging aids are provided to assist installation and program maintenance activities.
- User queuing options - reusable and/or non-reusable disk queuing with optional multiple arm capability. Also core queuing with or without disk backup.
- Overall design provides for effective system control in the non-dedicated terminal environment. A single terminal may be utilized in several different applications throughout the processing day. The user may dynamically establish a logical connection between any given terminal and TCAM application program on a message basis or for the duration of a functional program. In addition, information may be collected and queued by the Message Control Program. The interface between the queue and the application program is not established until opened by the application program. Thus, the requirements for application program residency are reduced.
- TCAM provides effective application program support with a maximum degree of independence from communications network or terminal considerations. Device dependent codes and characters may be handled in the TCAM Message Control Program. TCAM is designed for maximum compatibility with SAM. All meaningful options have a compatible functional and equivalent for Teleprocessing operations. GET/PUT (QSAM) and READ/WRITE/CHECK/WAIT (BSAM) support is provided for fixed, variable or undefined record formats with move mode of data transfer.

Compatibility - Most applications now under QTAM can be adapted by converting QTAM Message Control macros to TCAM macros and simply reassembling the application programs.

In general, any QTAM, QSAM, or BSAM application program utilizing options available in TCAM may be easily adapted to run under TCAM. Minimal recoding is required if the user elects to incorporate information relative to the data source or destination, or to utilize any of the communications network control facilities which are provided. TCAM will co-exist with all OS/360 functions at the time of release. Remote Job Entry (RJE), Conversational Remote Job Entry (CRJE), FORTRAN Subroutines for Data Transmission between a S/360 and 1130, Satellite Graphic Job Processor (SGJP) and other BTAM or QTAM programs supporting other communications lines may co-reside with TCAM.

Operator Control - A variety of IBM supplied Operator Control Messages enable the user to dynamically examine or alter the status of the telecommunications network.

Message Control and Editing - A number of enhancements over QTAM include improvements in switched network support, buffering facilities, priority message handling, flexible queue definition, and management of buffered BSC terminals.

Expanded Checkpoint/Restart facilities provide for restart after system failure and for warm-start following a quick but orderly close.

The support for non-IBM terminals currently announced under BTAM and QTAM is extended to this program.

Additional details are on the inside pages.



John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: July 14, 1969  
Distribution: All Areas

P69-91

## Message Control Program Facilities - Highlights

The basic external appearance of the Queued Telecommunications Access Method (QTAM) is continued but highly refined and expanded in TCAM. A single Message Control Program (MCP) operates asynchronously from and supports one or more independent application programs (Message Processing programs). The Message Control Program consists of routines to establish the line control required for the various kinds of terminals and modes of connection, and to control the handling and routing of messages in accordance with the user's requirements. The Message Control Program is defined and generated by the user with TCAM macro-instructions.

The primary capabilities provided by the Message Control Program are:

- . Inviting/selecting terminals to transmit/receive within user specified limits.
- . Dynamic buffer management using PCI for efficient utilization of main storage for sending, receiving and handling message data is optional.
- . Extended conversational application support is provided. These include the ability to temporarily lock a terminal to an application program and provide for different terminal handling requirements via a path facility. One application may service many terminals concurrently.
- . Handling messages and directing the flow of data through the system on a priority level basis.
- . Maintaining Core/Disk queues of data (messages) for terminals and application programs.
- . Checking for errors in transmission and if retries are unsuccessful, taking alternate paths or other corrective action.
- . On-line terminal tests.
- . Operator control messages and macro facilities for controlling the operation of the system by interrogating and modifying activity on a line or terminal basis. Specifying properties or limitations for messages. Provide for the dynamic alteration of system functions according to user specified conditions.
- . Maintains operator-to-system communication through terminals designated as TCAM Operator Control terminals. The system console or certain remote terminals can be designated as the operator control consoles.
- . Coordinating the transfer to and from application programs in response to GET/PUT - READ/WRITE macros and in accordance with user specified parameters.
- . Checkpoint and Restart to aid in recovery and for temporary system shutdown. Restart without loss of unsent or partially unsent messages. Provide for checkpoint synchronization of Message Control Program and application programs.
- . A variety of service functions such as maintaining

message counts, logging data segments or complete messages on a secondary storage device, editing out device dependent characters, time or date stamping and checking the origin of incoming messages.

## Application Program Interface

Application programs run asynchronously with the Message Control Program and are usually in another partition or region. Messages for application programs are queued by the Message Control Program.

A message from any TCAM terminal can be routed to any TCAM application. In addition, facilities are provided which allow a terminal to be locked to a given application program for the duration of the application or until explicitly terminated.

The interface between the application program and the MCP (and associated queues) is activated/deactivated by application program OPEN/CLOSE macros. The application program need not be resident while records processed by that application are collected from or transmitted to the terminals involved.

An application program need not be concerned with the terminal at which data originated, nor with the transmission code or line control. All device dependent characteristics may be removed/added in the MCP.

Application programs effect data transfer to and from the MCP using either GET/PUT (QSAM) or READ/WRITE/CHECK/WAIT (BSAM) macro instructions. Support is provided for fixed, variable, and undefined record formats. The user may specify either move or locate mode (but not substitute mode).

Time of entry to EODAD is controlled by the user due to the real-time nature of the TCAM queue for the application program. The SYNAD exit is supported for logical errors in the same manner as support under QSAM and BSAM. This support includes the SYNADAF and SYNDRLS features. POINT is supported only in conjunction with message retrieval using GET or READ.

With this support, the user can write an application program just as he would a QSAM or BSAM program and that program will run under TCAM as well. Optionally, the user can incorporate communications oriented considerations.

He can specify in a PUT or WRITE work area prefix the destination to which a message is to be sent. Also, he can receive in a GET or READ work area prefix the name of the source terminal. He may also want to know or indicate to TCAM the description of the work area contents in TCAM terms; that is, first segment, intermediate segment, last segment, or single-segment message. Options may be included at execution time via a DD card.

TCAM also provides a variety of network control functions which may be executed from an application program. An application program may also send control messages to the operator control facility and receive related responses.

Synchronization between the MCP and application programs for Checkpoint/Restart is provided. Each time a network environment checkpoint is taken, an indication is made to the application program. The next time a GET or READ is issued, control is given to the application program so that an OS/360 checkpoint may be taken.

Message Control Program main storage buffers for data exchange with the application program are required only during the time that the application program is actually OPEN.

Data exchange between the MCP and the Application program is managed internally through a data control block. Added flexibility is provided the user by allowing him to name the MCP process queue to be connected logically with the application program data control block at object time.

### Debugging Aids

Additional facilities are provided to aid in debugging the communication network and MCP. External compatibility allows the user to test his application program using QSAM or BSAM. When the application program has completed testing, the user can change to TCAM by DD card change at object time.

#### Other functions are:

- Routines to format the MCP control blocks in a storage dump of the MCP partition or region.
- A flow trace to record I/O activity on the communication lines.
- A Cross-Reference Table which is a table of control block addresses and pointers.
- The ability to invoke serviceability routines.
- A sub-task trace feature.
- Trap points will be provided and documented.
- The ability to dynamically show (VIA SNAP macro) line I/O trace table.

### Operator Control Facility

The Operator Control Facility provides a wide variety of functions which enable the user to dynamically examine or alter the status of the Teleprocessing network.

One primary and any number of secondary operator control terminals may be designated. All operator control terminals can generate operator control messages and receive related responses. Internally generated error messages are routed only to the primary operator control terminal.

#### The functions provided are:

- . Activation and deactivation of terminals.
- . Activation and deactivation of lines.
- . Switching between Autopoll and the programming polling facility.
- . Activating and deactivating invitation list entries.
- . Starting and stopping the trace facility.
- . Releasing messages queued for a terminal.
- . Holding messages in a queue for a terminal.
- . Interrogating the status of a line, queue, or terminal.
- . Changing the time of polling delay.
- . Invoking or changing system delay interval; altering

- terminal table entries.
- . Initiation of system closedown.

The operator control facility is supported by either resident or non-resident routines.

The user requests the above functions by entering an operator control message from any terminal which has been designated as operator control terminal. Such a message is identified by a special identification sequence. A remote terminal and/or the system console may be designated as an operator control terminal.

An application program may function as an operator control terminal sending commands to the MCP and receiving appropriate responses.

