

**DOS/360 RELEASE 22/23 OFFERS IMPROVED PERFORMANCE, INCREASED FLEXIBILITY, GREATER USABILITY****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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Release 22/23, now available, provides your DOS/360 customers with significant improvements directed toward simpler, more flexible multiprogramming ... plus improvements to device support and language facilities.

Encourage your DOS/360 customers to upgrade to this release.

Improvements and extensions are in the areas of:

Multiprogramming

Foreground CS 25/30/40, including
concurrent CS/40
System Control and IOCS

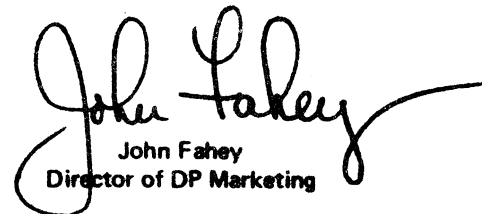
*ANS COBOL**BTAM**QTAM**Magnetic Tape Support**Disk Support**Extensive APAR maintenance of system components*

Recompilation ... Because of changes and improvements to ANS COBOL and QTAM, users may have to recompile and/or link edit programs written in either language. Full details are in the Memo to Users sent to registered DOS users.

Distribution on 2316 Disk Packs ... Release 22/23 will be available to users via 1316 disk packs or magnetic tape. As an alternative, initialized 2316 disk packs may be submitted to PID for distribution.

Classification ... Type I with programming service classification A, except Autotest which is C. All APARs on Autotest submitted prior to January 1, 1970 have been incorporated into this release.

More information and instructions for ordering Release 22/23 are in the following pages.



John Fahey
Director of DP Marketing

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: May 15, 1970
Distribution: All Areas

System Control and Basic IOCS, 360N-CL-453

Standard Foreground Assignments

The ASSGN supervisor generation macro now permits standard device assignments in all partitions, by means of a new parameter. This extends to the foreground partitions a facility formerly restricted to the background.

Device Release Capability

The new RELEASE macro allows the user to release devices at execution time. By Job Control another partition can utilize the device.

CATALR Statement to SYSPCH

Job Control has been modified to accept a CATALR statement, thus providing Assembler, COBOL, and FORTRAN users with the ability to compile and catalog to the Relocatable Library within the same job. If SYSPCH is assigned to tape or 2311, another job step may be used to catalog the output to the Relocatable Library.

Reallocation for the 2314

The Librarian phase MAINTA has been modified to allow reallocation on a 2314 device by the same program which currently performs reallocation on a 2311. Single drive users can reallocate libraries.

Dual Density Support

When a standard label tape output file is opened, at load point, using a dual density tape drive, the density of the existing VOL1 label is checked. If it is not the same as that specified by the user, the labels will be re-written in the user-specified density, rather than that indicated in the label.

Forced End of Volume for Disk

Enables the user to force end of volume in sequential disk processing. This new support is comparable to the existing forced end of volume capability for tape. The following components support FEOVD: 360N-CL-453, SM-483, CB-482, UT-461, UT-462 and UT-463.

ESTV (Error Statistics by Tape Volume) and EVA (Error Volume Analysis)

Two features for recording information about read and write errors for tape volumes are added. These features assist in monitoring the number of read and write errors on a tape volume. Remedial steps can be taken when tape volumes with excessive errors are encountered.

The ESTV feature collects error statistics in a table in the supervisor. The error records may be placed on a

direct access device or printed on the console. A utility program is provided to dump the direct-access records either to tape or a printer.

The EVA feature notifies the system operator if a user-defined threshold of temporary read-write errors is exceeded.

DOS American National Standard COBOL, 360N-CB-482

Spanned Record Facility

COBOL has implemented the BLOCK CONTAINS clause for the specific case where logical record size is greater than physical record size for direct access data sets (both random and sequential), and sequential data sets for magnetic tape.

Relative Track Addressing Facility

Allows the accessing of records according to the track they reside on relative to the first track allocated to the file.

The DOS ANS COBOL restriction placed on the use of the REPLACING option of the COPY verb is removed.

The DOS restriction limiting to one the number of extents per volume for a file closed with the UNIT option is removed.

COBOL programs compiled using DOS Release 21 ANS COBOL cannot be Re-link Edited on Release 22/23 if they contain CLOSE UNIT statements for Sequential Disk files. Recompilation is necessary for the above case. File conversion is not required.

Some ANS COBOL programs using SORT resulted in a partial overlay in core during execution. This has been corrected in Release 22/23. To take advantage of this correction, ANS COBOL programs using SORT must be recompiled. Programs not requiring the correction may be cataloged to a Release 22/23 system without recompilation.

BTAM, 360N-CQ-469

BTAM support for binary synchronous ID Verification has been expanded to include a multiple ID facility such that unique ID sequences can be received from remote binary synchronous stations. This expanded BTAM ID facility allows the central computer to communicate over the same switched line terminations, with BSC stations that do not allow ID Verification as well as those that do. The facility will also permit use of ID sequences of variable lengths.

BTAM now has the capability of specifying general binary synchronous device classifications for the type of line connection (nonswitched point-to-point,

switched point-to-point, or nonswitched multipoint) for use in communicating with any supported type of remote binary synchronous device including the 2715 Transmission Control Unit, 2770 Data Communications Terminal and the 1800 Computing System. The support for the 2715 allows BTAM to intercept specially formatted messages and write the information in the message on the System/360 console or on the OBR/SDR recorder file. The support for the 2715 includes new macros that generate tables to define the 2715 operation.

BTAM now provides the following added capabilities under binary synchronous on-line terminal test:

The capability of handling WACK responses from a terminal.

The capability of inserting component selection characters, received in the Request for Test message, into certain on-line test support for the 2770 Data Communications System.

Three additional stored transparent test messages have been added to provide the required transparent message formats for the 2780 output devices.

QTAM, 360N-CQ-470

The timer interrupt support has been changed to eliminate the requirement to have at least one line group with a zero polling interval specified. This change requires reassembly of the Supervisor and re-link editing of the QTAM message control program before attempting to execute any QTAM application.

Direct Access Method, 360N-IO-454

Variable Record and Spanned Record Format for Direct Access

The capability to process variable length (FORMAT V) records and spanned format records have been added to the DOS Direct Access Method. All records are considered to be unblocked.

Consecutive Tape IOCS, 360N-IO-456

Spanned Record Processing for Magnetic Tape

Spanned Record Processing gives the capability and allows record processing without being concerned with the restrictions imposed by hardware on the length of a record. The sequential access method for Magnetic Tape allows a logical record, blocked or unblocked, to span multiple physical records.

Model 30 Emulator, 360N-EU-484

The CS/30 emulator program can be executed on both the S/360 Models 25 and 30 in any partition of DOS/360 that provides a batched job environment; however, CS/30 emulator programs cannot be

executed concurrently with each other.

Certain generated optional emulator routines and functions are now transient. This change results in a significant reduction in the amount of main storage required by the CS/30 emulator program. The main storage savings realized depends upon the options selected by the user at emulator generation time.

Model 40 Emulator, 360N-EU-485

When the 1400 Storage Relocation Feature (4462) is installed on the Model 40, the CS/40 emulator program can be executed in any partition of DOS/360 that provides a batched job environment. CS/40 emulator programs can also be executed concurrently up to and including three partitions of DOS/360. The 1400 Storage Relocation Feature allows simulated 1400 storage to begin with, and in multiples of 16,384 (16K) thru 114,688 (112K) bytes. The DOS Supervisor increases approximately 1,600 bytes in size when the relocation of simulated 1400 storage is specified at DOS/360 system generation time.

Groups 1, 2, and 3 Utilities, 360N-UT-461, 462, 463

The Disk-to-Printer, Disk-to-Tape, Disk-to-Disk, Disk-to-Data Cell, Data Cell-to-Data Cell, Data Cell-to-Disk, Data Cell-to-Printer, Data Cell-to-Tape and Disk-to-Card utility programs now recognize a forced end of volume (FEOV) on a disk input file and open the first extent on the next volume.

The S-parameter improvement to the Initialize Disk Programs may be used to bypass surface analysis, HA and R0 generation. However, it permits volume labels to be written and IPL and VTOC formats to be created.

Program Temporary Restrictions

The implementation of FEOVD in the Control Program, 360N-CL-453, has removed the COBOL restriction listed in the Release 21 of DOS, but is such that a data set created with this same facility under OS cannot be correctly processed by DOS.

The SAME RECORD AREA clause is not supported with spanned records in ANS COBOL for Release 22/23 of DOS.

These restrictions will be resolved in a subsequent DOS Release.

Programming Service

DOS/360 Release 21 will remain "current" until August 15, 1970 (three months).

BASIC PROGRAM MATERIAL (Available from PID)

Documentation -- Program material list and Attachment I to the basic program material list. The following SRL publications appropriate to the components ordered are shipped with each initial DOS/360 order:

System/360 Disk Operating System --	
Operating Guide <u>TNL GN24-5404</u>	GC24-5022-8
Concepts and Facilities	<u>GC24-5030-7</u>
Operator Communications and Messages	<u>GC24-5074-1</u>
Timing Estimates TNLs GN24-5383, 5393, <u>5403</u>	GC24-5032-8
Systems Generation and Maintenance	<u>GC24-5033-9</u>
Data Management Concepts	<u>GC24-3427-5</u>
System Control and System Service Programs TNLs GN24-5385, 5387, <u>5396</u>	GC24-5036-4
Supervisor and Input/Output Macros	<u>GC24-5037-8</u>
Basic Telecommunications Access Method	<u>GC30-5001-7</u>
Utility Macros Specifications <u>TNL GN33-8613</u>	GC24-5042-4
Vocabulary File Utility Program for the 7772 Audio Response Unit	GC27-6924-2
Utility Programs Specifications <u>TNL GN33-8610</u>	GC24-3465-5
Tape Sort/Merge Program	GC24-3438-4
Disk Sort/Merge Program	GC24-3444-4
COBOL DASD Macros (Note - GC24-5039 and TNLs GN24-5142, 5181 may be used in lieu of GC24-5039-1)	GC24-5039-1
Assembler Language	<u>GC24-3414-7</u>
COBOL Programmer's Guide TNLs GN28-0253, <u>0259</u>	GC24-5025-5
COBOL Language Specifications TNLs GN28-0245, <u>0256</u>	GC24-3433-5
USA Standard COBOL	<u>GC28-6394-2</u>
USA Standard COBOL Programmer's Guide	<u>GC28-6398-1</u>
S/360 Conversion Aids - COBOL to USA Standard COBOL Language, Conversion Program <u>TNLs GN28-0262, 0270</u>	GC28-6400
Basic FORTRAN IV Programmer's Guide	GC24-5038-3
Basic FORTRAN IV Language	GC28-6629-2
Report Program Generator	<u>GC26-3570-6</u>
Autotest Specifications	GC24-5062-1
QTAM Message Control Program TNLs GN30-5522, 5527, <u>5535</u>	GC30-5004-2
QTAM Message Processing Program Services TNLs GN30-5523, 5528, <u>5534</u>	GC30-5003-3
PL/I Subset Reference Manual TNLs GN33-9066, <u>9085</u>	GC28-8202-1
PL/I Programmer's Guide TNLs GN33-9067, <u>9078</u>	GC24-9005-4
PL/I DASD Macros <u>TNL GN24-5301</u>	GC24-5059
On-Line Test Executive Program Specs and Operating Guide	GC24-5066-2
FORTRAN IV Programmer's Guide <u>TNL GN28-0267</u>	GC28-6397-1
S/360 FORTRAN IV Language <u>TNL GN28-0251</u>	GC28-6515-7
S/360 FORTRAN IV Library Sub-programs <u>TNL GN28-0588</u>	GC28-6596-4
Tape and Disk Sort/Merge Program <u>TNL GN28-2388</u>	GC28-6676-1
1401/1440/1460 Emulator Programs for System/360 Models 30 and 40	<u>GC27-6940-3</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 System and the 2314 Resident System by specifying one of the program number extensions described below:

- 2311 users who do not require either the Model 40 Emulator or ANS COBOL should specify Program Number Extension 2311.
- 2311 users who require either the Model 40 Emulator or ANS COBOL should specify Program Number Extension 2311A.
- 2311 users who do not order the Model 40 Emulator or ANS COBOL originally, but require it sometime in the future should specify Program Number Extension 2311B.
- The 2314 user should specify Program Number Extension 2314.

Note: PID will distribute Release 22/23 of DOS on 2316 Disk Packs provided that they have been initialized by the customer prior to being sent to PID. The Disk should be initialized with one of the following programs: 360P-UT-206, 360P-UT-208 or 360N-UT-461.

The following is a list of the available components:

2311 Resident System	3-7	360N-SV-474
2314 Resident System	3-7	360N-SV-486
System Control and Basic IOCS	3-7	360N-CL-453
Direct Access Method	3-6	360N-IO-454
Consecutive Disk IOCS	3-7	360N-IO-455
Consecutive Tape IOCS	3-7	360N-IO-456
ISFMS	3-7	360N-IO-457
Consecutive Paper Tape IOCS	3-4	360N-IO-458
Compiler I/O Modules	3-7	360N-IO-476
Magnetic Character Reader IOCS	3-7	360N-IO-477
Optical Character Reader IOCS	3-7	360N-IO-478
BTAM	3-6	360N-CQ-469
QTAM	3-7	360N-CQ-470
Autotest	3-3	360N-PT-459
PL/I	3-7	360N-PL-464
Assembler D	3-5	360N-AS-465
Assembler F	3-6	360N-AS-466
COBOL D	3-7	360N-CB-452
COBOL DASD Macros	3-1	360N-CB-468
American National Standard COBOL	3-1	360N-CB-482
Language Conversion Program	3-1	360N-CV-489
Basic FORTRAN IV	3-7	360N-FO-451
FORTRAN IV	3-3	360N-FO-479
FORTRAN IV Library Subprograms	3-2	360N-LM-480
Report Program Generator	3-7	360N-RG-460
On-Line Test Executive Program	3-4	360N-DN-481
Group 1 Utilities - Unit Record/Disk	3-7	360N-UT-461
Group 2 Utilities - Tape	3-6	360N-UT-462
Group 3 Utilities - Data Cell	3-5	360N-UT-463
MPS Utility Macros	3-6	360N-UT-471
Vocabulary File Utility Program	3-1	360N-UT-472
Tape Sort/Merge	3-5	360N-SM-400
Disk Sort/Merge	3-6	360N-SM-450
Tape/Disk Sort/Merge	3-3	360N-SM-483
Model 30 Emulator	3-4	360N-EU-484
Model 40 Emulator	3-3	360N-EU-485

Except for CB-468 and DN-481 all components have changed with this release.

The DOS/360 data is preceded by an initialize 2311/2314 Utility Program and a Restore Tape-to-Disk program.

The System Control and Basic IOCS component (360N-CL-453) and one of the two Supervisor components:

- 2311 6K 360N-SV-474
- 2314 6K 360N-SV-486

are required when ordering the S/360 Disk Operation System on the IBM Program Order Form (120-1957).

OPTIONAL PROGRAM MATERIAL

Documentation -- Appropriate material delivered.

Machine Readable -- Source code delivered on thirteen separate volumes and specified by Program Number Extensions as indicated below. Distribution may be requested on 1316 Disk Packs, or on magnetic tapes (2400") 9-track or 7-track (Data Conversion feature required). A separate 1316 Disk Pack or magnetic tape (2400") is required for each Program Number Extension indicated on the IBM Program Order Form (120-1957).

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 Macros	UT-461 UT-462 UT-463 UT-471

(Continued)

VOL4	COBOL USA Standard COBOL Language Conversion Program	CB-452 CB-482 CV-489
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	CL-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 VOL8)	PL-464
VOL13	USA Standard COBOL (continuation of VOL4)	CB-482

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. Enter a separate Component Line for each component desired. Respecify the System Line for each different Program Number Extension.

Users who do not order Release 22/23 will be removed from the user record address file.

ADDITIONAL PROGRAM MATERIAL

Program Logic Manuals

DOS/360

System Control Introduction	GY24-5017-8
Librarian Maintenance and Service	GY24-5079-1, TNLS GY24-5136, GN24-5406
Linkage Editor	GY24-5080-1, TNL GN24-5407
Supervisor and Transients IPL and Job Control	GY24-5084-4 GY24-5086-2
Logical IOCS Introduction	GY24-5020-5
Unit Record, Mag. Tape, and Compiler Files	GY24-5087-3
Sequential and Direct Access Files	GY24-5088-3
ISFMS	GY24-5089-2, TNL GN24-5405
BTAM	GY30-5001-3, TNLS GY30-5531, 5533
QTAM	GY30-5002-3, TNLS GY30-5529, GY30-5537

Utilities

Disk Sort/Merge	GY24-5023-1, TNL GY33-8536
Autotest	GY24-5021, TNL GY28-2291
Tape/Disk Sort/Merge	GY24-5027
FORTRAN IV	GY28-6645-1, TNL GN28-2409 GY28-6394-1,

DOS/360 and TOS/360

OLTEP	GY24-5056-1, TNLS GY24-5090, GY24-5106
MPS Utilities Tape/Disk Sort/Merge Assembler	GY24-5045-2, TNL GY33-8541 GY28-6645-1, TNL GN28-2409 GY26-3642-1, TNLS GY26-8006, GY26-8007, GY26-8015, GY33-8020

Assembler F

RPG	GY26-3701-1, TNLS GY21-0009, 0005
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COBOL

	GY24-5025-2, TNLS GY28-6390, GY28-6389, GY28-6396
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FORTRAN IV

Subroutine Library	GY24-5032 GY33-9013, TNLS GY33-9027, GY33-9018, GY33-9032, GY33-9031, GN33-9081
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PL/I Volume 1

	GY33-9010-2, TNLS GY33-9046, GN33-9086
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PL/I Volume 2

	GY33-9011-1, TNL GN33-9087
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PL/I Volume 3

	GY33-9012-1, TNL GY33-9051
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IBM System/360 DOS 1401/1440/1460

Emulator Program Compatibility Support 30 GY27-7164-1

IBM System/360 DOS 1401/1440/1460

Emulator Program Compatibility Support 40 GY27-7165-1

IBM System/360 DOS: USA Standard

COBOL GY28-6392-1

IBM System/360 Conversion Aids: COBOL-

to-USA GY28-6397-0, TNL GN28-0401

Program Listings: The DOS/360 assembly listings and/or Macro (Source Statement Library) SSERV listings are available on Microfiche from the IBM Corporation, Microfiche Distribution, Mechanicsburg, Pa. Specify Group Code 2030 for the assembly listing 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. The Macro SSERV listings are equivalent to a SSERV display on a printer of the Macros of the Components where applicable.

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.

There is no optional program material for the following 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 (6K) 360N-SV-486, and the Compiler Input/Output Macros 360N-IO-476, are not available. See System/360 Disk Operating System, System Generation and Maintenance, C24-5033-6, for information on these modules.

ORDERING INFORMATION: System Number 360N

Current users will receive a pre-printed Program Order Form and a letter announcing the availability of Release 22/23. The letter instructs them to order the Release 22/23 through the branch office using the pre-printed order form. Complete ordering instructions are provided in the letter to users.

	Program Number Extension	Distribution Medium		User Volume Requirement
		Type	Code	
Basic	2311	MT	7DC/800 26	01
		MT	9/800 28	01
		MT	9/1600 29	01
		Disk	1316 52	02
	2311A	MT	7DC/800 26	02
		MT	9/800 28	01
		MT	9/1600 29	01
		Disk	1316 52	03
	2311B	MT	7DC/800 26	01
		MT	9/800 28	01
		MT	9/1600 29	01
		Disk	1316 52	01
2314	MT	7DC/800 26	02	
	MT	9/800 28	01	
	MT	9/1600 29	01	
	Disk	2316 57	01	
Optional	*VOL1 thru VOL13	MT	7DC/800 26	01
		MT	9/800 28	01
		MT	9/1600 29	01
		Disk	1316 52	01

*For each program number extension (VOL1 - VOL13) that is specified, a separate reel of magnetic tape or 1316 Disk Pack is required.

**NEW OS/360 RELEASE SUPPORT
EXTENDED**

In response to our customer requirements for a more stable OS/360 environment, IBM is extending OS/360 release support. It offers OS users increased flexibility when planning and installing new releases.

This new support plan allows a customer to skip a release and its update, install every other release update while being supported on his current production system for three months after the availability of that release update. He may choose which release he wants to install, when he wants to install it, and within the limits of extended support how long he stays on the release.



The OS/360 support policy is: Release N (initial and update) will be considered current (supported) for three months after the availability of the N+2 update release. The support includes both FE and Central Programming Service for OS components with programming service classification A.

The new OS/360 support policy starts with the OS/360 releases now current.

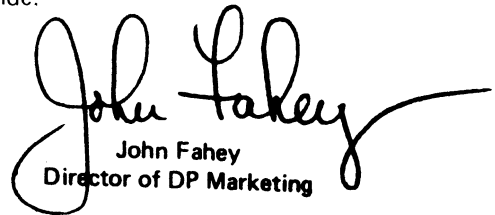
New functional OS/360 releases are still planned at approximately 6-9 month intervals with release updates provided between functional releases. Release updates contain centrally applied PTFs plus component releases, if any, made available since the last functional release.

The support plans of ASP and HASP are extended to match the new OS extended support. A release of ASP (360A-CX-15X) or HASP-II (360D-05.1.014) is current from the date of its initial availability from PID until the OS/360 release with which it operates is no longer current.

Future OS/360 Release P letters will list the releases then current and their support period.

Additional elements of this OS/360 support plan include component releases and the ability to install on the prior release many components from a new release where applicable.

The release procedure is further discussed on the reverse side.


John Fahey
Director of DP Marketing

RELEASE 17 and 17 UPDATE

Release	Support Period
18	↓
18 Update	
19	
19 Update plus	
3 months	

Release 17 will be supported for three months after the availability of the Release 19 update.

RELEASE 18 and 18 UPDATE

Release	Support Period
19	↓
19 Update	
20	
20 Update plus	
3 months	

Release 18 will be supported for three months after the availability of the Release 20 update.

NOTE: Reference to IBM U.S. DP Letter 270-24 contained in Program Announcement P70-30 is equivalent to WT DP Letter 70-288.

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White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: May 25, 1970
Distribution: All Areas

OS/360 RELEASE PROCEDURE

The following information is provided to help you discuss the subject with your OS/360 customers. The material should not be given to a customer directly.