Facilities are provided for switching the primary control terminal to any one of the secondary control terminals. Facilities are also provided for returning incorrectly formatted commands and for providing common language responses where appropriate.

### Performance Oriented Characteristics (Relative to QTAM)

- . A variety of user options provide flexibility in tailoring the support to suit a particular environment.
- . Operator Control and Error Recovery routines are optionally transient.
- . Comprehensive buffer management facilities. Fixed and variable length Input/Output buffers. No end-of list overhead for wrap type invitation list.
- . User can elect core-queueing, disk queueing, or core queueing with disk backup.
- . Minimum additional core requirements for support of multiple terminal types.
- . Improved internal interface with OS/360.
- . Low-overhead interpartition region data transfer between application programs and the MCP.
- . Improved support for buffered terminals.
- . Internal and external disk queue management improvements.
- . Miscellaneous functional capabilities such as ability to set switches to bypass message control functions for certain applications.
- . Flexible queue definitions. Priority message handling.
- . Multiple Arm Queueing option.

### Recovery and Serviceability

Extensive facilities for recovery and serviceability are integrated into the basic design of TCAM -- not added on as exception routines. These facilities are intended to aid in achieving increased system availability by operating on-line and concurrent with unaffected portions of the communications network. Improved Checkpoint/Restart capability is provided. Specific

capabilities include:

- . Expanded Error Recovery Procedures
- . Alternate Destination Definition
- . Ability to shut down a failing terminal or line
- . Error statistics accumulation by terminal
- . Provides interface and input to OBR/SDR
- . Checkpoint with reconstruction on restart of last complete message is performed for each active communication line.
- . Warm Start following a quick but orderly close
- . On-Line terminal tests initiated from a remote device or by the local operator
- . Synchronization with OS/360 checkpoint facility in Application Programs

#### Devices Supported

##### Control Units Supported

TCAM supports any combination of the 7770 Audio Response Unit and the IBM 2701, 2702, or 2703 telecommunications control units on the same multiplexer channel. Up to eight control units can be attached directly to the multiplexer channel. TCAM also supports the IBM 2848 Display Control attached directly either to the multiplexer or a selector channel.

##### Terminal Support Details

1. Terminals attached through a 2701, 2702, or 2703 telecommunications control unit.
  - . 1030 Data Collection System on a non-switched network. (Note: The 1032 Digital Time Unit cannot be attached through a 2701 Data Adapter Unit.)
  - . 1050 Data Communication System on a switched or non-switched network.
  - . 1060 Data Communication on a non-switched network.
  - . 2260-2848 Display complex (remote) on a non-switched network (2701 only).
  - . 2265-2845 Display Station (remote) on a non-switched network (2701 only).
  - . 2740 Communications Terminal on a non-switched network, four types:
    - Basic 2740
    - Basic 2740 with station control
    - Basic 2740 with station control and checking
    - Basic 2740 with checking
  - . 2740 Communications Terminal on a switched network, four types:
    - Basic 2740
    - Basic 2740 with transmit control and checking
    - Basic 2740 with checking
    - Basic 2740 with transmit control
  - . 2760 Optical Image Unit attachment to the 2740 on a non-switched network.
  - . World Trade Telegraph Terminals on a non-switched network.
  - . 2740 Model 2 Communications Terminal on a non-switched network, with or without checking, and with or without the Buffer Receive feature.

- . AT&T 83B3 Selective Calling Stations on a non-switched network.
- . Western Union Plan 115A outstations on a non-switched network.
- . Common Carrier (8-level code) TWX Stations on a switched network (for example, AT&T Model 33 or 35 Teletypewriter Terminal -- dial service.)
- . World Trade Telegraph Terminals (W.T.T.A. terminals) on a non-switched terminal.

2. Terminals attached through an IBM 2702 or 2703 transmission control unit equipped with Auto Poll feature operating on a non-switched network:

- . 1030 Data Collection System
- . 1050 Data Communications System
- . 1060 Data Communication System
- . 2740 Communication
  - Basic 2740 with station control
  - Basic 2740 with station control and checking
- . 2740 Communications Terminal Model 2 with or without record checking, and with or without buffer receive.

3. Binary Synchronous terminals attached through a 2701 or 2703 telecommunications control unit on switched or non-switched networks:

- . 2770 (USASCII, EBCDIC)
- . 2780 (USASCII, EBCDIC, 6-bit) Data Transmission Terminal
- . 1130 (EBCDIC)
- . System/360 Model 20 (USASCII, EBCDIC)
- . System/360 CPUs operating as a BCS terminal. (Not as another TCAM supported system).

4. Audio terminals attached through a 7770 Model 3 Audio Response Unit on a switched network.

5. 2260-2848 Display Complex (Local).

#### Minimum System Configuration

Device requirements for MFT or MVT apply. TCAM operates under either control program option on a System/360 Model 40 or above having at least 128K of main storage. Normally, space on one or more 2311 or 2314 DASD units is needed for intermediate storage of message queues.

#### Publications

The publications supporting TCAM are: A TNL to IBM System/360 Operating system - Planning for the Telecommunication Access Method (TCAM), and a Programmer's Guide for Conversion and Installation of the Telecommunication Access Method (TCAM).

Availability will be announced in a future PRL.

#### OS/360 QTAM Maintenance

TCAM will functionally supersede OS/360 QTAM. OS/360 QTAM will be available for one year after the availability of TCAM. After that time, QTAM will receive PTF maintenance in accordance with normal OS/360 release maintenance practices.





**PROGRAM ANNOUNCEMENT**

**1800 COMMUNICATION ADAPTER SUPPORTED BY DOS/360 AND OS/360 BTAM**

One 1052 printer keyboard ... One 2701\* or 2703 attached to the multiplexer channel communication equipment necessary to interface to the communication lines.

The Basic Telecommunications Access Method (BTAM) under the Operating System/360 (OS) and the Disk Operating System/360 (DOS) is being expanded to support the 1800 Communication Adapter (CA).

**Publications**

An Installation Newsletter on Planning for OS/360 BTAM 1800 Communications Adapter Unit support and Planning for DOS/360 BTAM 1800 Communications Adapter support will be published after announcement.

Availability -- DOS/360 June 30, 1970, OS/360 September 30, 1970.

The IBM System/360 Operating System Basic Telecommunication Access Method manual and the IBM System/360 Disk Operating System Basic Telecommunication Access Method manual will be updated to include this programming support at release time.

The CA feature extends the capabilities of the 1800 System by permitting it to communicate with other systems which have the appropriate communication attachment. The functional characteristics of the CA feature is a subset of the Binary Synchronous Communication System (BSCS). The CA can, therefore, communicate with the SDA II Adapter of the 2701, and 2703 with Synchronous Features, the 1130, other 1800s, the 2780 and other devices that use these common controls. Up to four CAs can be put on an 1800.

The CA provides point-to-point and multipoint (tributary station only), half duplex, data transmission. The communication facilities may be either private, leased voice-grade lines, or switched telephone networks. In dial-up network operation, the CA automatically answers calls originated by a remote station (Auto-Answer function).

  
**John Fahey**  
Director of DP Marketing

**Minimum Machine Configuration**

*DOS/360 BTAM*

32K Bytes of Main Storage ... One selector channel for system residence ... One multiplexer channel ... One 2311 or 2314 direct access device ... One card reader\*\* ... One card punch\*\* ... One Printer\*\* ... One 1052 printer keyboard ... One 2701\* or 2703 attached to the multiplexer channel communication equipment necessary to interface to the communication lines.

*OS/360 BTAM*

128K Bytes of Main Storage ... One selector channel for system residence ... One multiplexer channel ... Two 2311 or 2314 direct access devices ... One card reader\*\*\* ... One card punch\*\*\* ... One printer\*\*\* ...

\*The 2701 can be attached to the selector channel under the conditions defined in the sales manual.

\*\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360N.9 (March 69 Reprint)

\*\*\*One 2400 series Magnetic Tape Drive may be substituted for each device. Reference: Page P360.S.9 (May 69 Revision)

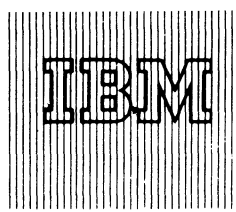
**FOR IBM INTERNAL USE ONLY**

Release Date: July 14, 1969  
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.
- [4] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**



PROGRAM ANNOUNCEMENT

1800 MPX EXPANDED TO INCLUDE THE 1800/2790 MPX COMMUNICATION SYSTEM

Support under 1800 Multiprogramming Executive System(MPX) is expanded to include the 1800/2790 MPX Communication System provides support for 2790 Data Communication System when attached to the 1800 Data Acquisition and Control System via the 1800/2790 Adapter.