This program announcement states that a release update will be made available between new functional releases of OS/360. This will normally occur some three to five months after the availability of the new functional release. A release is updated with PTFs so that the user can benefit from problems that were found and corrected during the initial field exposure. After a release has been in the field for two to three months, the PTFs that were made available through normal Field Engineering channels are reviewed to determine which should be included in the update. Also included in the update are component releases made available since the last functional release. The update is then created, tested, and shipped to PID to replace the initial level of that release.

The decision to either install the release initially or wait until the update is available should be based upon the individual account requirements; e.g., a user's satisfaction with its current production release, requirements for new function, system workload, account plans and on-order equipment, etc.

There should be no reason for a customer to order and install both the initial release and its update. If he installs the release initially, he can apply PTFs as they become available, thus effectively bringing his release to the same level as the update. The user installing the release update has these PTFs applied for him centrally by IBM rather than individually at his location.

OS releases are not fixed six-month intervals but vary somewhat, usually between six to nine months, depending upon both internal and external schedules. In addition, to meet our external commitments, there are special releases affecting a limited number of users. The basic release plan is designed so that any given user of OS/360 can install one or two releases per year depending upon his requirements.

Release N of OS is now supported for three months after the availability of the N+2 update release. This means, assuming six months between initial releases and updates three months after initial release, each release of OS is supported for approximately 18 months after its initial availability with each release update being supported for approximately 15 months. The support provided for a release includes both FE and Central Programming Service for OS components with programming service classification A. This includes all OS components except Linkage Editor E, FORTRAN E, and Assembler E, which are programming service classification C. These three components will not be distributed with OS Release 19, or subsequent releases.

The OS/360 release plan provides for component releases, release updates, and extended support. It is designed to provide users with early availability, improved reliability, increased stability and maximum flexibility. He may choose which release he wants to install, when he wants to install it, and within the limits of extended support how long he stays on that release. This new extended release support for OS is the culmination of a number of improvements to OS/360 release and support procedures. We believe it to be a very positive step in providing an improved operational environment for users of Operating System.

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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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



CALL/360-OS, THE HIGH PERFORMANCE TIME SHARING SYSTEM FOR OS/360, IS AVAILABLE

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- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

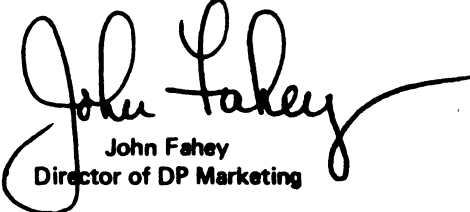
CALL/360-OS ... the personal computing system for remote users ... with all announced features (highlighted below) is ready for shipment.

- Multiprogramming of time sharing concurrent with batch processing under control of OS/360 MFT or MVT.
- Hierarchy support of the IBM 2361 large capacity core storage, giving improved price/performance for a smaller number of terminals.
- A comprehensive terminal command language and library structure for flexibility and ease of use.
- FORTRAN, BASIC and PL/I programming languages to attract a wide audience of problem solvers.
- The ability to load programs stored on paper tape from a TELETYPE* Model 33/35.**

A review of P70-39 and P69-86, along with the sales manual text on the inside pages will give you highlights on configurations, demonstrations, sales aids, education, installation and publications.

CALL/360-OS is a Type I program with programming service classification A.

No programming RPOs will be accepted at this time.


John Fahey
 Director of DP Marketing

*Trademark of TELETYPE Corporation

**Terminals which are equivalent to those explicitly supported may also function satisfactorily. The customer is responsible for establishing equivalency. IBM assumes no responsibility for the impact that any changes to the IBM supplied products or programs may have on such terminals.

Published by DP Publications Services, WTHQ
 1 North Broadway
 White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: May 28, 1970
 Distribution: All Areas

CALL/360-OS: Is a time-sharing system which operates under the System/360 Operating System in either an MFT or MVT environment. Because it requires only one partition or region, background jobs may execute concurrently with the CALL/360-OS task.

The CALL/360-OS system (360A-CX-42X) offers the user a problem solving facility based on individual needs and timely availability. The system is designed to enhance the problem solver's capabilities by reducing the elapsed time between problem definition and problem solution.

The needs of two classes of users, the non-professional as well as the experienced user, were significant considerations in the design of CALL/360-OS. To match a wide spectrum of user problem complexity, the system offers three applications-oriented programming languages: the easy-to-use CALL/360-OS BASIC, the more powerful CALL/360-OS PL/I, and CALL/360-OS FORTRAN.

Description: The CALL/360-OS system provides terminal users with an individualized computing capability which resembles that of a dedicated data processing system. The terminal devices supported by the system are the IBM 2741 Communication Terminal (Correspondence) and the TELETYPE* Model 33/35** or equivalent.

CALL/360-OS is interrupt driven, thus operating overhead due to polling is eliminated, and system response time to terminal originated activity is reduced.

Languages

For the solution of his particular problem, the user 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 designed to operate in a conversational computing environment, implementation differences between the System/360 Operating System languages (PL/I and FORTRAN) and the CALL/360-OS PL/I and FORTRAN languages exist. These differences are identified in the language reference manuals.

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
- Choose a language processor for compilations
- Compile and execute programs
- Obtain information relative to connect time, CPU time, program files and data files
- Use routines residing in CALL/360-OS libraries

Through the Terminal Command Language, the user is able to access those resources within the system which are applicable to his particular computing problem. The language is so structured that the user may concentrate on problem solution and not on the intricacies of the computing machinery.

CALL/360-OS BASIC

The CALL/360-OS BASIC language is based upon the BASIC time-sharing 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 ideally suited for use as a first entry language for new users, and for the occasional user who is not an experienced programmer.

CALL/360-OS PL/I

For more complex programs, the powerful CALL/360-OS PL/I language is provided. This language contains features for handling such diverse computing problems as substring processing and array manipulation. CALL/360-OS PL/I provides the user with many of the features of the full 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:

- Capability 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 processing of program generated interrupts

CALL/360-OS FORTRAN

FORTRAN is the most widely used and known of all higher level, scientific languages and provides language capability in a form convenient and familiar to the scientific/engineering, technical community. Through CALL/360-OS, a FORTRAN language is made available to this community for use in the computing environment.

Performance

CALL/360-OS has been designed to handle the high volume of diverse activity present in a problem solving environment, and to provide the fast response required of an individualized computing system.

As is true in all multiprogramming environments the performance of one task may be impacted by other tasks. CALL/360-OS specifically addresses this situation through internal features such as dynamic relocation of terminal user programs and dynamic reassignment of dispatching priorities. The system provides rapid response for those functions (for example, program statement entry) where fast response is required, while giving lower priority to those functions (for example, extensive calculation) where such response is not required.

*Trademark of TELETYPE Corporation

**Terminals which are equivalent to those explicitly supported may also function satisfactorily. The customer is responsible for establishing equivalency. IBM assumes no responsibility for the impact that any changes to the IBM supplied products or programs may have on such terminals.

Because of the dynamic nature of user problems and the manner in which they are handled, no definitive statement may be made regarding the impact of CALL/360-OS on any other task in the system, or vice versa. For increased performance, however, the CALL/360-OS task must have the highest dispatching priority within OS/360.

Features

- Personal computing system under OS/360 MFT or MVT
- Concurrent batch processing capability under OS/360
- Dynamic assignment of dispatching priorities
- Extensive Terminal Command Language
- Multiple Languages:
 - CALL/360-OS BASIC
 - CALL/360-OS PL/I
 - CALL/360-OS FORTRAN
- Structure designed for problem solving, including:
 - Terminal check-out of CALL/360-OS programs
 - Compiler-generated, dynamically relocatable code
 - Ease of modification of user programs
 - Multiprogramming within a partition
- Paper tape facility to accept source program code as input
- Main Storage Hierarchy support to provide segmented operation in either processor storage and/or IBM 2361 Core Storage.

Use

The CALL/360-OS system is initiated as a job through the use of OS/360 Job Control Language (JCL) statements. Variations in the configuration of terminals and available libraries may be attained by the inclusion or exclusion of specific data definition (DD) statements at system initialization time.

When the system is in operation, a terminal user may become attached to the system by dialing the computer. If a line is available, his call is automatically answered. The Terminal Command Language provides data and program security from other interactive users of CALL/360-OS, and allows the user to initiate his own terminal activity.

Customer Responsibilities

The customer is responsible for performing the following functions:

- The ordering and satisfactory installation of all required communications equipment. An OS/360 Systems Generation to include support for CALL/360-OS devices, the storage protect function, the Interval timer function, and one "user" SVC which is provided with the system.
- Allocating DASD space for the CALL/360-OS Executive and libraries.
- Building a CALL/360-OS Executive and data base.

Programming Systems

CALL/360-OS is written in the OS/360 Assembler Language and employs EXCP for all disk input/output operations, and an appendage restart exit for terminal input/output operations. To install CALL/360-OS, the user must have an MFT or MVT system with at least an OS/360 Assembler, the Linkage Editor F, and the OS/360 utilities IEHPRGM and IEHMOVE. There is no direct communication between the CALL/360-OS language processors and OS/360. CALL/360-OS is non-refreshable and does not benefit from the hardware error recovery facility offered by OS/360 Model 65 Recovery Management Support. CALL/360-OS does not support the Model 65 Multiprocessing System (M65MP).

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.

The minimum peripheral equipment for on-line operations is listed below:

- One Selector Channel
- One IBM 2314 Storage Control Model A1
- One IBM 2312 Disk Storage Module Model A1
- One IBM 2702 or 2703 Transmission Control Unit
- One Command Console (IBM 2741, TTY 33ASR or TTY 35ASR)
- One Communications Console (IBM 2741, TTY 33ASR or TTY 35R0)

In addition, the following peripheral equipment is needed for off-line operations:

- 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)

A magnetic tape unit is needed if the user requires the CONVIN function of the U#INITLD utility. Any peripheral devices, in addition to those given above, will be supported within the limits of OS/360 support. Specifically, CALL/360-OS can use additional selector channels and disk storage modules. The use of the RPQ High Resolution Timer gives the most accurate accounting capability. This RPQ is available on the Models 50 (RPQ-E15092) and 65 (RPQ-E43528) central processing units.

2702 Configuration	Model or Feature	Description
2702	1	Transmission Control Unit
2741 Related Features	4615 9684 8055 3233	IBM Terminal Control Type I Selective Speed 2741 Break Feature 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.

continued

2702 Configuration	Model or Feature	Description
TTY 33/35 Features	7912 E62920 3233	Telegraph Terminal Control - Type II CR cause interrupt on TTY - (RPQ) To go to 15 TTY on 2702, add 1 3233 per TTY line
To go beyond 15 lines	E54838 7955	Immediate End (for paper tape) (RPQ) 31 line expansion - to allow expansion from 15 to 31 lines
Allow mix of 2741 and TTY	3853 7935	Expansion Base Terminal Control Expansion

2703 Configuration	Model or Feature	Description
2703	1	Transmission Control Unit
2741 Related Features up to eight lines	7505 4619 4696 8055 4878 3205	Start Stop Base 1 IBM Terminal Control Base IBM Terminal Control Type I 2741 Break Feature Line speed option (134.5) Data Line Set
TTY	7905 7505	Telegraph Terminal Control Base Start/Stop Base 1
Related Features up to 8 lines	7912 4877 3205 E62376 Z16087	Telegraph Terminal Control Type II Line Speed Option (110) Data Line Set CR Interrupt on TTY - (RPQ) Immediate End (for paper tape) (RPQ)
To expand from 8 to 88 lines	3206 3205	Data Line Set Expander 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 7505	Basic expansion 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

Type	Model or Feature	Description
2741	1	Communications Terminal
	3255	Dial up
	4708	Interrupt
	9104	Character spacing: 10/1inch
	9114	Data set attachment: Western Electric 103A
	9435	Line Feeding: 6/1inch
	RPQ-S30006	Printing element and keyboard arrangement (RPQ)
	98xx	Line Voltage as appropriate

Teletype (Alternate) Command Console

35ASR		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 103A at TCU, equipped with: Initiate Disconnect Respond to Disconnect Selective Automatic Answer
DATA SET		Western Electric Data Set 103A at terminal, equipped to be compatible with 103A above (Automatic Answer)

Teletype (Alternate) Communications Console

35R0 or- 35KSR		Teletype Communications Console
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 or region size required for use of CALL/360-OS is 240K. This allows a configuration of ten lines with BASIC and FORTRAN compilers and an object program size of 70K. A typical BASIC program of 450 statements could be expected to generate 70K of object program. Additional partition or region space is required for increased terminal networks, the PL/I compiler, larger programs and for improved performance in a large network environment.

Basic Program Package:

Documentation: Application Directory - The following SRL Publications are shipped by PID with each initial order: Terminal Operations Manual GH20-0787, Operator's Manual GH20-0788, Executive and Utilities Program Description Manual GH20-0786, CALL/360-OS BASIC Language Reference Manual GH20-0699-1, CALL/360-OS PL/I Language Reference Manual GH20-0700-1, CALL/360-OS FORTRAN Language Reference Manual GH20-0710-1.

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

Machine Readable: The complete CALL/360-OS System is distributed on one 2400 foot reel of magnetic tape, either 9-track (800 or 1600 bpi), or 7-track (800 bpi Data Conversion feature required).

Optional Program Package:

Machine Readable: Consists of the Executive Source, the Utilities Source, the Language Compilers Source and the Language Macros. It is distributed on one 2400 foot reel of magnetic tape, either 9-track (800 or 1600 bpi) or 7-track (800 bpi Data Conversion feature required).

Ordering Information: Program Number 360ACX42X

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

See DP Sales Activity section of Branch Office Manual.

Additional Program Support Material:

Systems Manuals: The availability of the following systems manuals will be announced in a future publications release letter.

- Executive and Utilities
- CALL/360-OS BASIC
- CALL/360-OS PL/I
- CALL/360-OS FORTRAN
- Sales and Systems Guide (IBM Confidential)

Until the above are available from Mechanicsburg, a limited number of preliminary editions of these manuals may be obtained from Manager of Industry Development, CALL/360-OS, 2670 Hanover Street, Palo Alto, California 94304.

Reference Material: The following reference material is available from the IBM Distribution Center, Mechanicsburg:

System Description Manual	GH20-0673
PL/I Language Reference Card	GX20-1810
BASIC Language Reference Card	GX20-1811
FORTRAN Language Reference Card	GX20-1812

Promotional Material

CALL/360-OS Slide Set	GV20-0245
(Additional copies available from Audio Visual Services, DPD HQ)	
CALL/360-OS Brochure	G520-2220
CALL/360-OS 2741 Key Top Decals	GX20-1806

Program Listings: CALL/360-OS program listings of the EXECUTIVE, UTILITIES, FORTRAN, PL/I, and BASIC are available on microfiche and may be ordered from the IBM Distribution Center, Mechanicsburg.

EXECUTIVE	GYB0-0538
UTILITIES	GYB0-0539
FORTRAN	GYB0-0541
PL/I	GYB0-0542
BASIC	GYB0-0540

Programming RPQs will not be accepted at this time.

**SYSTEM/3 PROGRAM PRODUCT AIDS
MANUFACTURING CUSTOMERS
PROGRAM PRODUCT 5701-M42****Note to World Trade Readers**

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System/3 Card Bill of Material and Requirements Planning, program product 5701-M42, is a group of programs designed to help manufacturing customers implement their requirements planning applications.

This program product creates and maintains the bill of material file ... determines the low-level code for inventory items ... creates where-used file ... nets future requirements (lot sized or by time periods) for assemblies to develop gross requirements for components.

Other highlights are:

Product structure (single level) or product summary (quick deck) bills of material.

Level-by-level time series planning or summarized requirements planning.

Net requirements for piece parts can be lot sized (EOQ) in both planning techniques.

Automatic consideration of forecast of spare (service) part usage in planning.

The monthly charge is \$65. Availability is planned for October 30, 1970. The programming service classification is B. The Program Product Design Objectives (GH20-4061) are available from Mechanicsburg. Initial distribution will be made through DAPS.

No RPQs will be accepted at this time.

Details are in the sales manual write-up on the reverse side.

System Engineering Services ... SE Services, identified with and related to the installation and use of the IBM System/3 Program Product Aids Manufacturing Customers (5701-M42) Program Product, are available for a charge at the basic skill classification rate for individual assistance or the group service rate for assistance in the group service mode.

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.

John Fahey
WTC Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: June 8, 1970

Distribution: All Areas

P70-61A

Card Bill of Material and Requirements Planning (5701-M42): This program product is designed to help manufacturing customers install their requirements planning applications.

Description: The program product consists of the programs listed below and sort/merge functions that use Card System Utilities (5701-UT1) with feature #9011.

Activity Audit and Bill of Material - These programs assist the customer in creating and maintaining bills of material. The activity audit program edits changes, deletions, and additions to the bill of material file and provides an audit listing and input to the next program. The bill of material program accepts the activity input and the bills of material and provides an updated bill of material card file and a listing of the bills of material.

Increase Level and Replace Level - These programs are used to develop the low-level code for all items. The programs are used initially when the product summary bill of material file is created and periodically, as required, to insure accuracy of the low-level code. The where-used file is a by-product of low-level code generation.

Where-used - This program prepares the where-used report. A separate where-used file may be maintained, or the bill of material file can be sorted (or reproduced and sorted) to provide input to the program.

Requirements Generation - This program accepts requirements for assemblies and bills of material and punches component gross requirements. The program is designed so it can be used with a product structure (single level) or product summary (quick deck) bill of material file.

Requirements Planning - This program combines inventory information with gross requirements to determine what has to be ordered. Orders can be lot sized (EOQ) or planned for each time period in which there are net requirements (discrete order planning). Provision is made to automatically include a forecast of spare (service) part usage that is netted with other requirements.

Features:

Programs are used with sort/merge utilities to assist the customer in installing the requirements planning application.

Product structure (single level) or product summary (quick deck) bills of material.

Level-by-level time series planning or summarized requirements planning.

Net requirements for piece parts can be lot sized (EOQ) in both techniques.

Low-level code generation and where-used reports.

Automatic consideration of a forecast for spare (service) part usage.

Requirements for raw material developed on the basis of planning piece part orders.

Special Sales Information: Many aspects of these programs are discussed in the IBM Manual, Production Information and Control System (GE20-0280), including the use of the same symbolic labels for fields for the System/3 cards, which are defined for the disk oriented files in the appendix of this manual.

System/3 Order Point Technique for Inventory Management (program product 5701-M41) can be used to develop the forecast for spare (service) part usage and to update the item master card.

Use: The System/3 Card Bill of Material and Requirements Planning programs are designed to create and maintain the bill of material files and for order planning.

The activity audit and bill of material programs are used, as required, to keep the bills of material up-to-date.

The low-level code programs are used initially when the file is created and in the maintenance of low-level codes as a result of changes to the bills of material.

The where-used program is run if the customer requires a new listing.

Requirements generation and requirements planning are used periodically (for example, monthly) to develop the overall plan for production.

Customer Responsibilities: The customer must provide information to create and maintain bills of material. The bills of material must be accurate and up-to-date for requirements planning.

The customer must provide inventory information on the item master card for all items that are being planned.

The program product is designed to assist the user in the development of the overall production plan. Therefore, the user must develop programs and procedures for the execution of the plan. This includes the release of planned orders, allocation of component inventory for assembly orders, recording issues and receipts for accurate up-to-date status information for subsequent planning runs.

The user must have an understanding of the concepts embodied in these programs so that he can decide which items are to be planned in order to select the type of planning to be used, the length of the planning horizon, and the size of time periods to be used, etc.

The customer must provide the forecast of spare (service) part usage if this option is selected.

The customer must write routines to perform tasks not covered by these programs.

Programming Systems: The program product is written using Card RPG II (5701-RG1) with feature #9011. Source statements are provided with the program product; therefore, the customer requires RPG II.

The sort/merge programs utilize the Card System Utilities (5701-UT1).

Minimum System Requirements: A 5410 Processing Unit Model A2 with correct attachments ... 5424 Multi-Function Card Unit Model A1 ... 5203 Printer Model 1 for product structure (single level) bills of material, Attachment #5558 (120 positions) is required for product summary (quick deck) bills of material.

Basic Program Product Offering:

Licensed Documentation: One copy of the System Manual (feature #8008)*.

Unlicensed Documentation: One copy each of the Program Description Manual*, Operations Manual*, and Specification Sheet (form number will be announced when program is available).

Licensed Machine Readable: One copy of machine readable material consisting of source code and sample problem data on punched cards.

Specify: Feature No. 9011 for 96-column card.

Charge:

<u>Type</u>	<u>Program and DPMO Number</u>	<u>Programming Service Classification</u>	<u>Monthly Charge</u>
5701	M42	B	\$65.00

Related Documentation (order from Mechanicsburg): Application Description Manual (GH20-0770) ... Program Product Design Objectives (GH20-4061).

Reference Material: Production Information and Control System (GE20-0280) ... System/3 Order Point Technique for Inventory Management (GH20-0741).

For further information contact a Manufacturing Industry Marketing Representative.

*Prices (for additional copies) and form numbers will be announced when the program product is available.

**NEW PROGRAM PRODUCT IMPLEMENTS ORDER POINT INVENTORY CONTROL IN MANUFACTURING ORGANIZATIONS - PROGRAM PRODUCT 5701-M41****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 references 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.
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

System/3 Order Point Technique for Inventory Management, program product 5701-M41, consists of a group of programs especially designed to implement order point inventory control in manufacturing organizations.

The program product provides for (1) classification of inventory items for use in selection of order point and order quantity parameters, (2) computation of safety stock and order point, (3) preparation of order action notices that specify either order quantities calculated on the basis of periods of supply, or user provided fixed order quantities, (4) calculation of new average demand each time period, (5) updating of inventory status on the basis of transactions, and (6) preparation of a periodic stock status report.

Highlights

- . Exponential smoothing for calculating averages each time period.
- . Trend per time period recorded separately for ease of reference.
- . Calculation of Mean Absolute Deviation (MAD) for assistance in manually evaluating the setting of safety stock levels.
- . Identification of items that indicate surplus conditions on the basis of user defined limit factor.
- . Follow-up notices for items that have an on-hand balance below safety stock level.

The availability date is July 1, 1970. The Programming Service Classification is B. The monthly charge is \$50.

Details are on the following pages. The Program Product Design Objectives (GH20-4054) and Specifications (GH20-4009) are available from Mechanicsburg. Initial distribution will be made through DAPS.

No RPOs will be accepted at this time.

System Engineering Services ... SE Services, identified with and related to the installation and use of the IBM System/3 Order Point Technique for Inventory Management, (5701-M41) Program Product, are available for a charge at the basic skill classification rate for individual assistance or the group service rate for assistance in the group service mode.

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.

John Fahey
WTC Director of DP Marketing

Release Date: June 8, 1970

Distribution: All Areas

P70-61B

System/3 Order Point Technique for Inventory Management (5701-M41):

This program product is made up of a group of programs divided

into inventory analysis, stock status transaction processing, and order action. It is especially designed for implementing order point inventory in manufacturing organizations.

Description:

Inventory Analysis: Programs that provide for detailed analysis of inventory items on the basis of usage and cost. The output is useful for determining how items are to be controlled.

Stock Status: In addition to preparing the stock status report, the program calculates average demand using exponential smoothing, computes the on-hand value for each item and for the total inventory, and prepares a new item master card.

Transaction Processing: The program processes the day-to-day transactions that affect the inventory status of each item. On-hand, on-order, and exception requirements, as well as current sales and current usage, are updated.

Order Action: The current inventory status is checked by this program to determine if order action is recommended. Order point is calculated on the basis of lead time and safety stock stated in weeks, in conjunction with the current average demand calculated in the stock status program.

Features:

- Easily understood techniques for inventory control.
- Analysis program for use in selecting order point and order quantity parameters.
- Calculation of new average demand each time period.
- Exponential smoothing that records average, trend, and forecast separately for ease of reference and use.
- Computation of safety stock on the basis of weeks of supply.
- Computation of Mean Absolute Deviation (MAD) for assistance in manually evaluating and setting safety stock level.
- The ability to have order quantity specified by the user automatically, calculated on the basis of weeks of supply.
- Updating of inventory on the basis of transactions.
- Order action notices prepared on the basis of the most recent status information.
- Follow-up notices for items that have an on-hand balance below order point.
- Preparation of a periodic stock status report with inventory evaluation.

Special Sales Information: Many aspects of these programs are discussed in the **Production Information and Control System Manual (GE20-0280)** available from Mechanicsburg. This includes the use of the same symbolic labels for fields on the item master card for System/3 that are defined for the item master file in the appendix of the **Production Information and Control System Manual**.

Use: The System/3 Order Point Technique for Inventory Management programs use a card item master file for recording status, averages, and other information required for order point control.

The inventory analysis program is designed to be used periodically to assist in selection of control parameters. The stock status program is normally run on a monthly basis.

Transaction processing and order action programs should be run frequently (e.g., daily) to keep the inventory status current and provide order recommendations that are timely.

Customer Responsibilities: The user must construct a master inventory file. An item master card must be prepared for each item to be controlled using these programs.

The customer must also determine how transaction processing is accomplished for the overall operation. That is, what source must be used to prepare the transaction cards that update inventory status.

The user must have an understanding of the inventory control concepts embodied in these programs, so he can select (1) the parameters for order quantity and order point and (2) the alpha factor used in exponential smoothing.

The customer must write routines to perform tasks not covered by these programs. It is also the customer's responsibility to compile the program using the source statements provided.

Programming Systems: The programs are written using Card RPG II, program product 5701-RG1. Source statements are provided with the program product, therefore, Card RPG II is required for compilation. The sort programs utilize Card System Utilities, program product 5701-UT1. The sort can also be performed off-line.

Minimum System Requirements: A 5410 Processing Unit Model A2 with appropriate attachments ... 5424 Multi-Function Card Unit Model A1 ... 5203 Printer Model 1, with attachment #5558 (120 print positions).

Basic Material:

Unlicensed Documentation: One copy each of the Program Product Specifications (GH20-4009) ... Program Description Manual (SH20-0793) ... Operations Manual (SH20-0794).

Licensed Machine Readable Material: One copy of machine readable material consisting of source code and sample problem data on punched cards.

To order the basic material, specify number 9011 (cards).

Charge:

<u>Type</u>	<u>Program & DPMO Number</u>	<u>Programming Svcs. Classification</u>	<u>Monthly Charge</u>
5701	M41	B	\$50

Related Optional Material (no additional charge): To order, specify feature 7040.

Licensed Documentation: One copy of the System Manual.

Charges for Additional Copies of Documentation:

Licensed Documentation:

	<u>Feature/Form Number</u>	<u>Single Charge/Copy</u>
System Manual	8007 (LY20-0544)	\$1.10

Unlicensed Documentation:

	<u>Selling Price/Copy</u>
Program Description Manual (SH20-0793)	\$2.20
Operations Manual (SH20-0794)	1.00

General Documentation: Application Description Manual (GH20-0741) and Program Product Design Objectives (GH20-4054) are available from Mechanicsburg. Initial distribution is made through DAPS.

Reference Material (available only from Mechanicsburg): Production Information and Control System (GE20-0280) ... Application Description Manual - System/360 Inventory Control (GH20-0471) ... Wholesale IMPACT Inventory Management Program and Control Techniques (GE20-8105).



**SYSTEM/3 ACCOUNTS RECEIVABLE
PROGRAM AIDS SMALL HOSPITALS
PROGRAM PRODUCT 5701-H11**

The System/3 Hospital Accounts Receivable (program product 5701-H11) helps smaller hospitals effectively maintain control of receivables through timely management reporting. In addition, patient-hospital communication is facilitated by periodic reporting on status of accounts to the patients.

The program provides for the creation and addition of new patient accounts to the accounts receivable file and processing transactions against the receivables file.

The monthly charge is \$35.00. The availability is July 1, 1970. The Programming Service Classification is B.

Features of the application include:

- . Cash reporting and control.
- . Printing statements in full detail while optionally selecting certain financial classes.
- . Printing aged accounts analysis with the option of selecting accounts over a certain age.
- . Printing of accounts to be deleted when paid up or at a minimum balance selected by the user.

The program provides the following reports by processing the account master file and account transaction file:

- . *Entered Accounts Receivable* - a detailed list of final billed patients with account balances at discharge time, reflecting both insurance company balances and patient balances.
- . *Cash Receipts and Adjustments* - a detailed report showing all payment and adjustment transactions for the day.
- . *Account Statements* - a detailed statement of account.
- . *Account Status Report* - a detailed list of all activity in the account from the time it was entered to the present time.
- . *Aged Accounts Analysis* - a summary of each account aged by the number of months the

account has been active. Summary totals are provided by each age category.

. *Insurance Accounts Receivable* - a summary of estimated amount and balance due from each insurance company for each patient.

. *Delete Accounts* - a summary of each account reflecting a zero balance or a user selected write-off amount. This report is used to purge the master and transaction files of paid up accounts.

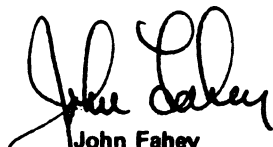
The Program Product Design Objectives (GH20-4057) and Specifications (GH20-4011) are available from Mechanicsburg. Initial distribution will be made through DAPS.

No RPOs will be accepted at this time.

Details are in the sales manual write-up on the reverse side.

System Engineering Services ... SE Services, identified with and related to the installation and use of the IBM System/3 Accounts Receivable Program Aids Small Hospitals (5701-H11) Program Product, are available for a charge at the basic skill classification rate for individual assistance or the group service rate for assistance in the group service mode.

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.


John Fahey
WTS Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: June 8, 1970

Distribution: All Areas

P70-61C

Hospital Accounts Receivable (5701-H11): This program provides the smaller hospitals having a card oriented System/3 data processing system the capability to perform the major processing runs in the accounts receivable area, including accurate and timely information to management for better accounting control.

Description: Design of the program allows the user to enter accounts receivable data cards punched from information derived at final billing time. The program provides entry to accounts receivable ... cash receipts and adjustments ... aged accounts analysis ... account status ... statement writing ... insurance accounts receivable ... delete accounts.

Features: Each program of the application is loaded by an object program card deck at the time it is to be run.

- Entered Accounts Receivable -- final billing totals, including prorated insurance amounts, are accepted by the programs to set up an account for a discharged patient.
- Cash Receipts and Adjustments -- cash receipts, late charges, and adjustments are merged into the transaction file, and a list is printed with control totals.
- Aged Accounts Analysis -- the accounts receivable file is automatically aged, and a report produced showing the age of the accounts by months. A summary is also produced showing total dollars in age categories. The user may specify printing of accounts over a certain number of months old.
- Status Report -- a full detailed listing is provided showing the complete history of the account.
- Statement Writing -- statements of accounts are prepared in open item format. An option is provided for printing a specified financial class.
- Insurance Accounts Receivable -- reports the amount estimated and balance due from each insurance company by patient.
- Delete Accounts -- as an account reaches zero balance, a report is printed showing the accounts to be removed from the file. An option is provided to include accounts with a write-off balance as specified by the user.

Use: When a patient is final billed (after discharge), the final amounts are punched into cards and entered into the Accounts Receivable Master File. As financial transactions occur, they are entered into the system for posting to the accounts. Appropriate audit lists and totals are provided. Daily and periodic reports are printed from the data provided.

Customer Responsibilities: Design of statement forms for use by the statement writing program ... creation of master insurance company name file ... conversion of present accounts receivable master and transaction data to card format and establishing control totals.

Programming Systems: All programs of the accounts receivable system are written in RPG II. Program products required to install the system include the Card RPG II (5701-RG1) and the Card System Utilities (5701-UT1).

Minimum Machine Configuration: 5410 Processing Unit Model A2 (8K) with feature #4100 (MFCU attachment), #3970 (printer attachment), #9495 (print position attachment) ... 5424 Multi-Function Card Unit Model A1 (read 250 cpm, punch and print 60 cpm) ... 5203 Printer Model 1 (100 lpm, 96 print positions), #5558 24 additional print positions.

Basic Material:

Unlicensed Documentation: One copy each of Program Description Manual (SH20-0801) ... Operations Manual (SH20-0800) ... Program Product Specifications (GH20-4011).

Licensed Machine Readable Material: One copy of machine readable material containing source program modules and sample problem data.

To order the basic material, specify 9011 (96-column card).

Charge:

Type	Program & DPMO Number	Programming Svc. Classification	Monthly Charge
5701	H11	B	\$35.00

Related Optional Material (no additional charge): To order, use feature 7040.

Licensed Documentation: One copy of Systems Manual.

Charges for Additional Copies of Documentation:

Licensed Documentation:

	Feature/Form No.	Single Charge/Copy
Systems Manual	8000 (LY20-0562)	\$4.20

Unlicensed Documentation:

	Selling Price/Copy
Program Description Manual (SH20-0801)	\$2.10
Operations Manual (SH20-0800)	1.80

General Documentation: Application Description Manual (GH20-0762) and Program Product Design Objectives (GH204057) are available from Mechanicsburg. Initial distribution will be made through DAPS.

Note to World Trade Readers

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- [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 references 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.
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



IBM World Trade Data Processing

PROGRAM PRODUCT ANNOUNCEMENT

**1800 CHROMATOGRAPH MONITORING
PROVIDES SUPPORT FOR LABORATORY
AUTOMATION**

The 1800 Chromatograph Monitoring program product (5718-XX1) provides advanced data acquisition and fused peak analysis techniques for the simultaneous monitoring of multiple chromatographs in real-time. It is particularly well suited to the quality control laboratory environment.

Advantages

- Reduced time between sample-taking and availability of results.
- Greater accuracy and better reproducibility of analyses.
- Better utilization of analyst time.
- Greater chromatograph utilization through computer control.

The program operates under the 1800 Time-Sharing Executive System (TSX), or the 1800 Multi-programming Executive System (MPX)

The sales manual text on the reverse side provides you with a comprehensive list of program features and other detailed information.

Estimated Availability -- November 6, 1970.

The monthly charge is \$160. The Programming Service Classification is B.

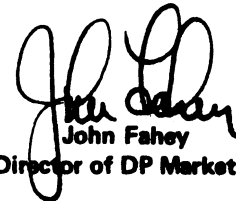
No RPOs will be accepted at this time.

The Program Product Design Objectives page may be detached or reproduced and given to customers.

Availability of the Application Description Manual will be announced in a Publications Release Letter. Initial DAPS quantities will be shipped at that time, and additional copies will be made available from the IBM Distribution Center, Mechanicsburg, Pennsylvania.

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM 1800 Chromatograph Monitoring Provides Support For Laboratory Automation (5718-XX1) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.



John Fahey
WTC Director of DP Marketing

IBM 1800 Chromatograph Monitoring (Program Product 5718-XX1)

This program product provides advanced data acquisition and fused peak analysis techniques for the simultaneous monitoring of multiple chromatographs in real-time. It is particularly well suited to the quality control laboratory environment. The program reads the chromatograph detector signal, analyzes the peak spectrum, and produces a report of the results.

The estimated availability is November 6, 1970.

Objectives

- To decrease turn-around time on chromatograph runs.
- To provide greater accuracy and better reproducibility than manual methods.
- To decrease the analyst time required for chromatograph operation.
- To provide greater chromatograph utilization through computer control.

The maximum number of chromatographs that can be monitored is a function of the 1800 core size and speed, and the scanning frequency desired. Typical systems will have 10-60 chromatographs wired with 10-30 operating simultaneously.

Extensive digital filtering is employed to minimize noise problems. A spike rejection technique is applied to the raw data. First and second curve derivatives are calculated using a least squares method. Exponential smoothing is applied to raw data and curve derivatives. Dead bands and confirming counts are used to insure that only significant, persistent changes in the derivatives are considered. All filter parameters are adjustable and can be changed during a run.

Backflushing and column switching can be controlled by the program.

The rate of scanning each chromatograph can be varied individually, and can be changed during a run.

Analytical methods (e.g., run parameters, peak decomposition method, type of run) can be defined and updated in real-time by a series of data cards without interrupting the routine operation of the system.

Multiple reference peaks can be used to improve the estimation of expected peak times.

The program provides for peak recognition, computation of peak areas, base line correction, and fused peak decomposition using one of several defined methods, including a least squares curve fitting technique.

The lab analyst initiates scanning of his chromatograph by entering information about the analytical method to be used, the chromatograph number, date and time of the sample, and other experimental parameters through an IBM 1092 Keyboard and then closing the chromatograph start switch. The chromatograph start light is turned on confirming computer monitoring. No further attention by the analyst is required to record the spectrum and produce the report. Off-line or background jobs can be executed during the monitoring of the chromatographs.

Programming Systems

The IBM 1800 Chromatograph Monitoring Program is written in 1800 Assembler Language and 1800 FORTRAN. It operates under either the 1800 Time-Sharing Executive (TSX) or the 1800 Multiprogramming Executive (MPX). The calculation routines, and the analysis report output programs, are written in FORTRAN to facilitate modification.

Minimum System Configuration

This system requires a 16K 1800 with a two or four microsecond memory speed for the TSX version and a 24K 1800 for the MPX version. Input/output devices necessary are a 1442 Card Read Punch Model 6 or 7, an 1816 Printer-Keyboard, and a 1053 Printer. The TSX version requires one disk drive; the MPX version requires two drives. A 1443 Printer would be advisable if there is much time-sharing or background work. An additional disk storage drive might also be advisable if a large number of chromatographs are to be monitored using many methods with a large number of peaks. A 1092 Matrix Keyboard is required for parameter entry. For each chromatograph wired to the system the following is necessary:

- Four analog input MPX/R points (one on each of four input voltage levels, i.e., 10 mv, 50 mv, 500 mv, 5 volts)
- One point of process interrupt contact
- One point of contact closure

Programming Service Classification: B

Special Notice

As stated in the License Agreement for IBM Program Products, IBM does not represent or warrant that these design objectives or estimated availability dates will be met

1800 Chromatograph Monitoring Program Product:
(5718-XX1)

Provides advanced data acquisition and fused peak analysis techniques for

the simultaneous monitoring of multiple chromatographs in real-time. The program scans the signals from the chromatographs, analyzes the peak spectrum, and produces the reports. It is particularly well suited to the quality-control laboratory environment.

Description: The Chromatograph Monitoring Program operates either under the 1800 Time-Sharing Executive (TSX) or the 1800 Multiprogramming Executive (MPX). Time-sharing jobs may execute concurrently in the TSX version, and background jobs in the MPX version.

The advantages are reduced turn-around time on chromatograph runs, greater accuracy and better reproducibility than manual methods, better utilization of analyst time, and greater chromatograph utilization through automatic control.

The maximum number of chromatographs that can be monitored is a function of 1800 core size and speed, and the scanning frequency desired. Typical systems have 10-60 chromatographs wired, with 10-30 operating simultaneously.

Features: Extensive digital filtering techniques are employed to minimize noise problems, including spike rejection of raw data. First and second curve derivatives are calculated using a least squares technique. Exponential smoothing is applied to raw data and curve derivatives. Dead bands and confirming counts are used to insure that only significant, persistent changes in the derivatives are considered. All filter parameters are adjustable and can be changed during a run.

Backflushing, and column-switching can be controlled by the program.

The rate of scanning each chromatograph can be varied individually, and can be changed during a run.

Analytical methods (e.g., run parameters, peak decomposition method, type of run) can be defined and updated in real-time by a series of data cards without interrupting the routine operation of the system.

Multiple reference peaks can be used to improve the estimation of expected peak times.

Peak areas can be calculated by several methods including a least squares curve fitting technique.

Use: The lab analyst initiates scanning of his chromatograph by entering information about the analytical method to be used, the chromatograph number, date and time of the sample, and other experimental parameters through an IBM 1092 Keyboard, and then closing the start switch on the chromatograph. The chromatograph start light is turned on confirming computer monitoring. No further attention by the analyst is required to record the spectrum and produce the report. Off-line or background jobs can be executed during the monitoring of the chromatographs.

Customer Responsibilities: The customer is responsible for performing the following functions:

Installing start buttons and lights at each chromatograph with cabling to the 1800 PI and ECO terminals.

Providing low-noise, low-impedance chromatograph analog signals to the 1800.

Generating a suitable TSX or MPX operating system.

Defining system equates which specify his machine configuration addressing.

Generating the required COMMON/INSKEL/cards using a utility program provided.

Compiling or assembling the package programs supplied in source form and building the core loads and data files.

Maintaining suitable listings and core maps for the use of system maintenance personnel.

Programming Systems: The Chromatograph Monitoring Program is written in 1800 Assembler language and 1800 FORTRAN. (Operates under TSX or MPX). The calculation routines and the analysis report programs are written in FORTRAN to facilitate modification.

Minimum Machine Configuration: 1801 Processor-Controller Model 1C or 2C for TSX users or Model 1CB or 2CB for MPX version 1442 Card Read Punch Model 6 or 7, 1810 Disk Storage Model A1 or C1 for TSX, Model A2 or C2 for MPX, 1816 Printer-Keyboard Model 1, 1053 Printer Model 3, 1828 Enclosure Model 2, Process Interrupt-Contact (#5715)*, Analog-Digital Converter Model 1 (#1231), two 1851 Multiplexer Terminals Model 1, Multiplexer/R (#5252)**, three Differential Amplifiers (#3246)***, Filter Elements (#3597)#, Electronic "Contact" Operate (#3612)##, 1894 Model 10 Control Keyboard Adapter (RPQ C08056) Option B, 1894 Model 1, 1092 Keyboard Attach (RPQ C08057), 1092 Matrix Keyboard Model 1.

*One group for each 16 chromatograph start buttons plus the requirements of RPQ C08056.

**Four groups for each 16 chromatographs connected, one group per input voltage range.

***One amplifier for each input voltage range except high level. Suggested ranges are +10mv, +50mv, +500mv, and -.5 to 5 volts (high level).

#Four for each chromatograph connected (one per MPX/R point)

##One group for each 16 chromatograph start lights plus the requirements of RPQ C08056

Note: Only the 12 standard interrupt levels are allowed if the TSX version is to be installed.

Consideration should be given to a 1443 Model 1 or 2 if there is much time-sharing or background work to be done. An additional disk drive is advisable if a large number of chromatographs are running simultaneously, using many methods, with a large number of peaks per method.

The program requires a Variable Core of 5,600 words, 1,915 words for Skeleton Programs, and approximately 2,670 words of Skeleton COMMON.

To compile and build the program requires the above configuration without the Process I/O and the 1092 Matrix Keyboard and its attachments.

Basic Program Product Offering

Unlicensed Documentation: One copy each of the Operations Manual*, and Program Description Manual*.

Licensed Machine Readable Material: One copy of Machine Readable Material containing the Chromatograph Monitoring Program Source Program Modules and Sample Problem.

	Specify Number	Description	Quantity
Customer Supplied	#9058	2315 Disk Cartridge	1 disk
Order from IBM	#9158	2315 Disk Cartridge	1 disk

Price

Type	Program Number	DPMO No.	Programming Service Classification	Monthly Charge
5718	XX1	XX1	B	\$160.00

*Manuals will be available when program is available.

Optional Support Package

Licensed Documentation: One copy of Systems Manual #7002.

Related Program Product Documentation (Order from Mechanicsburg): Application Description Manual (availability to be announced in a Publications Release Letter).

Publication Support: Initial supplies of the unlicensed Basic Program Product form-numbered publications will be distributed through DAPS. Order additional copies as well as copies of licensed publications from the IBM Distribution Center, Mechanicsburg, Pennsylvania when availability is announced in the Weekly Publications Release Letter.

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 references 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.
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



**IBM ANNOUNCES THE SYSTEM/360 ACTIVE
CERTIFICATE INFORMATION PROGRAM
PRODUCT (5736-F32)**

Program Product 5736-F32 is for the Active Box Section of the Cashier's Department of Brokerage Firms or Commercial Banks. It provides the user with a tool which permits more efficient operation of the Active Box by providing inquiry information on the inventory of security certificates which are maintained by groups of denomination (Resources) and pending instructions (Requirements). Data entries and inquiries are made by means of local IBM 2260 Visual Display Terminals located in the cage or vault.

The planned availability is December 15, 1970. The monthly charge is \$300. The program service classification is B.

Highlights ...

- Immediate security resource information.
- Immediate information on summarized security requirements.
- Reduction of manual entries associated with recording of certificate moves.
- Reconciling physical box counts (inventory) at any time.
- Immediate turnaround of certificates when an existing requirement can be visually matched to an incoming certificate.

The program product design objective sheet on the inside page may be detached or reproduced and given to customers.

No RPQs will be accepted at this time.

Details are on the reverse side. A preliminary copy of the Application Description Manual is available from Finance Industry Marketing, Princeton, New Jersey.

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM System/360 Active Certificate Information (5736-F32) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.

John Fahey
WTS 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 references 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**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

System/360 Active Certificate Information Program (Program Product 5736-F32)

This program is designed for implementation within the Cashier's Department of a Brokerage Firm or Commercial Bank. It provides on-line data entry, inquiry, and posting to a certificate inventory and requirement file.

Through the use of IBM 2260 Visual Display Terminals, the movement of stock certificates to and from the Active Box Section of the Cashier's Department are recorded to maintain an on-line inventory, by major denomination categories, of the Active Certificates (Resources). Upon installation, the user will have access to his position of any Active Box security at the time for inquiry.