The 1800/2790 MPX Communication System:

- will support two loop adapters, each with a maximum of 100 Area Stations (IBM 2791 and IBM 2793 in any combination.)
- will support the 1800/2790 Data Communication System in addition to all the capabilities that exist in MPX Version 2.
- will be included as a System Generation option exercised by the user. Thus, an MPX user who does not have the 1800/2790 Data Communication System will not be affected.
- will provide an on-line diagnostic for the 2791/2793 Area Stations.
- consists of a set of data buffers, system device tables and three function programs.

The 1800/2790 Loop Adapter Input/Output Control Routine (IOCR) controls the sending and receiving of all data to and from the devices attached to the loop. Error recovery programs and fault isolation routines are part of IOCR.

The data received from the loop is acted on by the Data Control Program (DC) as defined by the user in a Transaction Control List.

Once the data has been acted upon by the Data Control Program, it can be routed to an output file by the Message Assembly Director (MAD). The files are defined by the user.

The 1800 Macro Assembler

The capability of MPX will further be extended by the availability of an 1800 Macro Assembler. Several macros will be included in the Macro Library to aid the 1800/2790 user in defining his Transaction Control List.

Core Storage Requirements

Table with 2 columns: Component Name and Storage Requirement. Includes Loop Adapter Input/Output Control Routine (IOCR) at 1800 words\*, Including Error Recovery Program (ERP) at 300 words, Fault Isolation Routine (FIR) at 300 words, Data Control Program (DC) at 300 words\*, Message Assembly Director (MAD) at 1000 words, and Plus 1442 (if called) at 650 words\*\*.

\*Must be core resident when the 1800/2790 Loop Adapter is in operation.
\*\* May share a local area.

Table sizes depend on number, type, and features of the devices attached to the loop. Size of transaction control list is user dependent.

Release Date: July 14, 1969
Distribution: All Areas

Minimum System Requirements

To obtain the full capabilities of the IBM 1800 Multiprogramming Executive System or to utilize the 1800/2790 Communication System, the machine configuration shall be at least: one 1801/1802 Processor Controller with a minimum of 24K words of core storage...one 1053 Printer or IBM 1816 Printer-Keyboard...one 1442 Card Read Punch...one 1810 Disk Storage Unit, Model A2 or B2, or one 2311 Disk Storage Unit.

The system can support (except an 1800/2790 Data Communication System) an 1801 or 1802 Processor-Controller with 16K of core storage, one 1810 Disk Storage Drive, a 1053 Printer and a 1442 Card Read Punch for limited MPX functions.

Machine Features Supported

In addition to the above, the following optional machine units and features are supported by the MPX system:

Process-Controller with up to 64K words of core storage...Up to eight 1053 Printers...Up to three 1810 and eight 2311 Disk Storage Drives...a 1443 Printer...Up to two 2401 Magnetic Tape Units...Up to eight binary synchronous communication lines...1627 Plotter...Up to two 1800/2790 Adapters...Up to 100 2791/2793 Area Stations, 1024 2795/2796 Data Entry Units, 100 1053 Printers and 300 1035 Badge Readers per 1800/2790 Adapter...1054 Paper Tape Reader...1055 Paper Tape Punch...Analog input...Digital Input...Analog/Digital Output...a second 1442 Card Read Punch.

Availability

The 1800/2790 MPX Communication System is to be delivered in MPX Version 3 scheduled for September 1970.

Publications

SRL 1800/2790 MPX Communication System and Technical Newsletters to MPX Introduction (C26-3718)...MPX Subroutine Library (C26-3724)...Error Procedure Manual (C26-3727)...MPX Operating Procedures (C26-3725)...MPX Programmer's Guide (C26-3720)...Program Logic Manual (Y26-3726)...availability will be announced in a future PRL.

Handwritten signature of 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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 World Trade Data Processing

P69-94

## PROGRAM ANNOUNCEMENT

### IBM 1800 MULTIPROGRAMMING EXECUTIVE SYSTEM (MPX) VERSION II

The Multiprogramming Executive System (MPX) is a real-time multiprogramming operating system capable of maximizing the efficiency and throughput of the IBM 1800 Data Acquisition and Control System. MPX is designed for asynchronous control of independent processes while additionally performing batch processing functions. The sophisticated input/output handling techniques which make the central processing unit available during I/O and interval timer operations.

Availability -- June 1970.

MPX control programs are modular to provide extended flexibility in covering real-time applications, and to minimize the need for user modifications due to unique application requirements.

Multiprogramming is achieved through the programmed interrupt feature, which eliminates time-consuming list searching.

The MPX Executive Director directs handling of process and data processing input/output interrupts in whatever priority you select. The system provides timer control over the process, supervises the execution of real-time core-loads or subroutines dictated by the process, and makes the system available to the Batch Processing Monitor.

The MPX Input/Output Control Routines (IOCR) provide complete input/output overlap capabilities within the system and for the user. Overlap provides maximum utilization of the central processing unit during input/output operations and timed intervals, in addition to maximum I/O device throughput. The system automatically resolves all conflicting requests for a device from the random sources.

The MPX Batch Processing Monitor (BPM) allows execution of batch jobs while the system is on-line. In a real-time environment, BPM functions are automatically executed whenever real-time executions are inactive.

To enhance the capability of MPX to satisfy expanded customer requirements and to provide the capability for the 1800 Data Acquisition and Control System to satisfy the on-line, real-time interface requirements with the process, in large multicomputer installations, the following new features are being included:

Complete system support for core increments to 65,536 words (16 bit).

System Residence and shared file support for the 2311 Disk Storage Unit.

Binary Synchronous communication support to System/360, the 1130, the 2780 and other 1800s.

Multiple core resident special area (SPAR) core-loads providing multitasking (more than one task in a state of execution) within a partition.

Disk input to the FORTRAN Compiler.

Keyboard input to the Batch Processing Monitor (BPM), Supervisor and Disk Management Program (DMP).

User specified software timers to a maximum of 32.

Ability to compile a program that is larger than the mainline area in which it is compiled.

Error logging for Communication Adapter and Selector Channel in CE Core.

On-line diagnostics for Communication Adapter, Selector Channel, 2841 and 2311.

#### Core Storage Requirements

MPX minimum executive -

7500 words for: An 1801/1802 with 24K words storage ... One 1053 Printer ... One 1810 Disk Storage Unit (2 drives).

8000 words for: An 1801/1802 with 24K words storage ... One 1053 Printer ... One 2311 Disk Storage Unit.

#### 2311 IOCR

1000 words if 1810 IOCR is included in the system ... 1200 words if only 2311 IOCR is included.

#### Communications Adapter IOCR

1900 words without multipoint ... 2000 words including multipoint.

#### Minimum System Requirements

To obtain the full capabilities of the 1800 Multiprogramming Executive System, the machine configuration shall be at least:

One 1801/1802 Processor-Controller with a minimum of 24K words of core storage ...  
One 1053 Printer or IBM 1816 Printer-Keyboard ...  
One 1442 Card Read Punch ... One 1810 Disk Storage Unit, Model A2 or B2, or One 2311 Disk Storage Unit.

The system can support an 1801 or 1802 Processor-Controller with 16K or core storage, one 1810 Disk Storage Drive, a 1503 Printer and a 1442 Card Read Punch for limited MPX functions.

#### Machine Features Supported

In addition to the above, the following optional machine units and features are supported by the MPX system:

Process-Controller, with up to 65,536 words of core storage...  
Up to eight 1053 Printers...  
Up to three 1810 and eight 2311 Disk Storage Drives...  
a 1443 Printer...  
Up to two 2401 Magnetic Tape Units...  
Up to eight binary synchronous communication lines...  
1627 Plotter...  
1054 Paper Tape Reader...  
1055 Paper Tape Punch...  
Analog Input...  
Digital Input...  
Analog/Digital Output...  
a second 1442 Card Read Punch.

#### Supporting Publications

Availability of the following publications will be announced in a future PRL:

MPX System Introduction...  
MPX Planning Guide...  
MPX Operating Procedures...  
MPX Subroutine Library...  
MPX Program Logic Manual...  
MPX Communication Adapter SRL...  
MPX Error Messages and Recovery Procedures.