To provide further assistance to the user, the program retains, on-line, a summary file of pending delivery instructions (Requirements). This file, which is updated daily by a user written program, is posted by the Active Certificate Information Program as the execution of deliveries are recorded on the IBM 2260 Visual Display Terminal.

The Active Certificate Information Program is implemented in the Active Box Section of the Cashier's Department where operations are performed by the box clerks. Box transactions are primarily the recording of receipts and delivery of securities. Normally, the records of the Box transactions are manually written, hand-coded, and then keypunched for entry into the firm's back-office accounting system. Delivery requirements come in the form of tickets, and the box clerk must manually search through stacks of certificates to determine the availability of required denominations before any delivery can be made. These methods contribute to the paperwork log jam. This program is designed to assist in alleviating many of the problems in this area.

The planned availability is December 15, 1970. The program service classification is B.

Highlights:

Through the use of IBM 2260 display terminals located in the cage or vault, this program provides for:

- . Immediate security Resource information.
- . Immediate information on summarized security Requirements.
- . Reduction of manual entries associated with recording of certificate movements.
- . Reconciling physical box counts (inventory) at any time.
- . Requirements can be visually matched to an incoming certificate.
- . The capability of preventing unauthorized personnel from making entries or inquiries to the files.
- . The capability to post to both the Requirements (Pending Delivery) and Resource (Certificate Inventory) fields as changes occur.
- . Computer-assisted look-up of CUSIP number or firm's security number.
- . The capability of recording individual certificate numbers when posting certificate movements.
- . Accommodation of common and preferred stock; corporate, municipal and government bonds; rights and warrants.
- . A phased cutover at the user's option.
- . Inquiry to be made by ticker symbol (for operator convenience).

The Active Certificate Information Program places at the fingertips of the operator the information necessary to efficiently allocate existing certificate inventory in meeting the users' obligations to the financial community. By this means, the program provides information to reduce "fails" and stock borrowed costs. At the same time, opportunities to lend stock to other firms become more obvious.

Description: This application program consists of source program code and supporting documentation for use in installing this program.

The following major functional areas are supported by means of an IBM 2260 Visual Display Terminal:

Data Entry and format editing, recording of all Receive and Deliver transactions (Data Capture File), terminal display of Resource (Certificate Inventory) information, terminal display of summarized Requirements (pending Delivery) information, posting of receive and deliver transactions to the On-Line Master Security Description File (MSD), and inquiry of MSD file by ticker symbol (Symbol file provided by user).

Programming Systems: IBM System/360 Disk Operating System ... Basic Telecommunications Access Method (BTAM) including Communications Serviceability facilities ... Index Sequential File Management System ... DOS Utilities ... DOS Assembler.

Minimum System Requirements:* An IBM System/360 Model 30 Central Processing Unit 64K bytes with Decimal Arithmetic (3237), Interval Timer (4760), Storage Protection** (7520), Selector Channel (6960), and 1051 Attachment (7915) ... 1051 Control Unit Model N1 ... 1052 Printer/Keyboard Model 8 ... 2540 Card Reader/Punch Model 1 ... 1403 Printer Model 2 ... 2821 Control Unit ... 2415 Magnetic Tape Unit and Control*** Model 1 ... 2848 Display Control Model 2 ... 2260 Display Station Model 2 ... 2314 Direct Access Storage Facility**** Model A1 OR 2841 Storage Control Model 1 with 2311 Disk Storage Drives**** Model 1 as required to contain DOS/360 and the user's data files.

The Active Certificate Information program requires 44K bytes of core in addition to DOS Supervisor facilities.

*For off-line updating, a minimum of three IBM 2311 Disk Storage Drives are required. In addition sufficient disk or tape capacity to accommodate the user's Security Master File as input to this program is needed.

**Required if Multi-Programming is planned by the user.

***Magnetic tape drives are recommended for the user's off-line support programs. On-line, a tape can be used for the Back-up Data Capture File.

****One IBM 2311 Disk Storage Drive or IBM 2314 Module is required for the DOS System Residence. In addition, the following information can be used for calculating the on-line file requirements:

File Name & Organization	2311	2314
MSD File (Index Sequential)	108 rec. per cyl.	456 rec. per cyl.
Symbol File (Index Sequential)	1060 rec. per cyl.	3,800 rec. per cyl.
Data Capture (Sequential)	130 rec. per cyl.	460 rec. per cyl.
Back-up Data Capture (Sequential)	130 rec. per cyl.	460 rec. per cyl.

IBM does not represent or warrant that these design objectives or planned availability date will be met.

Active Certificate Information Program (5736-F32): This program, designed for implementation within

the Cashier's Department of a Brokerage Firm or Commercial Bank, provides on-line data entry, inquiry, and posting to a certificate inventory and requirement file.

Through the use of IBM 2260 Visual Display Terminals, the movement of stock certificates to and from the Active Box Section of the Cashier's Department are recorded to maintain an on-line inventory, by major denomination categories, of the Active Certificates (Resources). Upon installation, the user will have access to his position of any security at the time of inquiry.

To provide further assistance to the user, the program retains, on-line, a summary file of pending delivery instructions (Requirements). This file, which is updated daily by a user written program, is posted by the Active Certificate Information Program as the execution of deliveries are recorded on the 2260 Visual Display Terminal.

The Active Certificate Information Program is implemented in the Active Box Section of the Cashier's Department where operations are performed by the box clerks. Box transactions are primarily the recording of receipts and delivery of securities. Normally, the records of the box transactions are manually written, hand-coded, and then key-punched for entry into the firm's back-office accounting system. Delivery requirements come in the form of tickets, and the box clerk must manually search through stacks of certificates to determine the availability of required denominations before any delivery can be made. These methods contribute to the paperwork log jam. This program is designed to assist in alleviating this problem area.

Highlights: Through the use of IBM 2260 Visual Display Terminals located in the cage or vault, this program provides for:

- Immediate security Resource Information
- Immediate information on summarized security Requirements.
- Reduction of manual entries associated with recording of certificate movements.
- Reconciling physical box counts (inventory) at any time.
- Requirements that can be visually matched to an incoming certificate.
- The capability of preventing unauthorized personnel from making entries or inquiries to the files.
- The capability to post to both the Requirements (Pending Delivery) and Resource (Certificate Inventory) fields as changes occur.
- Computer assisted look-up of CUSIP number or firm's security number.
- The capability of recording individual certificate numbers when posting certificate movements.
- The accommodations of common and preferred stock; corporate, municipal, and government bonds; rights and warrants.
- A phased cutover at the user's option.
- Inquiry to be made by ticker symbol (for operator convenience).

The Active Certificate Information Program places at the fingertips of the operator the information necessary to efficiently allocate existing certificate inventory in meeting the users obligations to the financial community. By this means, the program provides information to reduce "fails" and stock borrowed costs. At the same time, opportunities to lend stock to other firms become more obvious.

Description: This application program consists of a source program code and supporting documentation for use in installing this program.

The following major functional areas are supported by means of an IBM 2260 Visual Display Terminals:

Data Entry and format editing, recording of all Receive and Deliver Transactions (Data Capture File), terminal display of Resource (Certificate Inventory) information, terminal display of summarized Requirements (pending Delivery) information, posting of receive and deliver transactions to the On-Line Master Security Description File (MSD), and inquiry of MSD file by ticker symbol (Symbol file provided by user).

Special Sales Information: These programs will run normally during the day. The equipment portion is, therefore, available to be utilized in the evenings for other applications.

Use: The Active Box personnel will use the system to assist his control of movements of securities.

Customer Responsibilities: A thorough knowledge and understanding of this program and application area before installation ... write conversion programs to create the on-line MSD from the Security Master File ... write programs to format the output for printing and for punching and entry into other systems ... write the off-line update programs for file maintenance ... provide security symbol file (optional).

Programming Systems: IBM System/360 Disk Operating System ... Basic Telecommunications Access Method (BTAM) including Communications Serviceability feature ... Index Sequential File Management System ... DOS Utilities ... DOS Assembler.

Minimum System Requirements: * System/360 Central Processing Unit 64K bytes (2030F) with Decimal Arithmetic (=3237), Interval Timer (=4760), Storage Protection** (=7520), Selector Channel (=6960), and 1051 Attachment (=7915) ... 1051 Control Unit Model N1 ... 1052 Printer-KeyBoard Model B ... 2540 Card Reader/Punch Model 1 ... 1403 Printer Model 2 ... 2821 Control Unit ... 2415 Magnetic Tape Unit and Control** Model 1 ... 2848 Display Control Model 2 ... 2260 Display Station Model 2 ... 2314 Direct Access Storage Facility**** Model A1 or 2841 Storage Control Model 1 with 2311 Disk Storage Drives**** Model 1 as required to contain DOS/360 and the user's data files.

The Active Certificate Information program requires 44K bytes of core in addition to DOS Supervisor facilities.

*For off-line updating, a minimum of three 2311 Disk Storage Drives are required. In addition, sufficient disk or tape capacity to accommodate the user's Security Master File as input to this program is needed.

**Required if Multi-Programming is planned by the user.

***Magnetic tape drives are recommended for the user's off-line support programs. On-line, a tape can be used for the Back-up Data Capture File.

****One 2311 Disk Storage Drive or 2314 Module is required for the DOS System Residence. In addition, the following information can be used for calculating the on-line file requirements.

File Name and Organization	2311	2314
MSD File (Index Sequential)	108 rec. per cyl.	456 rec. per cyl.
Symbol File (Index Sequential)	1080 rec. per cyl.	3,600 rec. per cyl.
Data Capture (Sequential)	130 rec. per cyl.	460 rec. per cyl.
Back-up Data Capture (Sequential)	130 rec. per cyl.	460 rec. per cyl.

Basic Program Product Offering:

Unlicensed Documentation: One copy each of the Program Description Manual ... Operations Manual†.

Licensed Machine Readable Material: One copy of machine readable material consisting of source code and sample problem. To order, select one of the following specify numbers:

Specify Number	Track/Density	Description
9025	7 DC/800	DTR
9030	9/1600	DTR
9027	9/800	DTR

Charge:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	F32	F32	B	\$300

Optional Support Package (no additional charge):

Licensed Documentation: One copy of the Systems Manual†

Related Documentation: Application Description Manual†.

†Prices (for additional copies) and form numbers of licensed, unlicensed, and related documentation will be announced when the program is available.

For further information contact Finance Industry Marketing, Princeton, New Jersey.

Publication Support: The availability of the publications will be announced in a future Publications Release Letter. Initial DAPS quantities will be shipped at that time and additional copies will be made available at the IBM Distribution Center, Mechanicsburg, Penna.



IBM World Trade Data Processing

PROGRAM PRODUCT ANNOUNCEMENT

SYSTEM/360 SHARED LABORATORY INFORMATION SYSTEM (SLIS) PROGRAM PRODUCT TO BE AVAILABLE 9/14/70

SLIS provides data processing support for hospital clinical laboratories. Operating with the Disk Operating System (DOS) and the Shared Hospital Accounting System (SHAS) executive, the program handles batched input of laboratory requisitions and test results, producing reports for use throughout the hospital. SLIS assists the hospital laboratory director in responding to major data handling problems including:

- . Processing the increased number of laboratory tests required in routine diagnostic investigation.
- . Controlling hospital costs through proper entry of charges as test by-products.
- . Insuring highest test quality while reducing clerical efforts by laboratory personnel.

Planned Availability: The planned availability of this program product (5736-H12) is September 14, 1970.

Highlights:

- . The system produces a full complement of laboratory working documents, ward reports, cumulative summary reports, and statistical reports.
- . Program design allows tailoring of formats and procedures to meet the separate needs of several hospitals sharing a common computer.
- . Input and output of the system may optionally use the SHAS teleprocessing executive allowing remote data entry and report production.
- . The lab application programs complement the SHAS accounting applications through the use of a common admission procedure and automatic charge generation.
- . Both shared and non-shared users can make use of the SLIS adaptability features:
 - . Clinical Laboratory Master tailored processing allows description of all data processing characteristics of each laboratory procedure.
 - . The Hospital Profile allows each hospital to

describe its own constants, coding structures and tables for SLIS.

Report Format Control allows each user to receive reports in a format tailored to his particular specifications.

The SLIS programs may be run on a System/360 32K Model 25 - DOS COBOL disk and tape system (or larger).

The monthly charge is \$250. The Programming Service Classification is B.

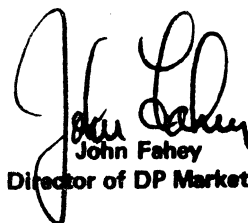
No RPOs will be accepted at this time.

The program product design objectives sheet may be detached or reproduced and given to customers. The sales manual text on the reverse side provides you with prices and other detailed information.

For additional information, contact your Medical Industry Marketing Representative, GEM Region.

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM System/360 Shared Laboratory Information System (SLIS) (5736-H12) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.



John Fahey
WTC Director of DP Marketing

Release Date: June 10, 1970

Distribution: Selected European Countries Only

P70-62C

Shared Laboratory Information System (SLIS) (Program Product 5736-H12)

The IBM Shared Laboratory Information System (SLIS) provides data processing support for hospital clinical laboratories. Operating with the Disk Operating System (DOS) and the Shared Hospital Accounting System (SHAS) executive, the programs handle batched input of laboratory requisitions and test results, producing reports for use throughout the hospital. The system produces a full complement of laboratory working documents, ward reports, cumulative summary reports, and statistical reports.

The program design allows tailoring of formats and procedures to meet the separate needs of several hospitals sharing a common computer. Both shared and non-shared users can make use of the SLIS adaptability features. Also each user can receive reports in a format tailored to his particular specifications.

Input and output of the system may optionally use the SHAS teleprocessing executive allowing remote data entry and report production. The laboratory application programs complement the SHAS accounting applications through the use of a common admission procedure and automatic charge generation.

Availability ... The planned availability of SLIS is September 14, 1970. The SLIS Laboratory Manual, which will assist in the planning of an installation, is planned for availability April 15, 1970.

Programming Systems ... The SLIS application programs are written in DOS COBOL and Assembly language. Also used are the executive facilities and census subsystem of SHAS, the DOS Sort/Merge, and the DOS Utility programs. Current releases of DOS and SHAS (360A-UH-11X) are required.

Minimum Machine Configuration ... For non-teleprocessing systems, the minimum DOS COBOL system...E processing Unit (32K)...two Magnetic Tape Units and Control...three 2311 Disk Storage Drives Model 1 are required for running the sample problem. Background application programs require 22K (K=1024 bytes) of the appropriate model.

For teleprocessing systems, the minimum DOS QTAM multiprogramming system with interval timer (feature 4760) including requirements for non-teleprocessing systems, specified above.

Programming Service Classification is B. The programming service classification assigned to any licensed program may be changed by IBM upon six months' notice. Some reclassifications may constitute a discontinuance of service.

SLIS is designed so that it may run compatibly with the SHAS executive and application programs.

As stated in the License Agreement for IBM Program Products, IBM does not represent or warrant that these design objectives or planned availability dates will be met.

Shared Laboratory Information System (SLIS) (5736-H12): SLIS provides data processing support for hospital clinical laboratories. Operating with DOS and the Shared Hospital Accounting System (SHAS), the programs handle batched input of laboratory requisitions and test results, producing reports for use throughout the hospital. The system produces a full complement of laboratory working documents, ward reports, cumulative summary reports, and statistical reports.

Description: SLIS is a comprehensive and flexible set of application programs for hospital clinical laboratories. The system addresses the total data processing needs of the laboratory, from laboratory test requests through result input and reporting including workload statistics, monthly statistical reports and an index to the cumulative patient summary reports. The programs also interface directly with the Shared Hospital Accounting System (SHAS) programs using a common admission procedure, a common master file for maintenance of patient biographic information, a common record format for automatic transfer of laboratory charge information and a common laboratory management reporting capability. Like the SHAS programs, the SLIS programs are structured to operate in a multi-hospital shared environment. One or more hospitals may share the data processing support of SLIS on a single computer system. Input and output may be transmitted over telephone lines through the facilities available in SHAS teleprocessing support.

Adaptability and flexibility of data maintained, processed, and reported by various user hospitals are provided by the incorporation in SLIS of the Hospital Profile and Report Format Control (RFC) features of SHAS. In addition, SLIS contains a third adaptability and installation aid, CLM Tailored Processing. All of the data processing characteristics of each test performed in each laboratory are described by the user in a special file, the Clinical Laboratory Master (CLM). This file controls the SLIS programs in all major processing steps. CLM Tailored Processing allows processing alterations reflecting the requirements of laboratory procedure changes and the addition of new tests. These alterations can be made throughout the life of the system without requiring program modification.

Highlights: Availability of a cumulative laboratory summary report for each patient on a daily basis. This report presents result information in a fashion which will facilitate review by the physician.

- Automatic generation of laboratory working documents, eliminating the need for many manual transcriptions.
- Generation of workload and statistical reports for each laboratory. The statistical reports can help the pathologist develop local normal range information.
- Automatic accumulation of patient charge information in the SHAS format. Depending on the CLM specification for each test, charging can be done when the test is requested or when the result is returned.
- Inclusion of laboratory result reporting for outpatients consistent with inpatient procedures. Laboratory handling of inpatient and outpatient specimens can be the same.
- A free form result reporting format which facilitates the entry of results by the technician.
- Laboratory determined checks for correct field content and reasonableness of reported results. This includes the ability to automatically check results with those of the same patient and the same test performed on previous days.
- Inpatient biographic information automatically extracted from the files created by the SHAS census subsystem.
- A combination order analysis facility, allowing the lab to specify the most efficient method to process each set of tests on a requisition. Tests can be performed singly or in groups, as is appropriate.

Special Installation Information: The critical nature of the laboratory application requires that installation planning be particularly careful and complete. All procedural details must be clearly defined before the system is installed. To facilitate the planning process an additional manual is available as part of SLIS, the Laboratory Manual. This manual contains information required by each laboratory to prepare for the installation of the system.

Customer Responsibilities: In preparation for the installation of SLIS, the user --

- Prepares entries for the SLIS master files as specified in the Laboratory Manual. This includes specification in the CLM of test code numbers, test names, print sequence priorities, normal and extreme ranges, and other test related options.
- Insures that the format of test request forms, test result cards and printed documents produced by the system are appropriate to his installation. Input format changes are possible by altering the input editing program with COBOL statement changes and edit table changes. Printed output changes are possible, in many cases, with the Report Format Control facility.
- Installs the census subsystem of SHAS providing admission and patient data updating procedures as a basis for SLIS.

Programming Systems: The SLIS application programs are written in DOS COBOL and Assembly language. Also used are the executive facilities and census subsystem of SHAS, the DOS Sort/Merge, and the DOS Utility programs. Current modification levels of Version 3 (or later) of DOS and Version 2 (or later) of SHAS (360A-UH-11X) are required.

Minimum Machine Configuration: For non-teleprocessing systems, the minimum DOS-COBOL system ... E processing unit (32K) ... two Magnetic Tape Units and Control ... three 2311 Disk Storage Drives Model 1 are required for running the sample problem. Background application programs require 22K (K=1024 bytes) of the appropriate model.

For teleprocessing systems, the minimum DOS-QTAM multiprogramming system with Interval Timer (#4760) including requirements for non-teleprocessing system.

Typical System Configurations: Teleprocessing System -- 2040G Processing Unit (I28K), Decimal Arithmetic (#3237), Floating Point Arithmetic (#4427), Selector Channel - first (#6980), Selector Channel - second (#6981), Storage Protection (#7520) ... 1052 Printer-Keyboard with appropriate attachments ... 2821 Control Unit Model 1 with 1,100 lines per minute Printer Adapter (#3615) ... 1403 Printer Model N1 ... 1416 Interchangeable Train Cartridge ... 2540 Card Read Punch Model 1 ... 2314 Direct Access Storage Control Model A1 ... 2313 Disk Storage Unit Model A1 ... 2318 Disk Storage Unit Model A1 ... 2803 Magnetic Tape Control Model 1 ... two 2401 Magnetic Tape Units Model 1 ... 2702 Transmission Control Model 1, Terminal Control - Type 1 (#4615) and IBM Line Adapters as required. System control terminal at the central computer site includes 1051 Control Unit Model 1, First Printer Attachment (#4408) ... 1052 Printer-Keyboard Model 2.

Terminal Configuration at each hospital uses 1050 series equipment. Recommended are 1051 Control Unit Model 2, First Printer Attachment (#4408), First Reader Attachment (#4411), IBM Line Adapter (#469X), Line Correction (#4795), Line Correction Release (#4796) ... 1052 Printer-Keyboard Model 2 ... 1056 Card Reader Model 1 ... 29 Card Punch Model A22* ... 59 Card Verifier Model 2.

* Self-Checking Number (7061) may be additionally specified for card punch as desired by the user.

Non-Teleprocessing Systems -- A 2030 Processing Unit Model E (32K) with Decimal Arithmetic (#3237), Floating Point Arithmetic (#4427), Interval Timer (#4760), Selector Channel - first (#6960), Integrated Attachment for 1051 (#7915) ... 1052 Printer-Keyboard with appropriate attachments ... 2821 Control Unit Model 1 ... 1403 Printer Model 2 ... 2540 Card Read Punch Model 1 ... four 2311 Disk Storage Drives ... 2841 Storage Control Model 1 ... 2803 Magnetic Tape Control Model 1 ... two 2401 Magnetic Tape Units Model 1.

A 2025 Processing Unit Model E (32K) with Floating Point Arithmetic (#4427), Interval Timer (#4760), Selector Channel (#6960), Integrated Attachment for 1403 (#4590), Integrated Attachment for 2540 (#4595), Integrated Attachment for 2311 (#4598) ... 1403 Printer Model 2 ... 2540 Card Read Punch Model 1 ... three 2311 Disk Storage drives Model 1 ... one 2415 Magnetic Tape Unit and Control Model 1.

Basic Program Product Offering:

Package Description:

Unlicensed Documentation: One copy each of the Laboratory Manual, Program Description Manual, and Operations Manual.

Licensed Machine Readable Material: One copy of Machine Readable Material containing SLIS Source Modules and Sample Problem.

To order the Basic Package select one of the following specify numbers:

	Specify Number	Track/Density	Description	Quantity
	9027	9/800	DTR	
	9030	9/1600	DTR	
Order from IBM	9126	7DC/800	2400' MT	1 reel
Customer Supplied	9026	7DC/800	2400' MT	1 reel

Charges:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	H12	H12	B	\$250

Optional Support Package:

Package Description:

Licensed Documentation: One copy of Systems Manual

Charges and form numbers (features numbers) for copies of Licensed and Unlicensed Documentation will be announced when the program is available.

Related Program Product Documentation (order from Mechanicsburg): Application Description Manual (H20-0709) Use Key G

For further information contact your Medical Industry Marketing Representative, GEM Region.

Publication Support: The availability of the publications will be announced in a future Publications Release Letter. Initial DAPS quantities will be shipped at that time and additional copies will be made available at the IBM Distribution Center, Mechanicsburg, Penna.

Note to World Trade Readers

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- [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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

**TWO NEW PROGRAM PRODUCTS
ASSIST CONSUMER GOODS PROCESSOR**

- **Consumer Goods System (COGS) - Allocation (5736-D31)** ... This program product assists the consumer goods processor in distributing finished goods, maintaining appropriate inventories at distribution centers (warehouses), and determining production requirements.

The program employs mathematical and statistical methods to determine when and how much of a finished product is to be made and shipped to stocking points to satisfy service and inventory objectives, while meeting shipping incentives and restrictions.

Simulation of the ordering process permits a preview of the effects of management policy alternatives.

The program is written in DOS/360 PL/1 and operates on 65K Models 30 and larger under the Control of DOS/360.

Highlights ...

- Better management control of inventory at distribution centers.
- Customer service consistent with objectives.
- Control of shipment size, minimization of the high cost partial car shipments.
- Evaluation of inventory and distribution alternatives before implementation.

The monthly charge is \$150.

- **Consumer Goods System (COGS) - Forecasting (5736-D32)** ... COGS - Forecasting contains a set of programs designed to give the consumer goods processor the ability to select a proper forecasting model for a provided set of data, and the facilities to update and monitor the adopted model according to changing conditions.

COGS - Forecasting uses a technique called adaptive forecasting to accomplish its purpose. It has a built-in simulation capability which enables the user to determine how accurate a given model can be expected to be in advance of its adoption. The program includes the facilities to perform the following functions: establish a model for a Stock Keeping Unit (SKU) ... file maintenance ... building system files ... file reporting.

Highlights ...

- Capability to simulate a model's performance
- The ability to adapt to a particular customer's working calendar.
- The ability to interface with existing customer files by making a few changes to a file declaration statement.

The programs that make up COGS - Forecasting are written in PL/1 and operate on 65K Models 30 and larger under the control of DOS/360.

The monthly charge is \$200.

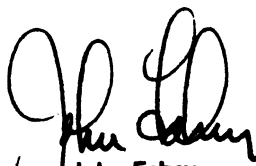
Planned Availability and Service Classification ... The planned availability for COGS - Allocation and COGS - Forecasting is July 1970. The programming service classification is B.

No RPOs will be accepted at this time for COGS - Allocation and Forecasting.

Details are on the following pages. The program product design objectives are available from Mechanicsburg. Use form GH20-0748 to order COGS - Allocation and GH20-0747 to order COGS - Forecasting.

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM Consumer Goods System (COGS) - (5736-D31) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.



John Fahey
WTC Director of DP Marketing

Consumer Goods System (COGS) - Allocation (5736-D31):

COGS - Allocation provides the consumer goods processor with

the ability to determine how much of various finished products to make and ship to stocking locations to satisfy service and inventory objectives while satisfying shipping incentives and restrictions. Simulation of the ordering process is included to allow a preview of the effects of management policy alternatives.

Description: The processor of consumer goods not only produces his wares, but must efficiently distribute these to the marketplace. The trend is to stock merchandise as close as possible to the major markets which results in complicated distribution processes (i.e., remote distribution centers to manage and multiple inventories to control).

This program addresses the distribution and inventory control problems. It also allows the user to tailor an order and allocation system to his needs. The following modules are included:

Service Point Order Review: The decision when to order a shipment of products for a distribution center or when to order production for replenishment of the distribution network is made. Considerations are present stock status, forecasted future requirements, management service objectives, lead times, and other related factors.

Service Point Printout: Produces an on-line listing substantiating the decisions made in order review. Output can be detailed or an exception (i.e., all items or only those items designated for order). Items failing special service tests, as well as programmed diagnostic messages, are always printed.

Production/Order Quantity Calculation: Employs a technique called variable interval allocation which determines how much of a finished product to ship to each distribution center to satisfy management inventory objectives and meet shipping constraints. Management has three basic allocation policies to choose from --

1. Item service specified - minimize item inventory.
2. Item group service specified - minimize item group inventory.
3. Item group inventory budget specified - maximize item group service.

COGS - Allocation supports both push and pull type distribution systems. In the pull environment, the program determines the proper mix of products ordered for a distribution center to balance inventory according to inventory and service objectives while satisfying shipment size constraints. In the push environment, the program decides how best to distribute batches or lots of manufactured products throughout the distribution network to achieve balance among the centers, again meeting shipment size constraints.

Allocation Print: Prints in detail the results of the production/order quantity calculation mode. Recommended item and item group quantities are shown as are specified minimum and maximum order sizes. Parameters established by users are included in print-out to assist evaluation.

Simulation: Provides the capability to view the ordering process for up to 52-time periods in the future. The output is in the form of a plot by item. This useful feature allows the consumer goods processor to evaluate alternative inventory and service policies before selecting the ones best for his business.

Card to File Processor: Provided to expedite preparation of data for running the sample problem included with program material. It can be used in present form for normal COGS - Allocation data preparation. However, the user will most likely want to prepare his own.

Highlights:

- Better management control of inventory at distribution centers.
- Customer service consistent with objectives.
- Efficient allocation of finished goods to the distribution complex.
- Control of shipment size, minimization of the high cost partial car shipments.
- Reduction of damage costs through planned shipments.
- Feedback to permit production to plan efficient run sizes, minimize emergency orders.
- Evaluation of inventory and distribution alternatives before implementation.

Customer Responsibilities: The program requires specific information about the products and stocking locations it will be servicing. Knowledge of the areas of the company influencing its decisions (i.e., distribution, production, marketing and finance) is also needed.

Consequently, the person responsible for implementing and controlling this program should be familiar with the policies and objectives of the company, as well as the individual functions mentioned and aware of existing interrelationships.

Data Requirements:

COGS - Allocation assumes customer has an inventory record keeping system carrying current inventory information (e.g., on-hand, on-order, back-order, price, lead-time, etc.) by item by stocking locations. Item and item group production/order/shipping minimums and maximums are also required.

The program further requires that a customer has a forecasting method or system capable of supplying item/location forecasted usage with projections of future needs plus a measure of forecast error (MAD).

The customer must supply his own program to collect the necessary information from the inventory and forecast files and assemble data into the format specified by COGS - Allocation.

Processing Requirements: Control parameters necessary to tailor the program to the customer's needs (e.g., service objectives, review time intervals, allocation policy choice, simulation options, etc.) must be supplied and properly formatted.

Output Considerations: As described earlier, the program prints out an allocation listing showing quantities to order. This same information is supplied on magnetic tape (except when operating in simulation mode) for input to the customer's order/production/shipping document writing program.

Use: The COGS - Allocation program becomes part of a company's distribution control system consisting of inventory record keeping (stock status), forecasting, ordering, and updating (file maintenance).

This program controls the ordering process, deciding when and how much to order for the distribution network to satisfy customer service, inventory investment, and order size objectives. It also provides management with the means, through simulation, to test the effectiveness of these objectives.

Being only part of a system, it relies upon the user to provide the necessary linkages to and from other parts of the system.

Programming Systems: COGS - Allocation operates under the control of Disk Operating System/360. Source code is written in PL/I. DOS features used are:

Supervisor - 2311 (6K)	360N-SV-474
System Control and Basic IOCS	360N-CL-453
Direct Access Method	360N-IO-454
Consecutive Processing Macros (Disk)	360N-IO-455
Consecutive Processing Macros (Tape)	360N-IO-456
Group 1 Utilities (Unit Record & Disk)	360N-UT-461
Group 2 Utilities (Magnetic Tape)	360N-UT-462
Disk Sort/Merge	360N-SM-450
Basic PL/I	360N-PL-464

When using a 65K machine, the supervisor may not exceed 8K. A 10K supervisor may be used on larger machines.

Minimum System/360 Configuration: System/360 Model 30F (65K) with Decimal Arithmetic (#3237) ... Floating Point Arithmetic (#4427) ... 1051 Attachment (#7915) ... 1051 Control Unit Model N1 ... CPU Attachment (#3130) ... 1442 Card Read Punch Model N1 ... 1052 Printer-Keyboard Model 8 ... 1443 Printer Model N1 (with Selective character set #6402 with 63 character set typebar #9089) ... 24 Additional Print Positions (5558)†† ... 2311 Disk Units (3 required - including system residence)† ... 2415 Tape Unit Model 1 (2 required)

Basic Program Product Offering:

Unlicensed Documentation: One copy each of Program Description Manual* and Operations Manual.*

Licensed Machine Readable Material: One copy of machine readable material containing COGS - Allocation Source Program, Sample Problem, and Flowchart Printout.

	Specify Number	Track/Density/Pack	Description
Order from IBM	9025	7/800 DC	DTR
	9027	9/800	DTR
	9030	9/1600	DTR

Charge:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	D31	D31	B	\$150

Related Documentation: Application Description Manual (GH20-0721)

*Prices (for additional copies) and form numbers of manuals will be available when program is available

† Two disk units not occupied by the Disk Operating System (DOS) are required for data, programs and working storage for COGS Allocation.

†† Any control unit and printer (132 positional) compatible with DOS/360 may be substituted for these units.

Consumer Goods System (COGS) - Forecasting (5736-D32): This program is designed to give the consumer goods processor the ability to select a proper forecasting model for a provided set of data and the facility to monitor the model's forecasting reliability.

Description: The program when provided with the proper input data is able to produce short term (one year or less) forecasts. The system uses a technique called adaptive forecasting. A simulator phase of the system enables the user to evaluate the reliability of the forecast model. The system also includes the facilities to perform the following functions: establish a forecast model for an SKU (Stock Keeping Unit) ... establish a measure of reliability of the forecast of demand for an SKU ... build and maintain necessary system files -- reporting.

Highlights

- The ability to fit a forecasting model to historical data for the purpose of projecting future demand.
- The ability, through simulation, to evaluate the model fitted to assist in the choice of the best model.
- The ability to update the forecast model being used with current demand in such a way to balance stability and responsiveness in the model.
- The ability to monitor the adopted model's performance.
- The means of screening all information presented for its validity and reasonableness.
- The flexibility to adopt the working day calendar to which the data corresponds.
- The ability to interface with some existing customer files with only a minor modification.

Use: The user must provide in prescribed format input data which describes the product and its environment to the system. This data when given to the application program will generate all the files required to operate the system with the exception of a sales master file. The sales master file is user created and maintained.

Customer Responsibilities: The program requires a minimum of two years sales history. It is the customer's responsibility to update and maintain a sales master file.

The final decision as to which forecast model is to be used is left to the user. The program furnishes the user with data upon which to base his selection.

Programming Systems: The COGS - Forecasting is written in PL/I, and it operates under the control of the Disk Operating System/360. The minimum system must include:

Supervisor - 2311 (6K)	360N-SV-474
System Control and Basic IOCS	360N-CL-453
Direct Access Method	360N-IO-454
Consecutive Disk IOCS	360N-IO-455
Consecutive Tape IOCS	360N-IO-456
Group 1 Utilities (Unit Record & Disk)	360N-UT-461
Group 2 Utilities (Magnetic Tape)	360N-UT-462
Disk Sort/Merge	360N-SM-450
Basic PL/I	360N-PL-464

Minimum System/360 Configuration: System/360 Model 30F (65K) with Decimal Arithmetic (*3237) ... Floating Point Arithmetic (*4427) ... 1051 Attachment (*7915) ... 1051 Control Unit Model N1 ... CPU Attachment (*3130) ... 1442 Card Read Punch Model N1 ... 1052 Printer-KeyBoard Model 8 ... 1443 Printer Model N1 (with Selective Character set #6402 and 63 character set typebar (*9089)** ... 24 Additional Print Positions (*5558)** ... 2311 Disk Units (2 required - including system residence)** ... 2415 Tape Unit Model 1 (2 required).

The core required to compile, link-edit, and execute the application program under the control of DOS is 63,000 bytes.

* One disk unit not occupied by the Disk Operating System (DOS) is required for data, programs and working storage for COGS Forecasting.

** Any control unit and printer (132 positions) compatible with DOS/360 may be substituted for these units.

Basic Program Product Offering:

Unlicensed Documentation: One copy each of Program Description Manual† and Operations Manual†.

Licensed Machine Readable Material: One copy of Machine Readable Material containing COGS - Forecasting Source Program, Sample Problem, and Flowchart Printout.

	Specify Number	Track/Density/Pack	Description
Order from IBM	9025	7DC/800	DTR
	9027	9/800	DTR
	9030	9/1600	DTR

Charge:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	D32	D32	B	\$200

Related Documentation: Application Description Manual (GH20-0722).

† Prices (for additional copies) and form numbers of the manuals will be available when program is available.

Publication Support: The availability of the publications will be announced in a future Publications Release Letter. Initial DAPS quantities will be shipped at that time and additional copies will be made available at the IBM Distribution Center, Mechanicsburg, Penna.

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 references 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.
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

**DATA/360-DOS, IBM's NEW KEY-TO-DISK PROGRAM PRODUCT, IS ANNOUNCED**

IBM announces a significant breakthrough in the collection and verification of source data - DATA/360-DOS (program product 5736-XS2). The planned availability is November 30, 1970. DATA/360-DOS is IBM's new key-to-disk program product. It performs most of the traditional keypunching facilities with new cost-reduction facilities made possible by on-line IBM 2260s and computer program logic. DATA/360-DOS is of great significance to customers who are using keypunches and key-to-tape devices.

DATA/360-DOS enhances the capability of the Disk Operating/360 by providing basic support for local 2260 Display Stations.

DATA/360-DOS operates in DOS Foreground 1. It supports 1 to 24 IBM 2260s and uses an IBM 2311 or 2314 Disk File. Each 2260 provides most IBM 29 and 59 facilities plus additional data entry facilities listed below.

DATA/360-DOS means that your customer can reduce data entry cost, improve management control of data entry activities, and increase operator productivity.

Highlights ...

- . Designed for quick implementation
- . Simulates most IBM 29 card punch and 59 verify functions plus additional features
- . Improves management control of data entry
- . Generalized editing allows source correction
- . Requires no change to existing entry documents
- . Improves keystroke rate
- . Each IBM 2260 Display Station can optionally verify or enter data
- . Allows record lengths up to 117 characters
- . Allows format control on up to 16 fields
- . Provides an ordered 64-character set (see section entitled "On Ordered 64-Character Set" on reverse side.
- . Provides support for a variable number of terminals [1 to 24 IBM 2260 Display Stations Model 2 (240 characters) ... 1 to 16 IBM 2260 Model 2 Display Stations (480 characters) ... or 1 to 8 2260 Model 1 Display Stations (960 characters)]. Supports 2848 Display Control Unit Models 3, 21, and 22

- . Supports IBM 2311 or 2314 disk files
- . Provides operator and production statistics

The monthly charge is \$50. The Program Service Classification is B.

No RPQs will be accepted at this time.

Details are on the reverse side. The program product design objectives which may be reproduced and given to customers are on the inside page.

Note: Use the information on the following pages and the DATA/360-DOS Preliminary Version of the Application Description Manual (GH20-0723) until the Application Description Manual for this announcement is available (availability and form number will be announced in a Publication Release Letter).

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM Data/360-DOS, New Key-To-Disk Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.

John Fahey
WTC Director of DP Marketing

DATA/360-DOS Program Product (5736-XS2)

The planned availability date for this program is November 30, 1970. The Program Service Classification is B.

The IBM System/360 on-line data entry system (DATA/360-DOS) enhances the capability of the Disk Operating System and facilitates the implementation of source code entry, data file creation, and data editing. The environment accommodates both DATA/360-DOS and conventional batch processing operations concurrently or separately.

The DATA/360-DOS system:

- . Accomplishes most of the functions provided by the IBM 29 Card Punches and 59 Card Verifiers.
- . Provides generalized editing to improve the quality of data initially entered. Only data passing the edit specifications is accepted and placed on disk.
- . Provides a means for upgrading from existing procedures to DATA/360-DOS with no need to alter existing entry documents.
- . Provides format control for up to 16 fields.
- . Provides operator and production statistics.
- . Has ordered 64-character set (see An Ordered 64-Character Set below).

An Ordered 64-Character Set:

26 alphabetic characters: ABCDEFGHIJKLMNOPQRSTUVWXYZ

10 numerical characters: 0123456789

25 special symbols (includes space and new line symbols): &/:.\$#@()-'+;=κ)>*/~

3 control symbols: cursor, check and start manual input

DATA/360-DOS consists of two major divisions -- the DATA/360-DOS on-line program and the DATA/360-DOS file utility programs.

The on-line program provides a method of entering data from a variable number of local IBM 2260 Display Stations (see Minimum Machine Configuration) to a direct access storage device and verifying this data to produce input to a user's program, bypassing all unit record operations.

Utility programs include:

- . A File Load program to create and define new files.
- . A File Extract program to extract data from the master file, place the data on a sequential disk or tape output file, and generate a report of the current status of batches in the master file.
- . A File Transfer program to copy active data into a newly loaded master file from a file previously maintained by the DATA/360-DOS system.
- . A File Analysis program to give the user extensive information about the DATA/360-DOS master file.

Programming Systems: DATA/360-DOS operates under the Disk Operating System/360 and is written in Assembler Language. Indexed Sequential Access Method, Basic Teleprocessing Access Method, and Sequential Access-Work Files are the data management and access methods used.

Minimum Machine Configuration: System/360 Model 30 (65K) with Interval Timer (4760) and Decimal Arithmetic (3237) ... Disk Storage Unit (2314 or 2311) ... 2848 Model 3, 21, or 22 Control Unit ... Non-Destructive Cursor (5340) ... 1 to 24 2260 Model 2 Display Stations (240 characters), 1 to 16 2260 Model 2 Display Stations (480 characters), or 1 to 8 2260 Display Stations (960 characters) ... 1 to 12 Cursor Adapters (5341) ... 1 to 12 Display Adapters (3368) ... 1 to 24 Alphameric-Numeric Inset (4765) for 2260 Model 2 terminals only.

Estimated core partition size for DATA/360-DOS is 26K resident plus 600 bytes/terminal.

IBM does not warrant that these design objectives or planned availability date will be met.

DATA/360-DOS (5736-XS2): DATA/360-DOS, IBM's key-to-disk program product, is a significant breakthrough in the collection and verification of source data. It performs most of the traditional IBM 29 Card Punch and 59 Card Verifier functions with new cost-reduction facilities made possible by on-line IBM 2260s and computer program logic. DATA/360-DOS is of great significance to customers who are using keypunches and key-to-tape devices.

Description: DATA/360-DOS is a data entry program. It provides a method of entering source data by local IBM 2260 terminals to a disk file and verifying this data to produce input to a user's program, bypassing all unit record operations. It supports a variable number of 2260 terminals (see Minimum Machine Configuration) and the IBM 2311 or 2314 disk files.

Highlights:

- Designed for quick implementation
- Simulates most of the IBM 29 Card Punch and IBM 59 Card Verifier functions plus additional features
- Improves management control of data entry
- Generalized editing allows source correction
- Requires no change to existing entry documents
- Improves keystroke rate
- Each IBM 2260 Display Station can optionally verify or enter data
- Allows record lengths up to 117 characters
- Allows format control on up to 16 fields
- Provides operator and production statistics
- Provides an ordered 64-character set (see An Ordered 64-character Set, no multi-punching)

Use: The user of DATA/360-DOS has the capability of entering either source code or data for most systems that will run in a DOS environment. The program is designed for users with workloads of varying sizes and complexities.

Branch Office Responsibilities: In planning for the successful implementation of DATA/360-DOS, a prerequisite is that the branch office understand the advantages which can be realized by efficient specifications of formats and disk file organization.

The marketing representative should be certain that the hardware configuration selected for the DATA/360-DOS environment will meet the requirements of the customer applications.

Customer Responsibilities: A customer installing DATA/360-DOS must see to it that appropriate DOS/360 and System/360 training (including terminal and direct access storage education) be given to the system analysts and terminal operators ... define the disk file allocation for DATA/360-DOS programming systems.

Programming Systems: DATA/360-DOS operates under the Disk Operating System/360 and is written in Assembler Language. Indexed Sequential Access Method, Basic Telecommunication Access Method, and Sequential Access-Work Files are the data management and access methods used.

Minimum Machine Configuration: System/360 Model 30 (65K) with Interval Timer (#4760 and Decimal Arithmetic (#3237) ... Disk Storage Unit (2314 or 2311) ... 2848 Model 3, 21, or 22 Control Unit ... Non-Destructive Cursor (#5340) ... 1 to 24 2260 Model 2 Display Stations (240 characters), 1 to 16 2260 Model 2 Display Stations (480 characters), or 1 to 8 2260 Model 1 Display Stations (960 characters) ... 1 to 12 Cursor Adapters (#5341) ... 1 to 12 Display Adapters (#3368) ... 1 to 24 Alphameric-Numeric Inset (#4765) for 2260 Model 2 terminals only ... 1 Expansion Unit (#3868) - Model 21 (with over 12 2260 Model 2 terminals - 240 characters).

Estimated core partition size for DATA/360-DOS is 26K resident plus 600 bytes/terminal.

An Ordered 64-character Set:

26 alphabetical characters --
ABCDEFGHIJKLMNQRSTUWXYZ

10 numerical characters --
0123456789

25 special symbols (includes space and new line symbol) --
& - / : . \$, * % () ' + ; = ? _ < > / - > @

3 control symbols -- cursor, check, and start manual input.

Basic Program Product Offering:

Licensed Documentation: One copy of the DATA/360-DOS Systems Manual (Feature #8018).

Unlicensed Documentation: One copy of the DATA/360-DOS Console Operator's Guide (SH20-0727) ... two copies of the DATA/360-DOS Terminal Operator's Guide (SH20-0729).

Licensed Machine Readable Material: One copy of machine readable materials containing the DATA/360-DOS Source Module Library, sample problem, and job control cards for utility programs.

To order select one of the following specify numbers:

Q.

Specify Number	Track/Density	Description	Quantity
9025	7DC/800	DTR	1 reel
9027	9/800	DTR	1 reel
9030	9/1600	DTR	1 reel

Charge:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	XS2	XS2	B	\$50

Prices and form numbers for copies of Licensed and Unlicensed Documentation will be announced when the program is available.

Related Documentation: DATA/360-DOS Application Description Manual.