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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.



PROGRAM ANNOUNCEMENT

**BINARY SYNCHRONOUS COMMUNICATION COMPATIBILITY SUPPORT EXPANSION PROVIDES ADDITIONAL CAPABILITIES FOR OS/DOS BTAM, OS/RJE**

● OS/DOS BTAM

The DOS/360 BTAM and OS/360 BTAM support for Binary Synchronous Communication (BSC) stations is being expanded to provide ... [1] an improved identification (ID) capability and ... [2] to support changes which enhance the reliability and compatibility characteristics of BSC new terminal support.

New features or changes are:

*Identification (ID)* - Used in switched networks and allows the calling station to transmit its ID in the initial transmission (ID ENQ).

*Leading Graphics* - a sequence of one to seven characters which may proceed text response sequences.

*WACK (Wait Before Transmit Positive Acknowledgement)* - replaces WABT. WACK in response to text means that the receiving station is temporarily unable to continue to receive.

*RVI (Reverse Interrupt)* - used by the receiving station to interrupt the transmitting station when a series of messages is being transmitted.

*ITB (Intermediate Block Check)* - allows a block of data when transmitted over a communication line, to be divided into two or more sub blocks for checking purposes.

*Double Addressing* - used on multipoint lines to provide greater reliability when addressing the BSC stations.

*EOT/NAK Format Check* - implemented by all BSC stations to reduce the probability of a transmission line error turning a data or control character into an EOT or NAK character.

*New Terminals Support* - 2770, 2715, 1800.

**Availability**

The BTAM improvements will be available on compatibility and reliability improvements:

DOS/360 BTAM      September 30, 1969

OS/360 BTAM      October 15, 1969

DOS/360 BTAM ID    June 30, 1970

OS/360 BTAM ID    September 30, 1970

FOR IBM INTERNAL USE ONLY

Release Date:    July 14, 1969

Distribution:    All Areas

The BOS/BPS BSC macros which support these BSC improvements will be available October 15, 1969 (where applicable).

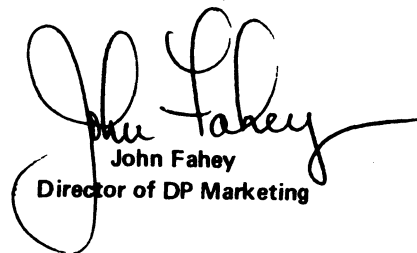
These improvements in the OS and DOS BTAM BSC programs are accompanied by modifications to the BSC programs for BOS, BPS, 1130, and S/360 Model 20 and by machine changes to the 2701, 2703, S/360 Model 25 ICA, S/360 Model 20 BSCA, and 2780.

See P69-5 and P69-52B for previous announcements. For the 2770, 2715, and 1800 refer to letters P69-93, P69-94 and P69-95.

See the inside pages for more information.

**OS/360 RJE**

The OS/360 Remote Job Entry (RJE) Program will continue to support the intermix of Remote Job Entry work stations as announced in letters P69.93, P69.7 (completed by P69-52B and P69-96).



John Fahey  
Director of DP Marketing

\* Compatibility and reliability improvements.

## OS - DOS/360 BTAM

**Identification (ID)** - The ID capability will be offered on all BSC stations. On some stations it will be available as a special feature. This capability will be used only in switched networks and allows the calling station to transmit its ID in the initial transmission (ID ENG). The called station can include its ID in the initial response. (ID ACK O or ID NAK). When the ID capability is used the initial communication on a switched network provides a level of security as well as circuit assurance.

**Leading Graphics** - This is a sequence of one to seven characters which may precede text response sequences. Leading graphics may precede ACK O, ACK 1 and NAK when operating in text mode. All BSC stations can receive responses which contain leading graphics.

**WACK (Wait Before Transmit Positive Acknowledgement)** - This control character sequence replaces WABT which was previously used by some stations. WACK in response to text means that the receiving station is temporarily unable to continue to receive but the last message was received correctly. WACK can be received by all BSC stations.

**RVI (Reverse Interrupt)** - This control character sequence can be used by the receiving station to interrupt the transmitting station when a series of messages (e.g., a card deck) is being transmitted. RVI tells the transmitting station that the last message was received correctly and that the transmission should be terminated. The transmitting station will transmit any "volatile" data (buffered data which may be lost as a result of termination) and then terminate the transmission. All BSC stations can receive RVI.

**ITB (Intermediate Block Check)** - All BSC stations will operate in the ITB mode. ITB mode allows a block of data, when transmitted over a communication line, to be divided into two or more sub blocks for checking purposes. The IUS (EBCDIC) or US (ASCII) character is used to indicate the point at which a check is made. The BCC/LRC check character(s) immediately follow the IUS/US character and communication continues without line turnaround. The ETB or ETX control character sequence terminates the transmission block and the response to the transmission applies to all ITB blocks of the transmission.

**Double Addressing** - Double addressing is used on multipoint lines to provide greater reliability when addressing the BSC stations (polling and selection). The addressing sequence will be two to seven characters with the first character duplicated.

**EOT/NAK Format Check** - The format check is implemented by all BSC stations to reduce the probability of a transmission line error turning a data or control character into an EOT or NAK character. The transmitting station will immediately follow all EOT and NAK characters with a pad character containing all one bits. The station receiving the control sequence will not recognize the EOT or NAK unless the following character satisfies the format check.

These changes in the BSC stations will be supported by the DOS/360 and OS/360 BTAM compatibility and

reliability improvements.

The DOS/360 and OS/360 BTAM support for the ID capability of BSC stations will be expanded to allow each BSC station to use a unique ID code, even when a common switched line termination (phone number) at the central computer is used. The user can specify a list of ID sequences which will be accepted by BTAM. Communications from a station using an ID sequence which is contained in the list will be accepted and an indication of the received ID will be passed to the user's program. The user may also elect to receive from stations which use no ID sequence.

The BTAM compatibility and reliability improvements and expanded ID capability allow the BSC stations to be more effectively intermixed on non-switched multipoint lines and switched networks. All of the restrictions listed in the chart (under Restricted Function Usage) in the BTAM BSC Intermix program announcement (P69-5 and P69-52B) are removed with the exception that the USASCII code cannot be used on a multipoint line or switched termination which includes an 1130, a 2715 or a S/360 using BOS/BPS where applicable.

Requirements which must be satisfied when BSC stations are used on a non-switched multipoint line or switched point-to-point network are:

- The same type of communication data set must be used for domestic installation.
- Approved IBM or announced PTT modem features must be used for World Trade installations.
- If any data set (modem) uses internal clocking all data sets on the line must use it.
- All stations on a non-switched line or using a common switched termination must use the same transmission code (EBCDIC or USASCII) and the same transmission speed.
- All stations must use the same number of addressing characters in the terminal list of BTAM. If the stations have different length addresses the shorter length addresses must be extended by placing leading SYN characters in the polling list.

DOS/360 BTAM and OS/360 BTAM support a System/360\* (acting as the control station) and the following BSC stations (any combination) on non-switched multipoint communication lines:

- System/360 Model 20 with Binary Synchronous Communication Adapter using the BSCA IOCS Program.
- IBM 1130 with the Synchronous Communication Adapter using the Communication Subroutines. (SCAT 3)
- IBM 2780 Data Transmission Terminal.
- IBM 1800 with the Communications Adapter feature using the BSCIO routines.



- . IBM 2770 Data Communication System
- . IBM 2715 Transmission Control Unit (not supported on S/360 Model 91)

DOS/360 BTAM and OS/360 BTAM support a System/360\* (acting as the central station) and the following BSC stations on point-to-point switched or non-switched lines. These stations on a switched network can use a common line termination (phone number) at the central computer.

- . System/360\*\* with the 2701 or 2703 using DOS/360 BTAM, OS/360 BTAM, or BOS/BPS BSC macros (2701 on non-switched only).
- . System/360 Model 25 with the Integrated Communication attachment using DOS/360 BTAM or BOS/BPS BSC macros (non-switched only).
- . System/360 Model 20 with the Binary Synchronous Communications Adapter using the BSCA IOCS program.
- . IBM 1130 with the Synchronous Communication Adapter using the Communication subroutines, (SCAT 2)
- . IBM 2780 Data Transmission Terminal.
- . IBM 1800 with the Communications Adapter feature using the BSCIO routines.
- . IBM 2770 Data Communication System.
- . IBM 2715 Transmission Control Unit (not supported on S/360 Model 91).