Reference Material: DOS/360 System Control and System Service Programs (C24-5036-4) ... DOS/360 Basic Telecommunications Access Method (C30-5001-6) ... DOS/360 Concepts and Facilities (C24-5030-6) ... DOS/360 Utility Programs Specifications (C24-3465-5) ... System/360 Component Description (A27-2700-4) ... DOS/360 Supervisor and Input/Output Macros (C24-5037-7).

Publication Support: The availability of the publications will be announced in a future Publications Release Letter. Initial DAPS quantities will be shipped at that time and additional copies will be made available at the IBM Distribution Center, Mechanicsburg, Penna.

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 references 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.
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



IBM World Trade Data Processing

PROGRAM PRODUCT ANNOUNCEMENT

**FINANCIAL TERMINAL SYSTEM PROGRAM
PRODUCT (5736-F12) TO BE AVAILABLE
DECEMBER 1970**

Program Product 5736-F12 is a fast-response, multiprogramming environment for Finance Industry users. It coordinates the activities of DOS/360 BTAM with the DOS Multitasking Supervisor, controlling a terminal network while servicing several concurrently operating user-provided application programs.

Financial Terminal System is specifically designed for the Finance Industry. It provides support for the 1050, 2740 Model 1, 1060, 2260 (local and remote) Display Station, 2980 Models 1, 2, and 4, and 7770 Audio Response Unit.

Financial Terminal System operates in a single partition under control of the Disk Operating System/360 Multitasking Supervisor.

Availability is planned for December 15, 1970. The Programming Service Classification is B. The monthly charge is \$400.

Highlights ... Financial Terminal System uses DOS Multitasking and BTAM facilities to perform multi-threading of messages through a DOS partition. Specific functions performed are:

- . Polling and addressing of terminals through BTAM.
- . Assembly and translation of input messages which are then passed to an application program.
- . Translation and transmission of a message assembled by an application program for output by Financial Terminal System to a terminal.
- . Message assembly of multiple-burst messages from a 1060.
- . Core management to provide application program with needed work and I/O areas.
- . Systems Log for use by Financial Terminal System and the application programmer.


- . Post processor program to format and print the Log.
- . Operator communication messages and procedures for network control and status.
- . User programs are scheduled concurrently and may request dynamic resources (such as temporary core storage) as needed.
- . Macros and terminal operator commands provide a complete 2260 paging (multi-screen transmission) capability.
- . Network simulator provides for extensive pre-installation application testing.
- . System errors are handled by Financial Terminal System providing protection for the integrity of the Financial Terminal System partition.

No RPOs will be accepted at this time.

Details are on the reverse side. The program product design objectives on the inside page may be detached or reproduced and given to customers.

Systems Engineering Services ... SE Services, identified with and related to the installation and use of the IBM Financial Terminal System (5736-F12) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.



John Fahey
WTC Director of DP Marketing

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Release Date: June 10, 1970
Distribution: Selected European Countries Only

P70-62F

Financial Terminal System Program Product (5736-F12)

The IBM Financial Terminal System represents a total system approach to users in the finance industry for the installation of a high-performance teleprocessing and multitasking system. Financial Terminal System, operating in conjunction with the DOS/360 Multitasking Supervisor, is designed to act as an interface between BTAM and up to eight user-written application programs concurrently processing in a DOS partition. The intent of Financial Terminal System design is to materially reduce the expense and effort of implementing the real-time on-line system while combining the communications capabilities of BTAM and the fast-response effect of the multitasking environment. Availability is planned for December 15, 1970. The Programming Service Classification is B.

The functions of the on-line system are:

- . Terminal Management which efficiently schedules I/O operations to the terminal network and provides some application-oriented functions.
- . Core Management which controls and allocates the dynamic core storage of the partition.
- . Subtask Management which schedules the multiprogramming of terminal transactions.
- . Program Management which provides the linkage control between file and core resident application programs for transaction processing.
- . System Error Management which provides checking functions for error prevention and reduces the impact of application errors on the partition.

In addition to the basic management functions above, Financial Terminal System provides the following services to facilitate the implementation and successful operation of Financial Terminal System:

- . Master terminal function allowing the system operator full on-line control of the system.
- . Complete 2260 paging facilities including macros and terminal operator paging commands.
- . Pre-installation testing aids simulating the communication network, but otherwise the same as the on-line environment.
- . Systems Performance Analysis providing for collections, reduction, and print of system statistics.
- . Post-processor providing for the off-line printing of data on the system log tape.
- . SYSGEN and system test aids allowing the user to tailor the system to his unique requirements.

Financial Terminal System provides the user with a teleprocessing and multitasking system with high performance and reduced complexity. The structured environment fosters efficient program design, and the total approach should lessen the time, manpower, and effort to implement applications using Financial Terminal System.

Programming Systems: Financial Terminal System is written in DOS/360 Assembler Language and operates under control of the Multitasking Supervisor (Release 21 or later) and BTAM. The only restrictions on the use of DOS facilities are application program usage of DOS subtask control macros. The following DOS options are required: Interval Timer, Operator Console, Program Check, and ABTERM exits ... Asynchronous Processing ... I/O support for BTAM and the user's required access methods.

Financial Terminal System requires a full DOS communications region. If Batch Job Foreground is not specified, Financial Terminal System must operate in the background partition. If BJJ is specified, Financial Terminal System can operate in either Foreground Partition, leaving the other partitions available to the user.

User-written application programs communicate with DOS and Financial Terminal System for services and resources via a combination of Assembler Language instructions and macros.

Minimum System Configuration: The minimum configuration consists of a System/360 with at least 64K core, a 2311 or 2314 DASD, a 2400 series tape (9 or 7 track with data conversion), Decimal Arithmetic, Storage Protect, and Interval Timer.

Terminal Support: 1050, 1060, 2260 local or remote, 2740, 2980 and 7770.

As stated in the License Agreement for IBM Program Products, IBM does not represent or warrant that these design objectives or planned availability date will be met.

Financial Terminal System: The Financial Terminal System is a highly responsive transaction oriented, data communications interface between Disk Operating System/360 and user-written application programs. In addition to basic services and resources required for any on-line system, Financial Terminal System also provides facilities necessary for an environment conducive to high-response situations.

Financial Terminal System is designed for the Finance Industry. Therefore, the terminals supported are those normally used for Finance Industry applications.

Highlights: This program performs its functions as a data-communications interface through the following facilities:

- Subtask Management - provides multitasking facilities and resources necessary for concurrent transaction processing.
- Terminal Management - coordinates I/O operations of the user's network through efficient use of BTAM macros. Other functions satisfied by this program include translation to and from EBCDIC and appropriate external line code, assignment of "symbolic" terminal-identification for ease in internal reference, and addition of and removal of "line control" characters from text to simplify internal manipulations.
- Storage Management - provides dynamic core storage acquisition, initialization, and disposition services.
- Program Management - provides multitasking control and linkage routines, as well as supporting both core and file resident application programs. This program includes support for up to ten entry points in a single program.

In addition to the basic management functions described above, Financial Terminal System provides the following services:

- System Error Handling - protects the integrity of the partition and reduces the impact to the system of programming errors. This program permits the user to specify application - specific "clean-up" programs to be activated in the event of error.
- Master Terminal Function - allows the console operator to alter the operating characteristics of the on-line system, to invoke special temporary procedures, etc.
- Complete 2260 PAGING Facility - including macros and terminal operator commands for forward and backward paging.
- Pre-installation Testing Aids - simulates the eventual on-line environment, while at the same time incorporating additional error-checking, to allow the user to test application programs without communications equipment.
- Systems Performance Analysis - allows the user to collect performance statistics for later reduction and review.
- Terminal-Status Inquiry - allows the user to define several "states-of operation" for each terminal (for example, security level), to retain and examine the status when necessary.
- Initialization/Shutdown Capabilities - allows the user to initiate an orderly initialization and shutdown of the system, including provision for application-dependent "exits."

Use: Financial Terminal System operates within the framework of the DOS/360 Multitasking Supervisor and is characterized by remotely located terminals connected to the computer, which provide the user with ready access to the application-oriented data files. The program is designed for ease of installation, with special emphasis on pre-installation testing.

The program is made up of a set of program modules which are common to all (e.g., Storage Management) and a set of DOS/360 Assembler Language Macros. These serve two purposes -- (1) the initial phase of Financial Terminal System installation includes specifications and other descriptions resulting in a "tailored" environment; this is accomplished through the use of system generation macros, and (2) the on-line requests for Financial Terminal System resources and services by application programs are communicated to the system by linkage to Financial Terminal System routines; this linkage is in turn accomplished by specifying appropriate macros as part of application-program coding.

Special Sales Information: The program is designed for Finance Industry users having varying requirements. Primary users will be small to medium-large data-communications based systems.

The marketing representative should be aware that installation of an on-line system is always a complex undertaking. It requires complete understanding of both the applications and programming systems used. The customer and associated IBM representatives must be well grounded in the concepts of multiprogramming.

The key to successful installation of Financial Terminal System is a thorough and effective plan for implementation. A reasonably straight-forward application should be implemented at first, with extreme care given to application program design, file organization, and retrieval techniques. These aspects of the installation dramatically influence the performance of the system.

Customer Responsibilities: The Financial Terminal System user must have installed and become relatively proficient in DOS/360 ... meet Minimum Machine Configuration (described below) ... plan for installation and operation of his terminals ... train system analysts, programmers, and operators ... design and structure application programs and required data files ... design terminal formats ... provide terminal-oriented application training programs using the Financial Terminal System macros ... develop data-security and back-up procedures ... develop the tailoring of an efficient operating environment.

Programming Systems: The Financial Terminal System is written in DOS/360 Assembler Language and operates under control of the DOS/360 Multitasking Supervisor (Release 21 or later) and BTAM. The following DOS Supervisor options are required: Interval Timer, Operator Console, Program Check, and ABTERM exits ... Asynchronous Processing ... Input/Output support for BTAM and other applicable access methods (specifically, Direct Access Method is used for all "private" DASD files).

Financial Terminal System requires a full DOS/360 communications region. Consequently, if Batch Job Foreground is not identified as the supervisor option Financial Terminal System must operate in the Background Partition. If BJJF is specified, Financial Terminal System can operate in either Foreground Partition, leaving the other partitions free.

User-written application programs communicate with Financial Terminal System via a combination of Assembler Language instructions and Financial Terminal System-supplied macros.

Minimum Machine Configuration: In addition to the configuration necessary to operate DOS/360 and BTAM and in addition to requirements necessary for non-Financial Terminal System application programs, Financial Terminal System requires decimal arithmetic, storage protect, interval timer, and sufficient DASD (2311 or 2314) space for program storage and work areas. The minimum system includes a 2030 (or larger) Processing Unit Model F and sufficient and appropriate input/output equipment to satisfy DOS/360 requirements. Additionally, one 2400 Series Tape Unit (9- or 7-track with Data Conversion Feature) must be available, both for on-line operation and for distribution and maintenance.

The minimum system may have terminals (features which are not mentioned are not supported) of a single type or some combinations of: 1050 Data Communications System on non-switched lines (1051 Control Unit Model 1 or 2 ... 1052 Printer Keyboard Model 1 or 2) ... 1060 Data Communications System on non-switched lines (1061 Control Unit Model 1 or 2 ... 1062 Teller Terminal Model 1 or 2 with Model 2 Off-line feature #5400) ... 2260 Display Station (local or remote) remote on non-switched lines (Line Addressing feature #4787 ... Cursor #5340 ... Non-destructive Adapter #5341) ... 2260 Display Terminal Models 1, 2, and 3 (Alphameric #4766 or Numeric Keyboard #4767) ... 2740 Data Communications Terminal Model 1 or 2 on non-switched lines (Station Control #7479 for Model 1 ... Record checking #6114 is required for Model 2) ... 2972 Model 8 Banking Terminal System (RPQ) (2972 Model 8 Control Unit with Buffer Expansion ... 2971 Model 3 Remote Control Unit with Remote Adapter and I/O Expansion ... 2980 Terminals Models 1, 2, and 4 with Keyboard and Element and Security Lock) ... 7770 Audio Response Unit ... 2701 Data Adapter Unit and 2702 and 2703 Transmission Control Units and appropriate devices (Autopoll on 2702/2703).

Basic Program Product Offering:

Uncensored Documentation: One copy each of Program Description Manual*, Operator's Guide*, and Programmer's Reference Manual*.

Licensed Machine Readable Material: One copy of Machine Readable Materials containing the Financial Terminal System Macro Library and the Relocatable Library necessary to install Financial Terminal System.

To order, select one of the following specify numbers:

	Specify Number	Track/Density	Description	Quantity
Customer Supplied	9026	7DC/800	2400'MT	1 reel
	9028	9/800	2400'MT	1 reel
	9029	9/1600	2400'MT	1 reel
Order from IBM	9126	7DC/800	2400'MT	1 reel
	9128	9/800	2400'MT	1 reel
	9129	9/1600	2400'MT	1 reel

Charge:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	F12	F12	B	\$400

Optional Support Package:

Licensed Documentation: One copy of Systems Manual including Flowcharts (Feature #8026)*.

Licensed Machine Readable Material: One copy of Machine Readable Materials containing the Financial Terminal System complete Source Model Library.

To order, select one of the following feature numbers:

	Feature Number	Track/Density	Description	Quantity
Customer Supplied	7008	7DC/800	2400'MT	1 reel
	7009	9/800	2400'MT	1 reel
	7010	9/1600	2400'MT	1 reel
Order from IBM	7013	7DC/800	2400'MT	1 reel
	7014	9/800	2400'MT	1 reel
	7015	9/1600	2400'MT	1 reel

Related Documentation: Financial Terminal System Application Description Manual*.

* Prices and form numbers for copies of Licensed, Uncensored, and Related Documentation will be announced when program is available.

Publication Support: The availability of the publications will be announced in a future Publications Release Letter. Initial DAPS quantities will be shipped at that time and additional copies will be made available at the IBM Distribution Center, Mechanicsburg, Penna.

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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



SYSTEM/360 REQUIREMENTS PLANNING INTERFACE, 5736-M13, ANNOUNCED

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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Support of System/360 Requirements Planning (360A-MF-05X) will be extended by Requirements Planning Interface, 5736-M13, a program product. It provides the capability of creating connection records which are used by System/360 Capacity Planning, 5736-M12, to link component orders with parent orders.

The estimated availability of 5736-M13 is July 1, 1970, concurrent with the availability of System/360 Capacity Planning program products.

Users planning to use System/360 Requirements Planning must order program 360A-MF-05X. Those users planning to use System/360 Capacity Planning 5736-M12 (Finite Loading) must order 5736-M13 in addition to program 360A-MF-05X.

For additional information regarding the connection record facility, refer to System/360 Capacity Planning Application Description Manual (H20-0627), and TNL N20-2016, which updates System/360 Requirements Planning Application Description Manual (H20-0476).

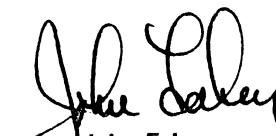
The Program Product Design Objectives sheet on the reverse side may be reproduced and given to customers.

No RPOs will be accepted at this time.

The sales manual write-up is on the inside page.

SES: SE Services, identified with and related to the installation and use of the IBM System/360 Requirements Planning Interface, 5736-M13 Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.


John Fahey
WTS Director of DP Marketing

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System/360 Requirements Planning Interface (Program Product 5736-M13)

System/360 Requirements Planning (360A-MF-05X) offers a mechanized approach to detailed requirements planning for a large segment of manufacturing industries. This system uses the Item Master and Product Structure files created by the System/360 Bill of Material Processor Program (360A-ME-06X). It performs time series planning to determine planned orders for finished product assemblies, sub-assemblies, parts and raw material based upon the input of forecasts and orders.

Program Product 5736-M13 provides for the additional function of creating connection records which may be used as input to System/360 Capacity Planning - Finite Loading Program Product 5736-M12.

The estimated availability is July 1, 1970, current with the availability of System/360 Capacity Planning (5736-M12). The Programming Service Classification is B.

Highlights: Creation of connection records for use by System/360 Capacity Planning (5736-M12).

Programming Systems: The programs are written in Assembler Language utilizing the macro language facility and operate under the IBM System/360 Disk Operating System. System/360 Requirements Planning (360A-MF-05X) is required as well as System/360 Bill of Material Processor (360A-ME-06X).

Minimum System Requirements (Program Product 5736-M13)

<u>Device or Feature</u>	<u>For S/360 Model 25</u>	<u>For S/360 Model 30</u>
System/360 Central Processing Unit, 48K bytes	2025 ED	2030 F
Decimal Arithmetic Special Feature	Standard	3237
Control Unit for Printer-Keyboard	-----	1051 N1
System/360 Card Reader (see Note 1)	2540	Any
Printer-Keyboard	1052 Model 7	1052 Model 8
System/360 Printer	1403 Model 2	Any (with at least 132 print positions)
Storage Control	-----	2841 Model 1
Disk Storage Drives (as required to contain DOS/360 and the user's data files) (minimum of 2)	2311 Model 1	2311 Model 1
or		
Direct Access Storage Facility (see Note 2)	-----	2314 Model 1

NOTES:

1. A System/360 card punch, while not used by the System/360 Requirements Planning programs, is required for system preparation.
2. In addition, a 2314-only system configuration also requires a 2400 series tape drive for system preparation.

IBM warrants that this program will conform to the Program Product Specifications to be published, but does not warrant that it will conform to these Program Product Design Objectives.

System/360 Requirements Planning Interface: System/360 Requirements Planning (360A-MF-05X) offers a mechanized approach to detailed requirements

planning for a large segment of manufacturing industries. This system uses the Item Master and Product Structure files created by the S/360 Bill of Material Processor Program (360A-ME-06X). It performs time series planning to determine planned orders for finished product assemblies, subassemblies, parts and raw material based upon the input of forecasts and orders.

Highlight: Creation of connection records for use by System/360 Capacity Planning Program Product 5736-M12.

Special Sales Information: The philosophies and concepts incorporated in System/360 Requirements Planning Interface are applicable to a large segment of the manufacturing industry, particularly for those users whose product line is varied, fabricated items common to many assemblies or whose product is large and complex. Many of the aspects of this system are discussed in the Production Information and Control System (E20-0280).

Use: System/360 Requirements Planning is direct access file oriented utilizing data contained in the Item Master, Product Structure, and subordinate Item Master (optional) files. The records within these files are created and maintained by System/360 Bill of Material Processor Program (360A-ME-06X).

System/360 Requirements Planning Interface, Program Product 5736-M13, enhances the capability of System/360 Requirements Planning, 360A-MF-05X. The program product provides for the creation of connection records which are used by System/360 Capacity Planning Program Product 5736-M12 to link component orders with parent orders.

Customer Responsibilities: A thorough knowledge and understanding of this program before installation ... customize System/360 Requirements Planning to meet user requirements ... a thorough knowledge and understanding of the IBM System/360 Bill of Material Processor ... provide and maintain a shop calendar that resides on a direct access device ... define contents and format of the Item Master, Product Structure and Subordinate Item Master files ... maintain accurate, up-to-date data ... provide open orders to the system ... provide file organization and maintenance of the Item Master, Subordinate Item Master, and Product Structure files through the use of the IBM System/360 Bill of Material Processor Program (360A-ME-06X).

Programming Systems: The programs are written in Assembler Language utilizing the macro language facility and operate under the IBM System/360 Disk Operating System. In addition, the System/360 Bill of Material Processor (360A-ME-06X) and System/360 Requirements Planning (360A-MF-05X) are required.

Minimum System Requirements (Program Product 5736-M13)

Device or Feature	For S/360 Mdl 25	For S/360 Mdl 30
System/360 Central Processing Unit, 48K bytes	2025 ED	2030 F
Decimal Arithmetic Special Feature	standard	3237
Control Unit for Printer-Keyboard	---	1051 N1
System/360 Card Reader (see Note 1)	2540	Any
Printer-Keyboard	1052 Mdl 7	1052 Mdl 8
System/360 Printer	1403 Mdl 2	Any (with at least 132 print positions)
Storage Control	---	2841 Mdl 1
Disk Storage Drives (as required to contain DOS/360 and the user's data files (minimum of 2)	2311 Mdl 1	2311 Mdl 1
or		
Direct Access Storage Facility (see note 2)	---	2314 Mdl 1

NOTES:

1. A System/360 card punch, while not used by the System/360 Requirements Planning program, is required for system preparation.
2. In addition, a 2314-only system configuration also requires a 2400 series tape drive for system preparation.

Refer to the machines section of the sales manual for appropriate attachments required for connection of input/output units.

Basic Program Product Offering

Unlicensed Documentation: One copy of each of the following: Program Description Manual ... Operations Manual.

Licensed Machine Readable Material: One copy of Machine Readable Material consisting of source code available on a DTR or cards.

To order basic machine readable material, use the following specify number:

Specify Number	Track/Density	Description
9025	7/800 DC	DTR
9027	9/800 bpi	DTR
9030	9/1600	DTR
9015	-	Cards

Prices:

Type	Program Number	DPMO No.	Programming Service Classification	Monthly Charge
5736	M13	M13	B	\$25

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Special Features

Licensed Documentation: One copy of Systems Manual.

To order licensed documentation, use the feature number #7018, no charge.

Additional Documentation: Prices and form numbers (feature numbers) for copies of licensed and unlicensed documentation will be announced when program is available.

Additional Program Product Documentation: No charge.

Application Description Manual (H20-0471)

Reference Material: (No Charge) 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, H20-0471 ... System/360 Requirements Planning - Application Description Manual, H20-0487 ... System/360 Requirements Planning Program Description Manual, H20-0584 ... TNL N20-2016, which updates System/360 Requirements Planning Application Description Manual.

For further information, contact a Manufacturing Industry Marketing Representative.

Publication Support: Initial supplies of the unlicensed Basic Program Product form numbered publications will be distributed through DAPS. Order additional copies as well as copies of licensed publications from the IBM Distribution Center, Mechanicsburg, Pennsylvania when availability is announced in the Weekly Publications Release Letter.

**SYSTEM/360 CAPACITY PLANNING -
INFINITE LOADING, 5736-M11,
ANNOUNCED****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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Program Product 5736-M11 produces a manpower and machine load report that projects hours required by time period for each work center. It determines load hours without regard to available capacity - called infinite capacity loading. The program highlights potential production bottlenecks but makes no attempt to correct overload or underload conditions.

The estimated availability is July 1, 1970.

Other highlights are:

- Calculates setup, labor or machine hours for each planned and open order and loads these hours by time period.
- Highlights overloaded and underloaded work centers with easy to read graphical output reports.
- Allows the number and size of time periods to be varied.
- Allows work center capacities to be varied for each time period.
- Permits move and queue times to be furnished in several ways.
- Provides for operations to be overlapped for work centers which generally operate in this manner.

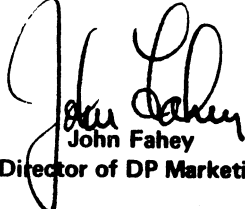
The Program Product Design Objectives on the reverse side may be reproduced and given to customers.

No RPQs will be accepted at this time.

The sales manual write-up is on the inside.

SES: SE Services, identified with and related to the installation and use of the IBM System/360 Capacity Planning - Infinite Loading, 5736-M11 Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.


John Fahey
WTC Director of DP Marketing

System/360 Capacity Planning - Infinite Loading (Program Product 5736-M11)

This group of integrated programs is for work center loading in manufacturing organizations.

Programs are provided for determining labor and machine requirements by work center.

The estimated availability is July 1, 1970. The Programming Service Classification is B.

Highlights

- . Infinite loading for planned and open orders
- . Size of time periods based on user specifications
- . Ability to modify work center capacities by period
- . Requirements accumulated for both setup and machine or labor hours.
- . Determination of number of overload and underloaded work centers.
- . Many options for a user to furnish move and queue times.

Description: This application program consists of source programs and supporting documentation for use in the installation of an effective work center loading function.

This program (5736-M11) consists of two major phases - file creation and update and infinite loading.

The *file creation and update* phase provides for two functions: (1) System Run File Creation and (2) Load File Creation. These are system work files required in all subsequent phases.

The *infinite loading* phase provides for an infinite load report by work center and period.

The functions of the program (5736-M11) are:

System Run File Creation - extracts work center capacity information from a work center master file and creates a system run file.

Load File Creation - determines labor or machine hours required for all open and planned orders in the Item Master or Subordinate Item Master File, based on information extracted from the standard routing file.

Infinite Loading - an accumulation of labor or machine hours required by time period and work center.

Programming Systems: System/360 Capacity Planning - Infinite Loading (5736-M11) uses the following IBM programming systems: (1) IBM System/360 Disk Operating System (DOS/360), (2) IBM System/360 Disk Operating System Basic PL/1, (3) Bill of Material Processor (360A-ME-06X), and (4) System/360 Requirements Planning (360A-MF-05X).

Minimum System Requirements

Device or Feature	For S/360 Model 26	For S/360 Model 30
System/360 Central Processing Unit, 32K bytes (see note 1)	2026 E	2030 E
Decimal Arithmetic Special Feature	standard	3237
Control Unit for 1062 Printer-Keyboard	-----	1061 N1
Card Reader (see note 2)	2640	Any
Printer-Keyboard	1062 Model 7	1062 Model 8
Printer	1403 Model 2	Any with at least 132 print positions
Storage Control	-----	2841 Model 1
Disk Storage Drives as required to contain DOS/360 and the user's data files (minimum of 2)	2311 Model 1	2311 Model 1
or		
Direct Access Storage Facility (see note 3)	-----	2314 Model 2

NOTES:

1. The File creation and update phase as well as the infinite loading phase require a 32K minimum system. Each phase itself requires approximately 18,000 bytes excluding core required for DOS/360.
2. A System/360 card punch, while not used by System/360 Capacity Planning, is required for system preparation.
3. A system with no other direct access storage device except 2314 also requires a 2400 series tape drive for system preparation.

IBM warrants that this program will conform to the Program Product Specifications to be published, but does not warrant that it will conform to these Program Product Design Objectives.

System/360 Capacity Planning - Infinite Loading (Program Product 5736-M11):

This group of integrated programs is for work center loading in manufacturing organizations.

Programs are provided for determining labor and machine requirements by work center.

Description: This application program consists of source programs and supporting documentation for use in the installation of an effective work center loading function.

This program 5736-M11 consists of two major phases - file creation and update and infinite loading.

The file creation and update phase provides for two functions: (1) System Run File Creation and (2) Load File Creation. These are system work files required in all subsequent phases.

The infinite loading phase provides for an infinite load report by work center and period.

The functions are:

System Run File Creation -- extracts work center capacity information from a work center master file and creates a system run file.

Load File Creation -- determines labor or machine hours required for all open and planned orders in the Item Master or Subordinate Item Master File, based on information extracted from the standard routing file.

Infinite Loading -- an accumulation of labor or machine hours required by time period and work center.

Highlights

- Infinite loading for planned and open orders
- Size of time periods based on user specifications
- Ability to modify work center capacities by period
- Requirements accumulated for both setup and machine or labor hours
- Determination of number of overloaded and underloaded work centers
- Many options for a user to furnish move and queue times

Special Sales Information: The programs require the use of files organized by the System/360 Bill of Material Process (360A-ME-06X). System/360 Requirements Planning (360A-MF-05X) is required for the creation of planned order information.

Many of the aspects of capacity planning are discussed in the IBM manual, Production Information and Control System (E20-0280).

Use: The System/360 Capacity Planning programs are direct access file oriented and work in conjunction with an item master file or subordinate item master file, a work center master file and a standard routing file. The records within these files are created and maintained by System/360 Bill of Material Processor.

This program (5736-M11) includes programs for performing infinite work center loading. Normally the programs associated with these phases are used for planning purposes and as a result are run rather infrequently. It is envisioned that System/360 Capacity Planning will be run as frequently as a material planning system, from which new order requirements are generated.

Customer Responsibilities

- Tailor the source programs to meet installation requirements.
- Create and maintain the item master or subordinate item master file, work center master file and standard routing file.
- Define content and format of the above files.
- An understanding of the production planning concepts embodied in System/360 Capacity Planning so that the user can make the proper selection and/or specification of parameters.
- Writing user routines to perform tasks not provided by the programs.
- Provide planned and open order information. System/360 Requirements Planning must be used for the creation of planned order information. System/360 Inventory Control may be used for projecting requirements for order point items.
- Provide and maintain shop calendar that resides on a direct access device.

Programming Systems: System/360 Capacity Planning - Infinite Loading (5736-M11) uses the following IBM programming systems: (1) IBM System/360 Disk Operating System (DOS/360), (2) IBM System/360 Disk Operating System Basic PL/A, (3) IBM System/360 Bill of Material Processor and (4) System/360 Requirements Planning (required for the creation of planned order information).

Minimum System Requirements The minimum configuration required for System/360 Capacity Planning is:

Device or Feature	For S/360 Model 25	For S/360 Model 30
System 360 Central Processing Unit, 32K Bytes (see note 1)	2025 E	2030 E
Decimal Arithmetic Special Feature	standard	3237
Control Unit for 1052 Printer-KeyBoard	---	1051 N1
Card Reader (see note 2)	2540	Any
Printer-KeyBoard	1052 Model 7	1052 Model 8

Device or Feature	For S/360 Model 25	For S/360 Model 30
Printer	1403 Model 2	Any with at least 132 print positions
Storage Control	---	2841 Model 1
Disk Storage Drives as required to contain DOS/360 and the user's data files (minimum of 2)	2311 Model 1	2311 Model 1
or		
Direct Access Storage Facility (see note 3)	---	2314 Model 2

NOTES:

1. The File creation and update phase and the infinite loading phase require a 32K minimum system. Each phase itself requires approximately 18K bytes excluding core required for DOS/360.
2. A System/360 card punch, while not used by System/360 Capacity Planning, is required for system preparation.
3. A system with no other direct access storage device except 2314 also requires a 2400 series tape drive for system preparation.

Basic Program Product Offering

Unlicensed Documentation: One copy of each of the following - Program Description Manual ... Operations Manual.

Licensed Machine Readable Material: One copy of Machine Readable Material consisting of source code plus a sample problem available on one magnetic tape or disk pack.

To order basic machine readable material, use the following specify number.

	Specify Number		Track/Density	Description
	2311 User	2314 User		
Customer Supplied	*9026	*9226	7/800	2400' MT
	*9028	*9228	9/800	2400' MT
	*9029	*9229	9/1600	2400' MT
Order from IBM	*9126	*9326	7/800	2400' MT
	*9128	*9328	9/800	2400' MT
	*9129	*9329	9/1600	2400' MT
Customer Supplied	*9052		1316	Disk Pack
Order from IBM	*9152		1316	Disk Pack

Prices:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	M11	M11	B	\$75.00

Special Features

Licensed Documentation: One copy each of the Systems Manual.

To order licensed documentation, use the feature #7016, No Charge.

Additional Documentation

Prices and form numbers (feature number) for copies of Licensed and Unlicensed Documentation will be announced when the program is available.

Related Program Product Documentation

No charge - Application Description Manual (H20-0627) Use Key G.

Reference Material: (Order from Mechanicsburg - No Charge) 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, H20-0471 ... System/360 Requirements Planning - Application Description Manual, H20-0487 ... System/360 Requirements Planning Program Description Manual, H20-0584.

For further information, contact a Manufacturing Industry Marketing Representative.

Publication Support: Initial supplies of the unlicensed Basic Program Product form numbered publications will be distributed through DAPS. Order additional copies as well as copies of licensed publications from the IBM Distribution Center, Mechanicsburg, Pennsylvania when availability is announced in the Weekly Publications Release Letter.

**SYSTEM/360 CAPACITY PLANNING -
FINITE LOADING, 5736-M12, ANNOUNCED****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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Program product 5736-M12 contains the same capability as program product 5736-M11 (Infinite Loading). In addition, it adjusts order start dates to resolve overload and underload conditions (i.e., scheduling to finite capacity). The program output consists of order start dates which are realistic from the standpoint of capacity and material availability. Material requirements are furnished by System/360 Capacity Planning Finite Loading through a technique called single level pegging.

The estimated availability is July 1, 1970.

The highlights are:

- Calculation of the earliest order start date based on raw material availability or availability of lower level orders.
- Calculation of order priorities to allow more important orders to be scheduled first.
- Loading based on one of several optional techniques.
- Rerouting of work to alternate or substitute work centers if overloads are encountered.
- Compression of transit times to meet original order schedule.
- Selection of scheduling options by the user that contribute to less work in process or more on-schedule deliveries.

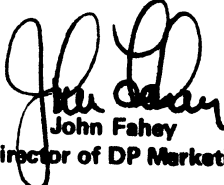
The Program Product Design Objectives on the reverse side may be reproduced and given to customers.

No RPOs will be accepted at this time.

The sales manual write-up is on the inside pages.

SES: SE Services, identified with and related to the installation and use of the IBM System/360 Capacity Planning - Finite Loading, 5736-M12 Program Product are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing. A signed license agreement must be obtained prior to customer use of this Program Product.


John Fahey
WTC Director of DP Marketing

System/360 Capacity Planning - Finite Loading (Program Product 5736-M12)

This group of integrated programs has been designed for work center loading in manufacturing organizations.

Programs are provided for (1) infinite loading, (2) connecting sub-assembly and component part order requirements, (3) load leveling based on finite capacity (revising planned or forecast order start dates consistent with current capacity) and (4) determination of earliest possible order start dates.

The estimated availability is July 1, 1970. The Programming Service Classification is B.

Highlights

- . Infinite loading
- . Finite capacity loading
- . Realistic start and completion dates for parts and sub-assemblies
- . Loading based on order priorities
- . Single level pegging of components and sub-assemblies
- . Reduction of transit times if possible
- . Realistic order release dates
- . Several load leveling options for different user environments
- . Programs are modular in design to permit the user to use only the options he desires

Description: This application program consists of source programs and supporting documentation for use in the installation of an effective work center loading function.

This program (5736-M12) consists of four major phases - file creation and update, infinite loading, connection (single level pegging) and finite loading (load leveling).

The *file creation and update* phase provides for two functions: (1) System Run File Creation and (2) Load File Creation. These are system work files required in all subsequent phases.

The *infinite loading* phase provides for an infinite load report by work center and period.

The *connection* (single level pegging) phase provides for: (1) Calculation of Earliest Order Start Dates and (2) Linking component orders with parent orders through the use of connection records.

The *finite loading* phase (load leveling) consists of programs which: (1) determine priority of orders and (2) determine networks of orders and (3) provide for load leveling.

The functions of the program product are:

System Run File Creation -- extracts work center capacity information from a work center master file and creates a system run file.

Load File Creation -- determines labor or machine hours required for all open and planned orders in the Item Master or Subordinate Item Master File, based on information extracted from the standard routing file.

Infinite Loading -- an accumulation of labor or machine hours required by time period and work center.

Calculation of Earliest Order Start Date -- determines earliest start date for orders consistent with availability of raw material and components.

Link Component and Parent Orders -- links component orders with parent orders based on availability of raw material and components.

Determination of Priority of Orders -- determines relative importance of orders.

Determination of Networks of Orders -- A function that links all orders for sub-assemblies and component parts to a finished product.

Load Leveling -- one of three techniques that determines order start dates consistent with capacity and availability of raw material or components.

The three optional techniques are:

- . **ESD Finite Loading** -- Attempts to schedule all orders as early as possible (to its ESD or earliest start date).
- . **LSD Finite Loading** -- Attempts to schedule all orders as late as possible (to its LSD or latest start date).
- . **Network Loading** -- Attempts to schedule all orders of a network as an entity to minimize total product lead time.

Programming Systems: System/360 Capacity Planning - Finite Loading uses the following IBM programming systems: (1) IBM System/360 Disk Operating System (DOS/360), (2) IBM System/360 Disk Operating System Basic PL/I, (3) IBM System/360 Disk Sort/Merge, associated with the IBM System/360 Disk Operating System (required in the connection phase and finite loading phase), (4) Bill of Material Processor (360A-ME-06X), (5) System/360 Requirements Planning Interface (5736-M13) (Required for the creation of the connection records used in the connection phase), and (6) System/360 Requirements Planning (360A-MF-05X).

Minimum System Requirements:

Device or Feature	For S/360 Model 25	For S/360 Model 30
System/360 Central Processing Unit, 48K Bytes (see Note 1)	2025 ED	2030 F
Decimal Arithmetic Special Feature	standard	3237
Control Unit for 1052 Printer-KeyBoard	-----	1051 N1
Card Reader (see Note 2)	2540	Any
Printer-KeyBoard	1052 Model 7	1052 Model 8
Printer	1403 Model 2	Any with at least 132 print positions
Storage Control	-----	2841 Model 1
Disk Storage Drives are required to contain DOS/360 and the user's data files (minimum of 2)	2311 Model 1	2311 Model 1
or	-----	2314 Model 2
Direct Access Storage Facility (see Note 3)	-----	2314 Model 2

NOTES:

1. The connection phase and the finite loading phase require a 48K minimum system with the exception of the network loading option which requires a 64K system.
2. A System/360 card punch, while not used by a System/360 Capacity Planning, is required for system preparation.
3. A System with no other direct access storage device except a 2314 also requires a 2400 series tape drive for system preparation.

IBM warrants that this program will conform to the Program Product Specifications to be published, but does not warrant that it will conform to these Program Product Design Objectives.

System/360 Capacity Planning - Finite Loading
(Program Product 5736-M12):

This group of integrated programs is for work center loading in manufacturing organizations.

Programs are provided for (1) infinite loading, (2) connecting sub-assembly and component part order requirements, (3) load leveling based on finite capacity (revising planned or forecast order start dates consistent with current capacity) and (4) determination of earliest possible order start dates.

Description: This application program consists of source programs and supporting documentation for the installation of an effective work center loading function.

The program (5736-M12) consists of four major phases -- file creation and update, infinite loading, connection (single level pegging) and finite loading (load leveling).

The file creation and update phase provides for two functions: (1) System Run File Creation and (2) Load File Creation. These are system work files required in all subsequent phases.

The infinite loading phase provides for an infinite load report by work center and time period.

The connection (single level pegging) phase provides for: (1) Calculation of Earliest Order Start Dates and (2) Linking component orders with parent orders through the use of connection records.

The finite loading phase (load leveling) consists of programs which: (1) determine priority of orders and (2) determine networks of orders and (3) provide for load leveling.

The functions are:

System Run File Creation -- extracts work center capacity information from a work center master file and creates a system run file.

Load File Creation -- determines labor or machine hours required for all open and planned orders in the Item Master or Subordinate Item Master File.

Infinite Loading -- an accumulation of labor or machine hours required by time period and work center.

Calculation of Earliest Order Start Date -- determines earliest start date for orders consistent with availability of raw material and components.

Link Component and Parent Orders -- links component orders with parent orders based on availability of raw material and components.

Determination of Priority of Orders -- determines relative importance of orders.

Determination of Networks of Orders -- links all orders for sub-assemblies and component parts to a finished product.

Load Leveling -- one of three techniques that determines order start dates consistent with capacity and availability of raw material or components. The three optional techniques are:

- . ESD Finite Loading -- attempts to schedule all orders as early as possible (to its ESD or earliest start date).
- . LSD Finite Loading -- attempts to schedule all orders as late as possible (to its LSD or latest start date).
- . Network Loading -- attempts to schedule all orders of a network as an entity to minimize total product lead time.

Highlights

- . Infinite loading
- . Finite capacity loading
- . Realistic start and completion dates for parts and sub-assemblies
- . Loading based on order priorities
- . Single level pegging of components and sub-assemblies
- . Reduction of transit times if possible
- . Realistic order release date
- . Several load leveling options for different user environments
- . Programs are modular in design to permit the user to use only the options he desires.

Special Sales Information: The programs require the use of files organized by the System/360 Bill of Material Process (360A-ME-06X). System/360 Requirements Planning Interface Program Product 5736-M13 is required for the creation of the connection records used in the options connection phase as well as creating planned order information.

Many of the aspects of capacity planning are discussed in the IBM manual, Production Information and Control System (E20-0280).

Use: The System/360 Capacity Planning programs are direct access file oriented and work in conjunction with an item master file or subordinate item master file, a work center master file and a standard routing file. The records within these files are created and maintained by System/360 Bill of Material Processor.

System/360 Capacity Planning includes infinite loading and finite loading phases. Normally the programs associated with these phases are used for planning purposes and as a result are run rather infrequently. It is envisioned that System/360 Capacity Planning will be run as frequently as a material planning system, from which new order requirements are generated.

Customer Responsibilities

- . Tailor the source programs to meet installation requirements.
- . Create and maintain the item master or subordinate item master file, work center master file and standard routing file.
- . Define content and format of the above files.
- . An understanding of the production planning concepts embodied in System/360 Capacity Planning so that the user can make the proper selection and/or specification of parameters.
- . Writing user routines to perform tasks not provided by the programs.
- . Provide planned and open order information. System/360 Requirements Planning must be used for the creation of planned order information. System/360 Inventory Control may be used for projecting requirements for order point items.
- . Provide connection records. System/360 Requirements Planning must be used for this purpose.
- . Provide and maintain shop calendar that resides on a direct access device.

Programming Systems: System/360 Capacity Planning uses the following IBM programming systems: (1) IBM System/360 Disk Operating System (DOS/360), (2) IBM System/360 Disk Operating System Basic PL/1, (3) IBM System/360 Disk Sort/Merge, associated with the IBM System/360 Disk Operating System (required in the connection phase and finite loading phase), (4) IBM System/360 Bill of Material Processor 360A-ME-06X, (5) System/360 Requirements Planning Interface (5736-M13) (required for the creation of the connection records used in the connection phase), and (6) System/360 Requirements Planning (360A-MF-05X).

Minimum System Requirements: The minimum configuration required for System/360 Capacity Planning is:

Device or Feature	For	For
	S/360 Mdl 25	S/360 Mdl 30
System/360 Central Processing Unit, 48K Bytes (see note 1)	2025 ED	2030 F
Decimal Arithmetic Special Feature	standard	3237
Control Unit for 1052 Printer-KeyBoard	---	1051 N1
Card Reader (see note 2)	2540	Any
Printer-KeyBoard	1052 Mdl 7	1052 Mdl 8
Printer	1403 Mdl 2	Any with at least 132 print positions
Storage Control	---	2841 Mdl 1
Disk Storage Drives as required to contain DOS/360 and the users data files (minimum of 2)	2311 Mdl 1	2311 Mdl 1
or		
Direct Access Storage Facility (see note 3)	---	2314 Mdl 2

NOTES:

1. The connection phase and the finite loading phase require a 48K minimum system with the exception of the network loading option which requires a 64K system.
2. A System/360 card punch, while not used by System/360 Capacity Planning, is required for system preparation.
3. A system with no other direct access storage device except 2314 also requires a 2400 series tape drive for system preparation.

Basic Program Product Offering

Unlicensed Documentation: One copy of each of the following - Program Description Manual ... Operations Manual.

Licensed Machine Readable Material: One copy of Machine Readable Material consisting of source code plus a sample problem available on one magnetic tape or disk pack.

To order basic machine readable material, use the following specify numbers.

	Specify Number		Track/Density	Description
	2311 User	2314 User		
Customer Supplied	#9026	#9226	7/800	2400' MT
	#9028	#9228	9/800	2400' MT
	#9029	#9229	9/1600	2400' MT
Order from IBM	#9126	#9326	7/800	2400' MT
	#9128	#9328	9/800	2400' MT
	#9129	#9329	9/1600	2400' MT
Customer Supplied	#9052	-	1316	Disk Pack
Order from IBM	#9152	-	1316	Disk Pack

Prices:

Type	Program No.	DPMO No.	Programming Service Classification	Monthly Charge
5736	M12	M12	B	\$225

Special Features

Licensed Documentation: One copy each of the Systems Manual.

To order licensed documentation, use feature #7017, no charge.

Additional Documentation

Prices and form numbers (feature number) for copies of Licensed and Unlicensed Documentation will be announced when the program is available.

Related Program Product Documentation: No charge, Application Description Manual (H20-0627). Use Key G.

Reference Material: (No charge) 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, H20-0471 . . . System/360 Requirements Planning -
Application Description Manual, H20-0487 . . . System/360 Requirements Planning -
Program Description Manual, H20-0584

For further information, contact a Manufacturing Industry Marketing Representative.

Publication Support: Initial supplies of the unlicensed Basic Program Product form numbered publications will be distributed through DAPS. Order additional copies as well as copies of licensed publications from the IBM Distribution Center, Mechanicsburg, Pennsylvania when availability is announced in the Weekly Publications Release Letter.

**IBM World Trade Data Processing****PROGRAM ANNOUNCEMENT****1800 MPX VERSION 2 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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

MPX Version 2 can now be ordered. This real-time Multiprogramming Executive Operating System gives you the opportunity to sell new 1800 installations where applications require a large data base, communication between computers, or large-core storage requirements. Existing customers can expand their applications and integrate the 1800 system into large multicomputer configurations.