\*System/360 Models 25 and 30 with DOS, Models 40, 50, 65, 67 (in 65 model), and 75 with DOS and OS, or Models 85 and 91 with OS.

\*\*System/360 Models 25 and 30 with BOS/BPS or DOS, Models 40, 50, 65, 67 (in 65 model) and 75 with BOS/BPS, DOS or OS, and Models 85 and 91 with OS.

**Engineering Change Requirements**

The following machine changes are required to support the compatibility and reliability functions of this announcement:

2701	EC 306749
2703	EC 307702
2780	EC 307777
Mod. 25 ICA	EC 128244 (Micro Program)
	EC 132850 (Hardware)
Mod. 20BSCA:	
Sub Mod.	
2 & 4	EC 391563
Sub Mod. 5	EC 13018

**Publications**

The following publications will be updated, concurrent with program availability, to reflect these expanded BSC functions. Availability will be announced in a future PRL.

IBM System/360 Disk Operating System  
Basic Telecommunication  
Access Method, C30-5001

IBM System/360 Operating System  
Basic Telecommunication  
Access Method, C30-2004

IBM System/360 Model 20 - Binary  
Synchronous Communications  
Adapter, C33-4001

IBM 1130 Synchronous Communication Adapter  
Subroutines, C26-3706 and a TNL, N33-8058.

The following publications will be announced in a PRL.

General Information - Binary Synchronous Communication Manual ... System/360 Operating System and Disk Operating System Planning for Improved BTAM support of Remote Binary Synchronous Stations.

(Within this manual is included detailed information on the BSC compatibility changes.)

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

11-11-11



P69-96

Processing

Program Announcement

**OS/360 REMOTE JOB ENTRY (RJE)  
SUPPORT ON THE SWITCHED  
TELEPHONE NETWORK**

Current and future users of OS/360 Remote Job Entry (RJE) may operate by Remote Work Stations through the switched telephone network by using certain combinations of switched modems. This capability is currently available in RJE and the Work Station Programs for processor terminals (see Note). Supported Modem combinations on the switched network are as follows:

- RJE Central System/360 using the IBM 3976 modem, Model 3, in countries where approved.
- System/360, Model 20 and 2780 Remote Work Stations using any of the following modems:
  - IBM 3976, Model 3 in countries where approved.
  - GPO Type Datel 1, Model 5 in the United Kingdom.
  - PTT Type D 1200S (GH-2011 model 5) in Germany.
  - PTT Type GH-2002A in Sweden.
- The 1130 Remote Work Station using the IBM 3976, Model 3, in countries where approved.

Availability - Hardware availability of prerequisite machine features for operation with country modems, where required, is given in DP Letter No. 69-224.

Note: This announcement supercedes P69-52B as it applies to RJE.

Release Date: July 15, 1969

Distribution: All Areas


Programming support is currently available in the following programs:

- Remote Job Entry for OS/360 MVT or MFT II (360-RC-536)
- Remote Job Entry - 1130 to S/360 (1130-CQ-009)
- S/360 Remote Job Entry Work Station Program for BOS/360 (360B-CQ-311) or BPS/360 (360P-CQ-218)

Support for the Model 20 Remote Job Entry Work Station will be available with the program. See Program Announcement for availability information.

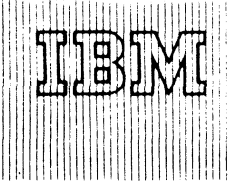
Publications - None are affected by this announcement.

Prerequisites - See DP Letter No. 69-224 for information relative to Communications facilities, speeds, configurations and attachment feature codes required for operation on the switched telephone network.

  
John Fahey  
Director of DP Marketing

P69-96





69-97

**VERSION 5 OF TSS/360 PROVIDES FUNCTIONAL SYSTEM ADVANCEMENT**

Version 5 of Time Sharing System/360 is now available. It provides incremental improvements in these areas:

**Duplex Function**

Optimized resource utilization through multiprocessing provided by full-duplex CPU support.

**Reliability and Serviceability**

VAM II, an improved virtual access method, allows creation of duplicate data sets ... supported by a new standalone utility, VAM2UT ... additional safeguards to data set integrity ... improved tape handling ... UPDTUSER command added to maintain user table.

**Human Factors**

New resource control function permits allocation of system resources to specific users and provides improved accounting facilities ... POD? command given increased flexibility ... language processor control improvements permit more efficient use of system procedures ... STARTUP modifications speed process ... improvements to TSS dump format.

**Performance**

Improved supervisor main storage allocation saves space ... new Public Volume Table eliminates repetitious public volume data ... improved control of POD growth in VPAM data sets ... improved DSS? command ... increased SYSGEN speed obtained by addition of 2540 card reader to minimum system configuration ... FORTRAN unnecessary activation of dynamic loader eliminated ... FORTRAN object programs are generated with tighter code.

**Maintenance**

Solutions to 310 APARs.

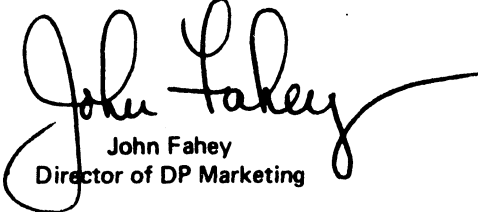
**Action Required**

Version 5 of Time Sharing System has a new program order number, 360G-CL-627. It replaces both 360G-CL-625 and 360G-CL-626 and may be restored to both 2311 and 2314 storage facilities.

Current users will receive a letter announcing the avail-

ability of the new version and a preprinted Program Order Form with instructions to order the new version through the branch office. Current users should use the preprinted Order Form to order the new version.

Details of the above, including engineering changes, reference material, basic program material, ordering instructions, and additional program material are on the inside pages.

  
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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.

FOR IBM INTERNAL USE ONLY

## Duplex Function

The TSS/360 potential for multiprocessing has been realized with the incorporation of full-duplex CPU support. The duplex CPU function provides for the simultaneous use of two processing units, which share all system facilities equally, in the same computing system. The advantages to be gained from full-duplex operation include:

- . Maximized utilization of system resources
- . Increased throughput
- . Increased reliability.

## Reliability and Serviceability

The reliability of public storage has been enhanced by the inclusion of an improved virtual access method, VAM II. Modifications to the volume format provide for more efficient processing, especially when opening and closing data sets.

- . Duplicate data sets can now be created
- . Recovery and validity check options are provided
- . Existing VAM data sets must be translated and converted to the new VAM II format; conversion features to accomplish this are included in the system
- . Multivolume VAM data sets are supported.

The independent utilities have been modified to support VAM II.

- . A new standalone utility, VAM2UT, has been added to provide a convenient mechanism for displaying and altering VAM II data sets
- . DUMP/RESTORE can now restore a 2311 dump to either a 2311 or 2314 volume
- . DASDI now allows the user to select either VAM I or VAM II format and to identify each volume as public or private
- . DASDI now can optionally clear the Page Assignment Table and thus logically erase the contents of the disk pack without performing a time-consuming surface analysis.

The command system has been modified to support VAM II by including three new commands:

- . CONVERT changes existing VAM data sets to the new VAM II format
- . EVV catalogs private VAM volumes by volume
- . RET changes the attributes of a cataloged VAM data set.

Another new command, UPDTUSER, makes it possible to update the user table with current data about the use of public storage. Available only to a privileged system programmer, UPDTUSER is employed

after an error condition that has obsoleted the data in the user table.

The Integrity of data has been further protected:

- . VAM II prevents the user from accidentally or intentionally circumventing the data set protection afforded by the data set access privileged fields
- . The owner of a data set cannot simultaneously access it from two separate tasks unless he first shares it with himself via the PERMIT command.
- . USERLIBs are automatically shared in this fashion when they are created by the system.

Improvements have also been made in the handling of magnetic tape:

- . Unlabeled tapes, included TSSS dump tapes, can be printed via the PRINT command
- . The system will now prevent the creation or use of multidensity volumes.

## Human Factors

A new resource control function has been included that gathers usage data individually for each user. Among its other features are that it permits the rationing and allocation of system resources to specific users.

An additional operand for the Present POD (POD?) command permits more data to be obtained for a particular module or for all modules in the POD. The new data that can be displayed includes:

- . The module version identification
- . The name, version identification, and external references to each control section in the module.

Modifications to the Language Processor Control program now allows the user to:

- . Perform multiple compilations or assemblies without returning to the command system between each one
- . Proceed with subsequent compilations or assemblies after the current compilation or assembly has been terminated by pressing the attention key
- . Review a source line which has resulted in a diagnostic message
- . Inhibit the system's issuing of diagnostic messages.

STARTUP has been modified to increase the speed of the procedure:

- . Responses to STARTUP-initiated questions will now be accepted from the card reader as well as from the operator's console
- . A printout of the version identification for each module it links into IVM, the resident supervisor, and RSS will be produced by STARTUP

The TSSS dump routine has been improved by the inclusion of the following features:

- . EBCDIC characters will now be represented
- . Page headings will be produced to identify dumps
- . Headings will be produced for dumps of machine registers.

**Performance**

Allocation of supervisor main-storage pages has been modified to provide fewer pages.

- . Allocation of pages will be handled in three circular chains rather than in one
- . A more compact arrangement is achieved for semi-permanent type storage.

Repetitious public volume information is eliminated by a Public Volume Table that is dynamically built during STARTUP.

Modifications have been made to control the growth of the Partitioned Organization Directories (PODs) of VPAM data sets.

- . Updates are now made by reusing space formerly occupied by deleted members and alias descriptors before new space is obtained to extend the POD.
- . Space is saved for both user-created data sets and system program libraries.

The Data Set Status (DSS?) command has been improved:

- . Two fields of data rather than one are now printed on a physical line
- . The time required to print the data is significantly reduced.

The 2540 card reader has been added to the minimum system configuration.

- . The device can be used for entering input into the system including SYSGEN source statements
- . The time required for the SYSGEN procedure if the 2540 is employed is significantly reduced.

The improvements to the FORTRAN compiler include:

- . Reducing the number of times registers are saved and then restored in the FORTRAN library
- . Reducing the number of GETMAIN and FREEMAIN operations utilized by FORTRAN compiler for its five basic work areas.

An improvement to the resident supervisor scheduling algorithm adjusts the dispatching sequence for tasks holding VAM locks.

GATE has been modified to use the system's asynchro-

nous interrupt control facilities.

- . Three buffers have been established for terminal WRITES
- . Result is a significant decrease in system overhead when processing multiple-line terminal displays.

Unnecessary activation of the Dynamic Loader has been eliminated for command system routines and VAM modules making explicit calls to modules in IVM.

**Maintenance**

This version contains solutions to 310 APARs.

**Minimum System Configuration**

The minimum system configuration is: One 2067 mdl 1; two 2365 mdl 2s; one 2860 mdl 2 or two 2860 mdl 1s; one 2870 mdl 1; one 2821 mdl 1 or 5; one 1403 mdl 2 or mdl 3 or N1 with one 1416 mdl 1; one 2540 mdl 1; one 2820 mdl 1; one 2301 mdl 1; one 2314 mdl 1 or one 2841 mdl 1 and five 2311s; one 2803 mdl 1 and two 2401 mdl 1, 2, or 3s or one 2402 mdl 1, 2, or 3 or one 2403 mdl 1, 2, or 3 and one 2401 mdl 1, 2, or 3; one 2702 mdl 1; one 1052 mdl 7; one 2741 mdl 1 or one 1051 mdl 1 or 2 and one 1052 mdl 7; one 2741 mdl 1 or one 1052 mdl 1 or 2; five 1316 or 2316s.

See "P 360/67 Programming Pages" in the sales manual for additional hardware features and RPQs required.

**Minimum Supported Engineering Change Levels**

The following engineering change levels are a requisite for correct operation of the Time Sharing System.

<u>UNIT</u>	<u>ECA LEVEL</u>
2067-1,2*	52 (except 50)
2365A-12	14
2365-12	74 (except 73)
2365A-2	19
2365-2	62
2846	5
2860	60
2870	32
2870A	27 (except 26)
2167	N/A

\* In addition - retain 2067-19 and 2067-20 and service aid 55 apply for the 2067-1,2. If the 32 bit feature is used, retain 2067-16 must also be employed. For full duplex operation ECA69, EC705397 and EC705344 are necessary prerequisites.

**Reference Material**

Assembler Language, C28-2000-2 with TNLs N28-3000, N28-3015, N28-3034, N28-3047 ... Command System User's Guide, C28-2001-4\* ... Concepts and Facilities, C28-2003-3 with TNLs N28-3048, N28-3052\*\* ... Assembler User Macro Instructions, C28-2004-3\* ... Linkage Editor, C28-2005-2 with TNLs N28-3040, N28-3055\*\*

... Time Sharing Support System, C28-2006-0 with TNL N28-3043\*\* ... FORTRAN IV, C28-2007-2\* with TNL N28-3060\*\* ... System Programmer's Guide, C28-2008-1\* with TNL N28-3057\*\* ... Terminal User's Guide, C28-2017-3\* ... FORTRAN Programmer's Guide, C28-2025-2 with TNL N28-3039, N28-3053\*\* ... FORTRAN IV Supplied Subprograms, C28-2026-1 with TNL N28-3054\*\* ... Assembler Programmer's Guide, C28-2032-2 with TNLs N28-3037, N28-3041\*\* ... Master Index, C28-2023-1 ... Introducing TSS/360, C28-2048-1\* ... TSS/QUICK Guide, X28-6400-0\*\*.

**Program Package Information:** Available from PID.

**Basic Program Package**

Documentation -- Program material list ... Methods of printing the TSS System Prose. The following SRLs will be shipped: System Generation and Maintenance, C28-2010-4 ... Managers and Administrator's Guide, C28-2024-2 ... Operator's Guide, C28-2033-5 ... System Messages, C28-2037-4 ... Independent Utilities, C28-2038-1 ... Addendum, C28-2043-6.

If only the form numbered publications are required, order from Mechanicsburg - not from PID.

Machine Readable -- TSS Utilities - Restorable IPL Control VOL Data - TSS Dump Restore Trailer Label.

**Optional Program Package**

Documentation -- Program material list ... Source Volume Utilization.

Machine Readable -- Source Code delivered in the following volumes: Volume 1 - contains Supervisor, Auxiliary programs, Service Routines, Systems Tables and Time Sharing Support System and is specified by using Program Number Extension VOL 1.

Volume 2 - contains Access Methods, Linkage Editor, and Command System and is specified by using Program Number Extension VOL 2.

Volume 3 - contains Independent Utilities, FORTRAN Compiler, Assembler, FORTRAN Library Subroutines and Diagnostics and is specified by using program number extension VOL 3.

**Ordering Information:** Program Number 360GCL627

	Prg. Nbr. Ext.	Distribution Type	Medium Code	User Volume Requirement
Basic	none	MT 9/800	2B	02
Optional	VOL 1	MT 9/800	28	01
	VOL 2	MT 9/800	28	01
	VOL 3	MT 9/800	28	01

**Program Listings**

Time Sharing System/360 program listings are available on microfiche from IBM Corporation, Department 906,

Highway 52 and Northwest 37th Street, Rochester, Minnesota, 55901.

Group Code 9030 is used to order all Time Sharing listings. These are not separately orderable groups.

Microfiche update service will be provided. This service will be discontinued by submitting an order to do so. The listings are the equivalent of output listings produced by assembling the symbolic modules.

**Program Logic Manuals**

Available from IBM Distribution Center, Mechanicsburg.

System Logic Summary, Y28-2009-1 with TNLs Y28-3094, Y28-3102\*\* ... System Control Blocks, Y28-2011-4\* ... Resident Supervisor, Y28-2012-3\* ... Command System, Y28-2013-3\* ... Program Control System (PCS), Y28-2014-1 with TNL Y28-3099\*\* ... System Generation and Maintenance (SYSGEN), Y28-2015-4\* ... Access Methods, Y28-2016-2\* ... System Service Routines, Y28-2018-1\* ... FORTRAN IV, Y28-3097\*\* TNL to Y20-2019-0 ... FORTRAN Library Y28-2020-0\*\* ... Assembler, Y28-3098\*\* TNL to Y20-2030 ... Dynamic Loader, Y28-2031-1 with TNL Y28-3104\*\* ... Independent Utilities, Y28-2039-2\* ... Task Monitor, Y28-2041-2\* ... On Line Test System (OLTS), Y28-2042-1 with TNL Y28-3069 ... Time Sharing Support System, Y28-2022-0 with TNLs Y28-3090, Y28-3105\*\* ... Operator Task and Bulk I/O Y28-2047-0\*\*. Y28-2021-1 S/360 TSS Assembler,

**Dependency Programs**

There are no Dependency Programs for the operation of the Time Sharing System/360.

A tape to card utility, (ex. - BOS, OS, independent) is necessary for the retrieval of the TSS independent utilities. These utilities are packaged as the first file of the System Volume Restore tapes. All of the utilities can be loaded and executed directly from the tapes with exception of the Core Dump Programs. To use the Core Dump it must be punched from the tape. IBM BPS Utility Program - tape to card (program number 360P-UT-053) may be used for this purpose.

A tape to printer utility (ex. - BOS, OS, TSS, independent) is necessary for new users to retrieve the TSS System Prose. The Prose resides on the 4th file of the system restore tapes. IBM BPS Utility Program, tape to printer (program number 360P-UT-052) may be used for this purpose.

\*Denotes change with this version \*\*New Item



**OS/360 LOADER AVAILABLE EARLY**

The OS/360 LOADER 360S-LD-547 (scheduled originally for October 31) is now available as a component of OS/360. It provides improved performance in a COMPILE-LOAD-GO environment. Preliminary timings indicate an average 47% improvement in link edit time and an average 35% reduction in scheduling time. The LOADER combines the basic editing, loading and fetch operations into one job step.

Additional details on the LOADER function and performance can be found in P69-13 and the SRL, "Planning Guide for the LOADER" C28-6702.

**Usage**

The LOADER is supported under all options of OS/360 and can be used with OS/360 Releases 15/16 and 17.

**Action Required**

Current users will receive a preprinted Program Order Form and a letter announcing the availability of the LOADER Component -- instructing them to order the new Component through the branch office using this preprinted Program Order Form. Complete ordering instructions are provided in the letter to users.

OS/360 users ordering for the first time, who desire the new LOADER Component, should add it to their current list of orderable OS/360 Components when ordering on form 120-1957.

**Microfiche**

The LOADER program listing is available on microfiche. It may be ordered as S/360-OS LOADER Group Code 1072. Ordering instructions and a complete list of OS/360 group codes may be found in the Release 17 programming announcement P69-43.

**APAR**

APARs on this component should be mailed to APAR Processing, IBM Programming Systems, 1271 Avenue of the Americas, New York, N. Y. 10020.

**Additional Information**

This is a Type I program (component of OS/360).

**Basic Program Package**

Documentation -- Program Material List ... Operating Instructions ... SRL - IBM System/360 Operating System LOADER, C28-6713-0.

Machine Readable - Option 1 - Object code OS/360 LOADER for 2311 users, and is specified by using Program Number Extension "2311LD". Option 2 - Object code OS/360 LOADER for 2314 users, and is specified by using Program Number Extension "2314LD". Component is 360S-LD-547.

**Optional Program Package**

Documentation -- Optional Program Material List

Machine Readable -- Symbolic library.

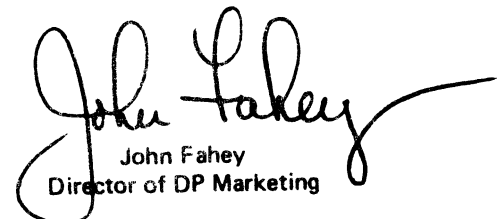
Ordering Information: System Number 360S.

**Note:** Both basic and optional machine readable material for this system is ordered by specifying a "System Line" (columns 1-7, 15-24) and "Component Lines" (columns 8-12) of the Program Order Form. If ordering both 2311 and 2314 systems on one order form, specify the System Line and the Component Line for each different Program Number Extension.

	Prog. Nbr. Ext.	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	2311LD	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
	2314LD	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none
Optional	none	DTR 7DC/800	26	none
		DTR 9/800	28	none
		DTR 9/1600	29	none

If only the form numbered items are required order from Mechanicsburg - not from PID.

For additional ordering information see branch office manual, DP Sales Activity section.

  
John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Notes to World Wide 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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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

**PROBLEM LANGUAGE ANALYZER (PLAN) MAY BE ORDERED (TYPE II)****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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.**

The Problem Language Analyzer (PLAN) for DOS (360A-CX-26X) and OS (360A-CX-27X) may be ordered through the regular procedures outlined in the Branch Office Manual DP Sales Activity section.

The Problem Language Analyzer (PLAN) had been announced in P69-24 as available under Controlled Release.

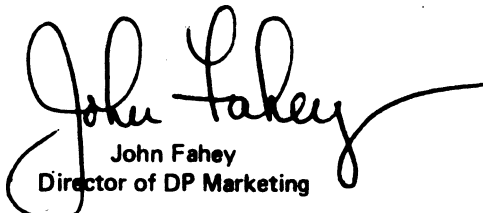
PLAN is a submonitor and application development system that is especially valuable for use with applications that are highly variable in nature and for problem solving and design. PLAN is a prerequisite for a number of Type II programs.

PLAN for OS/360 is restricted to release 15/16 when operating in the MVT environment.

The System Manuals - Narratives (Y20-0345), Flowcharts (Y20-0346), Listings for PLAN under DOS (Y20-0350), and Listings for PLAN under OS (Y20-0351) as well as the Users' Introduction (H20-0626) are available from Mechanicsburg.

**Action Required ...Notify all customers affected by these changes immediately.**

Details are on the reverse side.

  
John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

**Problem Language Analyzer (PLAN):** This program (DOS/360, 360A-CX-26X or OS/360, 360A-CX-27X). It is a sub-monitor and application development support system, implemented in an externally uniform way under the S/360 Disk Operating and Operating Systems. It is especially designed to support problem solving and other highly variable applications.

**Description:** PLAN furnishes five closely related program sets that are mutually dependent. These provide the basic PLAN functions: the submonitor ... the PLAN input language interpreter ... the PLAN input language definer ... the PLAN subroutine package for FORTRAN application programmers ... the Diagnostic Supervisor.

The PLAN programs for each operating system are written to support a single application development interface. (Each set also allows some desirable, but non-standard operations.) As a result, applications may be moved from one environment to another without change, provided the common interface is adhered to. High level languages offer this kind of support for many purposes. PLAN adds uniform methods of user interaction, data definition, and program structure, in the FORTRAN environment.

Because PLAN was designed to support highly variable applications, it offers a new type of modularity. Program linkage definition and intermediate DASD specifications are deferred until execution time, when they can be varied by input data. As a result, much program recoding and re-organization can be avoided.

In further support of this idea, input languages used for application control under PLAN are also defined at the statement level. Both new statement definitions and new program modules can be added to a PLAN application without forcing changes in existing programs and statement definitions.

**Features:** Free form input ... four levels of input statement hierarchy ... user controlled error recovery and diagnostic features ... powerful input data options, such as default value, override, algebraic and logical expressions for data values, automatic mode conversion and scaling ... dynamic program loading ... extensive subroutine support for FORTRAN application programmers.

**Use:** The problem solver (application user) communicates with PLAN through PLAN statements designed by the user to suit his needs. Each PLAN statement contains a maximum of 450 characters; terminated by a semicolon. A new statement may immediately follow the semicolon. Each statement usually contains both a command and data. Processing a PLAN statement causes execution of one or more program modules, using accumulated data and the partial results available at that time.

Programmers communicate with the PLAN system to obtain program linkage, error handling, data management and utility functions by entering PLAN subroutines through CALL linkages (normally from FORTRAN).

**Customer Responsibilities:**

**Program Requirements** -- Functional program modules must be written for new applications, following FORTRAN conventions. These modules are named and stored in the system library.

Certain FORTRAN operations may terminate the execution of PLAN. In general these are the functions that return control to the operating system. Substitute functions are provided for these under PLAN and should be used.

For each PLAN application, the customer must also design and define the input language that he wants to use.

**Staffing** -- Capable user personnel are necessary for good results. Creating a PLAN application involves three groups of people. They are (a) users who are to be served by the application (b) programmers who implement functional logic modules, and (c) system designers who actually design the application input language in detail and specify the data and program modules to be used for each kind of input statement.

**Education** -- Initial education for system designers and key programmers can be accomplished in a four-day workshop school. No more than a few hours of PLAN training will be needed for those who are simply using a PLAN based application. Customers should expect to prepare simplified user's manuals for application users. Their direct use of PLAN program documents is not intended.

**Evaluation** -- PLAN is designed to support change. An important factor in the long-term success of PLAN applications is user feedback to and continued attention from the application designer.

**Special Sales Information:** Because PLAN is designed to have new functions added as independent modules and because many application programs (both IBM and customer) will be operating under PLAN, the PLAN program must not be altered in any way. This will not limit the customer's ability to provide special capability and functions as he needs them because such capability can be modularly added. If a customer proposes changing the PLAN code, the SE must contact Manufacturing Industry Development, DPD HQ, White Plains.

**Programming Systems:**

**DOS/360 PLAN** -- PLAN runs under S/360 Disk Operating System (DOS/360). It is programmed in the S/360 Assembly language and Basic FORTRAN IV. EXCP is used by PLAN for processing of files.

**OS/360 PLAN** -- PLAN runs under OS/360 PCP, MFT, or MVT. OS/360 PLAN is restricted to Release 15/16 in the MVT environment. It is programmed in the S/360 Assembly language and Basic FORTRAN IV. BDAM, BPAM and BSAM are used by PLAN for processing of logical files.

**Minimum Systems Configuration:** The minimum core requirement for PLAN is 24K for DOS, 32K for OS/360 PCP or MFT, and 44K for MVT. Only part of this space is permanently used by PLAN. About 17K is transient, and this part can also be used by PLAN applications. Under OS/360, an additional 6K is re-entertainable, and may be assigned to the RAM or Link Pack areas. The remainder contains buffers, pointers, and control blocks that are permanently resident.

**DOS/360 PLAN** -- Model 25, 30, 40, 50, 65, or 75 (background partition of 24K bytes or larger) ... all features required for DOS/360 FORTRAN ... Floating-point Arithmetic (#4427) ... one 2311 Disk Storage Drive with 2841 Storage Control in addition to DOS/360 requirements (total of two disk storage drives).

**OS/360 PLAN** -- Model 30, 40, 50, 65, 75, 85, or 67 in 65 mode. In addition to OS/360 main and auxiliary storage requirements, PLAN requires 32K or larger partition size for PCP-MFT and 44K or larger for MVT ... Floating-point Arithmetic (#4427) ... direct access storage space equivalent to the capacity of one 2311 Disk Storage Drive (any DASD supported for system residence may be used) in addition to OS/360 requirements.

**Basic Program Package:**

Documentation\* -- (OS/360 PLAN) Application Directory ... Program Description Manual (H20-0594) ... Operations Manual (H20-0596).

(DOS/360 PLAN) Application Directory ... Program Description Manual (H20-0594) ... Operations Manual (H20-0597).

Machine Readable -- (OS/360 PLAN) Object code, PLAN commands, sample problem.

(DOS/360 PLAN) Object code, PLAN commands, sample problem.

**Optional Program Package (no documentation):**

Machine Readable -- (OS/360 PLAN) Source code. Code is contained as an unloaded PDS created by the OS Utility IEHMOVE

(DOS/360 PLAN) Source code. Code & Listing are generated by executing the self-loading program contained on the: Tape on a System/360 Model 30D or larger

**Ordering Information: Program Number 360ACX27X OS/360 PLAN**

Program Extension	Number	Distribution Medium		User Volume Requirement
		Type	Track/Density Code	
Basic	none	Tape	7/800 DC cpi 26	none
		Tape	9/800 bpi 28	none
		Tape	9/1600 bpi 29	none
Optional	none	Tape	7/800 DC cpi 26	01
		Tape	9/800 bpi 28	01
		Tape	9/1600 bpi 29	01

**Ordering Information: Program Number 360ACX26X DOS/360 PLAN**

Program Extension	Number	Distribution Medium		User Volume Requirement
		Type	Track/Density Code	
Basic	none	Tape	7/800 DC cpi 26	01
		Tape	9/800 bpi 28	01
		Tape	9/1600 bpi 29	01
			1316	52
Optional	none	Tape	7/800 DC cpi 26	01
		Tape	9/800 bpi 28	01
		Tape	9/1600 bpi 29	01

Additional Ordering Information is in the DP Sales Activity section of the Branch Office Manual.

**Additional Program Support Material\*\*:**

OS/360 -- Application Description Manual (H20-0490) ... System Manual -- Volume 1, Narratives (Y20-0345), Volume 2, Flowcharts (Y20-0346), and Volume 3, Assembly Listings (Y20-0351) ... User's Introduction Manual (H20-0626).

DOS/360 -- Application Description Manual (H20-0490) ... System Manual -- Volume 1, Narratives (Y20-0345), Volume 2, Flowcharts (Y20-0346), and Volume 4, Assembly Listings (Y20-0350) ... User's Introduction Manual (H20-0626).

For further information contact your Regional Manufacturing Industry Marketing Representative.

\*If only the form numbered manuals are required, order from Mechanicsburg -- not from PID.

\*\*Available from Mechanicsburg.



**CORE REQUIREMENTS FOR OS/360  
MULTIPLE CONSOLE SUPPORT (MCS)  
INCREASED**

The resident main storage required by MCS has been increased over that stated in P69-30. The MCS announcement is not changed otherwise.

The increase in core is for systems without BTAM resident and for the first 2740 Console to be added. The basic multiple console support modules for MVT were increased while the modules for MFT were decreased. The other estimates remain the same. The maximum increase would be 4.2K bytes for an MVT user who does not have BTAM resident.

**Basic Resident Main Storage Requirements**

1.8K for MFT, 2.6K for MVT, plus 0.3K for each console that is specified at system generation.

**Hard Copy Log**

If the Hard Copy Log is on the System Log, the System Log must be included in the system. For MFT the System Log requires 3.0K and BSAM must be resident. The MVT requirement remains the same because the System Log (SYSLOG) and resident BSAM are required elements of MVT.

If the Hard Copy Log is on a console, the resident storage required by that console must be provided.

**User Exit Routine**

If a user-written exit routine is included, the resident storage required by that routine must be provided.

**Resident Storage Required by Device Support Routines**

For each console in the system, the resident storage required by its device support routine must be provided.

- a. The resident storage required by the currently supported console devices remain the same.
- b. The Model 85 Operator's Console Feature (5450) requires 4.0K.
- c. The first 2740 Console required 2.6K plus 6.2K of reentrant BTAM support. If the required BTAM support is present in the system, the above 6.2K is not needed.
- d. Each console requires 0.3K for tables.

**Sample Storage Estimate**

For MFT with Hard Copy Log to be on the 1052 Console including two 2740 additional consoles:

Basic Multiple Console Support	1.8K
2740 Console Support without BTAM present in the system	6.2K
First 2740 Console	2.6K
Two 2740 Consoles at 0.3K each	0.6K
One 1052 Console at 0.3K	0.3K

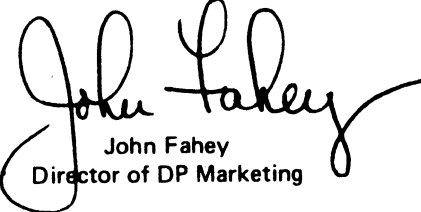
MCS Storage Estimate 11.5K

**Core Storage Planning Information**

Feature or Option	Bytes Required	
	New	Old
Basic Multiple Console Support resident module for MFT	1.8K	2.0K
resident module for MVT	2.6K	2.0K
Hardcopy Log on System Log for MFT (No change for MVT)	3.0K	3.0K
BSAM must be resident		
User exit routines will take additional core as needed		
M85 Operator Console Feature 5450	4.0K	4.0K
2740 Console without BTAM present in the system plus 2.6 bytes for the first 2740	6.2K	5.2K
	2.6K	0.3K
2740 Console with BTAM present in the system plus 2.6K bytes for the first 2740	none	none
	2.6K	1.8K
Each console SYSGENed	0.3K	0.3K

**Action Required**

Affected customers must be notified.

  
John Fahey  
Director of DP Marketing

FOR IBM INTERNAL USE ONLY

**TYPE II PROGRAM FOR OPTICAL SYSTEM  
DESIGN (POSD/II) NOW AVAILABLE FOR  
1130, DOS AND OS/360**

**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] Programming distribution media may be different in this area based on local conditions although DTR, disk packs, etc., may be indicated.
- [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.