• • •

Highlights:

New SYSGEN options to permit more effective operations in 16K

New 2311 system residence capability

Shared files with S/360

Binary Synchronous Communications Support of S/360, the 1130, 2770, 2780 and other 1800s

Multitasking capability added

More software timers

Disk input to the FORTRAN compiler

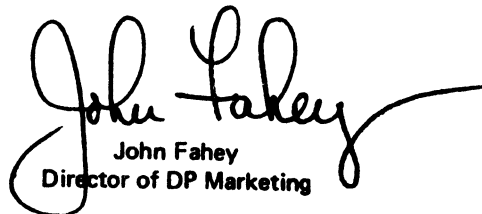
Keyboard input to Batch Processing Monitor

Advantages ... The additional core and large file capacity allow more effective use of the multiprogramming capability of the 1800.

Classification ... Type I with programming service classification A.

Maintenance ... MPX Version 2 replaces Version 1. Version 1 will be considered current until September 11, 1970. (3 months)

See the reverse side for more information on these highlights, program materials and ordering instructions.



John Fahey
Director of DP Marketing

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

ATTACHMENT: P9000

Release Date: June 11, 1970
Distribution: All Areas

P70-64

Highlights:

Reduced core storage requirements for the 1800 MPX Operating System are now possible through a new group of system generation options. They are primarily designed to relax core storage requirements for smaller 1800 configurations which do not require many of the advanced features available in MPX. However, they may also apply to large systems. A system which elects all of the new options can realize a savings of approximately 1,000 words.

New system residence capability -- The MPX system not only supports the 2311 disk as a storage device, but can now reside on the 2311 or the 1810.

Binary Synchronous Communications Support of S/360, the 1130, 2770, 2780 and other 1800s.

Multitasking capability added -- Lets you achieve concurrent operation of multiple subprograms within multiple SPAR coreloads.

More software timers -- As many as 32 timers can be selected for use where periodic and timed execution are vital.

Disk input to the FORTRAN compiler -- Now the FORTRAN compiler accepts source input from either the 1810 or 2311. Source updating capability is also provided.

Keyboard input to Batch Processing Monitor -- Supervisor and Disk Management Programs are provided with a conversational mode of operation. This permits acceptance of an input stream from either of two 1816 printer-keyboards or the 1442 card read punch.

Reference Material:

MPX System Introduction GC26-3718 ... MPX Planning Guide GC26-3731 ... 1800 Reference Summary - System Reference Data GX26-5624 ... 1800 Reference Summary - MPX Control Statements GX26-1594.

Basic Program Material:

SRL Publications -- 1800 Multiprogramming Executive Operating System, Programmer's Guide, GC26-3720; 1800 Multiprogramming Executive Operating System, Operating Procedures, GC26-3725; 1800 Multiprogramming Executive Operating System, Error Messages and Recovery Procedures, GC26-3727; 1800 Multiprogramming Operating System, Subroutine Library, GC26-3724; 1800 Assembler Language, GC26-5882; 1130/1800 Macro Assembler Programming, GC26-3733; 1130/1800 Basic FORTRAN IV Language, GC26-3715; 1800 Multiprogramming Operating System Communications Adapter Programming, GC26-3757.

Documentation -- Program Material List ... Attachment to Users.

Machine Readable -- MPX is available on either one 1316 Disk Pack (2311 users), one or two 2315 Disk Cartridges (1810 users), or one 2400 foot reel of magnetic tape which can be restored to a 1316 Disk Pack. Both 2311 and 1810 users will also receive a small deck of cards in addition to the disk distribution. The Communications Adapter support for 1810 users is contained on the third 2315.

The program number extension OPT1 is for the 2311 user. The complete MPX system is available on one 1316 Disk Pack.

The program number extension OPT2 is for the 1810 user. The MPX system, except for the Communications Adapter Support, is available on two 2315 Disk Cartridges.

The program number extension OPT3 is for the 1810 user requiring the Communications Adapter Support. This package is available on one separate 2315 Disk Cartridge.

1810 users requiring the entire MPX system, including the Communications Adapter Support, must order both the OPT2 and the OPT3 packages.

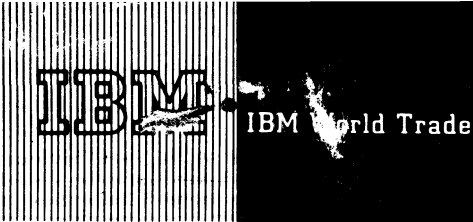
Current users will receive a preprinted program order form and a letter announcing the availability of Version 2. The letter instructs them to order the version through the branch office using the preprinted order form. Complete ordering instructions are provided in the letter to users.

Ordering Information [1800OS010]

	Program No. Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	none	MT 9/800	28	01
	OPT1	1316 Disk	52	01
	OPT2	2315	58	02
	OPT3	2315	58	01
Optional	none	MT 9/800	28	01
		MT 9/1600	29	01

The basic tape 9/800 may be restored to a 1316 Disk Pack on System/360.

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



CP-67/CMS VERSION 3

• 360D-05.2.005

Version 3 of CP-67/CMS is an improved version incorporating a number of functional enhancements and significant improvements in reliability and serviceability.



Control Program-67/Cambridge Monitor System (CP-67/CMS) is a multi-access, time-shared system which manages the resources of a S/360 Model 67 so that each remote user appears to have the functional capability of a complete, dedicated S/360. Within this 'virtual 360' the user may select an operating system to meet his particular needs.

The CP-67 component creates the time-sharing environment in which many virtual machines can simultaneously access the system. The Cambridge Monitor System (CMS) is a conversational operating system, which in a virtual machine provides a comprehensive, easy-to-use set of conversational languages and a command language. The command language of CMS gives the user a wide variety of functions, including the ability to create additional commands or subsystems to satisfy his special requirements. CP-67 is capable of running other S/360 operating systems as long as they do not include any timing dependencies or dynamically modified channel programs.

Enhancements ...

- . Virtual support extended to include the ability to run CP-67 in a virtual machine.
- . Automatic restart capability. CP-67 records status information on disk and re-IPLs itself (including warm start and operator login) without operator intervention.
- . Facilities added to record and retrieve I/O and machine check error information for use by CEs.
- . Dynamic allocation of DASD paging areas.
- . The CMS file system extended to provide for each user simultaneous access to five disks in either read-only or read/write mode, in addition to the CMS system disk.

Education ... For customer and IBM classes contact your Regional Manager of Education.

Publications ... System Description Manual is available now, see the attachment for details. Additional related documentation -- Users Guide ... Operators Guide ... Installation Guide ... Program Logic Manuals -- will be available from the IBM Distribution Center, Mechanicsburg. Form numbers will be announced when the program is available.

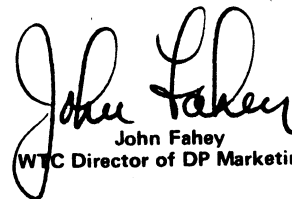
Develop a TOTAL ACTION PROGRAM for the use of IBM services - Field Engineering, Systems Engineering, Customer Education and Installation planning.

Planned availability is October 30, 1970 with programming service classification A.

For programming services purposes, CP-67/CMS Version 2 will be considered current for three months following the availability of Version 3.

No RPOs will be accepted at this time.

For other details, see the reverse side.


 John Fahey
 WTC Director of DP Marketing

*Announced by ITPS Memorandum to DP Branch Managers B70-124.

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: May 25, 1970*
Distribution: All Areas

P70-65
NOT USED

P70-66

CP-67/CMS Version 3 (360D.05.2.005): Control Program-67/Cambridge Monitor System (CP-67/CMS) is a multi-access, time-shared system which manages the resources of a S/360 Model 67 so that each user appears to have the functional capability of a complete, dedicated S/360. Within this 'virtual 360' the user may select the operating system of his choice. Many different operating systems may co-reside under CP-67, which acts as a supervisor over these operating systems. The Cambridge Monitor System provides a general-purpose, time-sharing capability when used in the CP-67 environment.

Description: The CP-67/CMS System consists of two components -- the Control Program (CP-67) and the Cambridge Monitor System (CMS). Each component can be run independently. If CP-67 is run without CMS, an appropriate operating system(s) must be used to provide the conversational and functional facilities since CP-67 provides only the capability of multiple virtual 360s.

The CP-67 component is capable of running many S/360 operating systems concurrently (including CP-67, OS/360, DOS, and Type III DOS/APL), subject to the following restrictions:

1. No timing dependencies exist.
2. The systems do not contain dynamically modified channel programs. Dynamically modified channel programs are those which are changed by the CPU or the channel between the time the Start-Input-Output instruction is issued and the end of the I/O operation. However, certain types of self-modified I/O sequences can be executed, such as in the OS/360 Indexed Sequential Access Method (ISAM).
3. Devices which have been tested and operate satisfactorily under the control of an operating system running in a virtual machine are listed in the section "Devices Used Only by an Operating System in a Virtual Machine" in the fact sheet.
4. For further details concerning restrictions see the CP-67/CMS System Description Manual.

An operating system which runs under CP-67 may have degraded performance as compared to running that system without CP-67. Therefore, the final evaluation of the performance of each operating system under CP must be made in terms of each installation's job load and requirements.

The environment of CP-67 is one of "virtual machines," functional simulations of a real S/360 and use of its associated I/O devices. Any standard S/360 instruction may be executed by the virtual machine except DIAGNOSE.

This virtual 360 is made up of an operator's console (the remote terminal), a virtual CPU, virtual memory and virtual I/O devices. Particular virtual machine configurations may differ from each other and from the real machine. Virtual I/O devices are controlled by the virtual machine and therefore basic I/O device support must be present in the operating system running in the virtual machine. CP-67 will monitor, translate, and schedule all I/O to ensure system integrity. The concept is based on CP-67 running all virtual machines in problem state and trapping and processing all interrupts for those machines. All privileged instructions are actually executed by CP-67.

The CMS component is a single-user, conversational monitor. When multiple CMS systems are run in the CP-67 environment, it becomes a general-purpose, time-sharing system. CMS gives the user a full range of capabilities from a remote terminal - creating and managing files, compiling and executing program programs, and on-line debugging. Since each CMS user has his own "machine," he is permitted to issue privileged instructions, thereby extending on-line development and testing into the entire realm of system development, including I/O support.

CMS Languages and Libraries include:

- OS/360 Assembler (F) Release 9
- OS/360 FORTRAN IV (G) Release 14
- OS/360 PL/I (F) Version 4 Release 15/16
- SNOBOL - a string processing language
- BRUIN - Brown University Interpreter
- SCRIPT - a text processor
- Scientific Subroutine Package, Version 2 (FORTRAN)

Highlights:

- Provides multiple virtual 360s in which unmodified standard operating systems can be run, including other T/P and time-sharing systems. Modifications can be made by the customer to operating systems to increase performance and to remove restrictive code.
- Paged virtual memory up to 16,777,216 bytes.
- General-purpose time-sharing system in CMS.
- Comprehensive, easy-to-use command language.
- Choice of operating systems in the virtual machines under CP-67 provides wide range of capabilities and function.
- Concurrent batch processing with remote terminal capability.
- Virtual support now includes the ability to run CP-67 itself in the virtual environment.
- Ability to execute privileged instructions in the virtual machine extends advantages of on-line program development to the system programmer.
- Device address independence allows use of virtual machines for system backup, SYSGEN, and system development during regular system operation.
- A restart capability is provided to record status information on disk and re-initialize the system for use without operator intervention. Virtual machine tasks must be restarted by each individual user.

Special Sales Information: Many System/360 Model 40, 50, and 65 customers are potential prospects for CP-67/CMS. Operating System compatibility provided by the virtual machine technique facilitates transition between S/360 configurations using the Model 67 as a conversion vehicle for large multiple system customers or as the growth direction in itself. New function may be added while maintaining concurrent operation of existing software. For example, adding CMS and OS/360 while continuing use of DOS, Type III DOS/APL, or 44 PS.

Use: Virtual machine capability enables each user to appear to have at his disposal a dedicated S/360 tailored to his own requirements. Within the stated restrictions, multiple S/360 operating systems may be run concurrently, including systems which themselves communicate with remote terminals or CPUs. I/O devices may be shared between systems or attached to an individual operating system. I/O control and data management are handled by the virtual operating system. Thus data set compatibility exists between the virtual mode of operation and the normal dedicated machine operation.

Customer Responsibilities:

- Ordering and installing satisfactorily all required communications equipment.
- A CP-67/CMS system generation to include selection of desired options and preparation of machine description module.
- Allocating and formatting DASD space for the CP-67 control program and user work areas.
- Generating and maintaining user directory and virtual machine descriptions.
- Make the final evaluation as to whether his application or programs will operate properly under CP-67.
- Operators must be trained to use the terminal command language in terminal operations and be familiar with concepts of virtual machines.
- Train a systems programmer in the internal operations of the system, to enable him to make the most efficient use of the system and to maintain and/or modify the system if desired.

Programming Systems: CP-67/CMS is written in OS/360 Assembler Language. All program maintenance is performed using the terminal facilities provided by CMS. Original installation is based upon the real machine capability of CMS. The Assembler (F), FORTRAN (G), and PL/I (F) language processors in CMS are those of OS/360.

Minimum Machine Configuration: CP-67 is structured to run on System/360 Model 67. CMS, if used independently, requires System/360 Model 40H or above. Note that CMS is considered practical only in a virtual machine environment as it is a single user operating system.

CP-67 Minimum Configuration

- 2067 - 1 or 2067 - 2 Processing Unit
- Recommended feature: #4434 Floating Storage Addressing (Model 1 only)
- 2365 Processor Storage
- 1052 Printer-KeyBoard Model 7
- 2860 Selector Channel
- 2870 Multiplexer Channel
- 1403 Printer
- 2540 Card Read Punch
- Three 2311 Disk Storage Drives or 2314 Direct Access Storage Facility (2 disk storage modules minimum)
- 2400 Nine-track Magnetic Tape Drive, 800 bpi
- 2702 or 2703 Transmission Control Unit or 2701 Data Adapter Unit

Terminals Supported by CP-67 As Machine Operator's Console

1051/1052 Model 2 Data Communications System

- Required features:
- #6100 Receive Interrupt or RPQ E27428 Receive Interrupt
 - #7900 Transmit Interrupt or RPQ E26903 Transmit Interrupt
 - #9698 Time Out Suppression

1056 Card Reader

2741 (-1, -2) Communication Terminals

- Required features:
- #3255 Dial-Up
 - #4708 Receive Interrupt
 - #7900 Transmit Interrupt or RPQ E40681 Transmit Interrupt Control
- Desirable feature:
- #5501 Print Inhibit

Line control for teletypewriter terminals* compatible with the IBM Telegraph Terminal Control Type II Adapter (8-level ASCII code at 110 bps).

Transmission Control Units Supported by CP-67:

2701 Data Adapter Unit

Terminals	2701 Adapter
8-level ASCII,	7885
110 bps*	

2702 Transmission Control Unit

Terminals	Terminal Control Base	Terminal Control	Line Adapter
2741s, 1050	9696 or 7935	4615, 9684, 8200**	3233
8-level ASCII, 110 bps*	9697 or 7935	7912	3233

2703 Transmission Control Unit

Terminal	Line Speed Option	Line Set	Terminal Control	Line Bases
2741s, 1050	4878	3205/6	4619, 4696, 8200***	7505
8-level ASCII, 110 bps*	4877	3205/6	7905, 7912	7505

Additional Devices Utilized by CP-67

2301 Drum Storage Unit
2303 Drum Storage Unit

2870 Multiplexer Channel with #6990, #6991, #6992.
1, 2, 3 Selector Sub-Channels

Devices Used Only by an Operating System in a Virtual Machine and not by CP-67

2321 Data Cell
2400 Series Tape Drives
2250 Graphic Display
2260 Display Station
2860 Selector Channel with #1850 Channel to Channel Adapter
2780 Data Transmission Terminal
1130 Computing System

Devices Supported by CMS

Core size: Minimum 256K and up in Multiples of 256K (up to 16M Virtual)
1052 Printer-Keyboard
Six 2311 Disk Storage Drives or 2314 Direct Access Storage Facility (2 disk storage modules minimum)
2540 Card Read Punch
1403 Printer
Two 2400 Series tape drives, nine or seven track
200, 556, or 800 bpi
(one nine track, 800 bpi required for installation)

Representative Configuration: 512K, two Selector Channels, one Multiplexer Channel, one or two 2301 Drum Storage Units, one or two 2314 Direct Access Storage Facilities, 1403 Printer, 2540 Card Read Punch, 2702 or 2703 Transmission Control Unit, 2400 Series Tape Drives (9-track).

Related Documentation: CP-67/CMS System Description Manual (Preliminary Edition) is available in limited quantities from the CP-67/CMS Development Group, 545 Technology Square, Cambridge, Massachusetts 02139. Availability and form number of the Mechanicsburg distributed edition will be announced in a future PRL.

Programming Service Classification is A.

For programming service purposes CP-67/CMS, Version 2 will be considered current for three months following the availability of Version 3. If in the future a new release is made available for this program, the period that Version 3 will remain current for programming service purposes will be specified at the time of the new release.

For further information contact your District or Regional Time-Sharing Marketing Representative.

*The customer is responsible for terminal compatibility with this program. IBM assumes no responsibility for the impact that any changes to the IBM supplied products or programs may have on terminals provided by others.

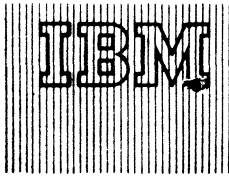
**Feature 8200 on the 2702 is equivalent to the 2741 Break feature #8055 and the Type I Break RPQ E46765 on the 2702.

***Feature 8200 on the 2703 is equivalent to the 2741 Break feature #8055 and the Type I Break RPQ E53715 on the 2703.

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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
- [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 references 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.
- [9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



OS/360 TIME SHARING OPTION ANNOUNCED FOR THE MODEL 65 MP

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 references 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.**
- [9] World Trade now identifies certain current programs with a programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

The time sharing capability under the Time Sharing Option(TSO) of OS/360 MVT has been extended to include support of the System/360 Model 65 Multiprocessor System.

TSO provides the Model 65 Multiprocessing System with a general purpose time sharing capability in a compatible OS/360 MVT environment.

For additional support information, refer to the announcements referenced below.


Highlights ...

- All features of TSO announced in P69-125 are supported for the Model 65 Multiprocessor System, thus maintaining the compatibility of the 65 MP MVT support with the uniprocessor MVT support.
- The minimum 65 MP system configuration supported is a 512K bytes system with I/O requirements as stated in P69-125.
- All ten TSO program products announced (see 269-104) are available to users of the 65 MP System.
- The performance and availability characteristics of the Model 65 Multiprocessor System will be available to the TSO user.

Availability ... 1Q72 as Type I with programming service classification A.

Publications ... The Model 65 Multiprocessor System Sales and Systems Guide and appropriate SRLs and PLMs will be updated. Availability of these updates will be announced in a PRL.

This announcement cancels the MP/65 Statement of Intent in P69-125.



John Fahey
Director of DP Marketing

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: June 15, 1970
Distribution: All Areas

Console Printer Keyboard—Model 155 . . . Support of the 3210-1 and the 3215 console printer-keyboards are provided to both DOS and OS users. The availability of the 3215 as a console printer-keyboard provides a high speed option to the Model 155 user.

Remote Console Printer-Key-board—Model 155 . . . The 3210-2 Console Printer-Key-board is supported as an alternate console by OS. Multiple Console Support allows the console to be used as one of up to 31 secondary consoles.

3330 Support . . . The 3330 will be supported by MFT and MVT. This includes using the 3330 for systems residence, data management access methods, TSO, TCAM and those OS functions which use standard data management access methods. This includes language processors (COBOL, PL/I, FORTRAN, ASSEMBLER, RPG and ALGOL) Utilities, etc. A Sort/Merge program product will be available to provide full 3330 support.

Model 155 Channels . . . The OS MFT and MVT options support the new block multiplexer channel and the optional additional byte multiplexer channel.

The OS support of the 3330 utilizes the Rotational Position Sensing and Multiple Request Functions to fully exploit the performance potential of the 3330.

Most programs written for the 2311 and 2314 using SAM, PAM, DAM and ISAM will run unchanged on the 3330. OS Utilities may be used to transfer data sets from existing DASD devices to the new 3330 Disk Storage facility.

ASP and HASP will support the 3330 within 3 months after the OS support is available.

2305 Support . . . The previously announced MFT and MVT support for the 2305 is extended to include TSO, ISAM and RPS support for the job queue. This additional support for the 2305 will be available concurrent with the 3330 support. The support described for the 3330 are also applicable to the 2305 except that the 2305 will not be supported for ASP, HASP and TCAM or as an intermediate sort work file.

3211 Support . . . The 3211 Printer is supported by DOS and the MVT and MFT options of OS on S/360 and S/370. The OS support is provided by BSAM and QSAM and as a SYSOUT device. It enables programs written to utilize the 1403 to be used with the 3211 by changing only JCL. DOS provides the necessary macros to control the 3211. They are compatible with current 1403 macros so that programs using LIOCS for the 1403 can be used with the 3211 without modification.

ASP, HASP and DOS POWER will support the 3211 within 3 months after the OS and DOS support is available.

OS and DOS Distribution and SYSGEN . . . The operating system distributed from PID to support S/370 will also support S/360. The operating system (OS or DOS) can be SYSGENed on either S/360 or S/370 for any supported

S/360 or S/370. The generated system should be run on the system specified during SYSGEN to take advantage of RMS. The integrated emulators will be ordered and distributed separately from OS. A MFT starter system for 128K or greater systems will be provided for S/360 and S/370. A separately ordered 64K PCP starter system will be provided for S/360 only.

These starter systems will be distributed on 2311 and 2314 restore tapes for use with those devices. A starter system will be available on 3330 restore tapes by March 1972.

Additional Information . . . PCP does not support S/370, the 3330, the 2305 or the 3211.

The support described in this announcement is programming service classification A. RPOs are not accepted at this time.

The following pages provide details on the preceding highlights section. Performance and minimum system requirements are provided only where there are significant changes. The planning publications listed are now available or will be available shortly. OS and DOS publications will be updated to include information on the new features and support concurrent with the availability of that support. Publications Release Letters will announce these availabilities.

Content

- OS - Assembler F Support of S/370
 - Extended Precision Floating Point Simulator
 - Real Time Monitor
 - ASCII Extensions - OS, DOS and TSS
 - Time of Day Clock
 - 1401/1440/1460 Integrated Emulator - Model 155
 - 1410/7010 Integrated Emulator - Model 155
 - 7070/7074 Integrated Emulator - Model 165
 - 7080 Integrated Emulator - Model 165
 - 709/7090/7094 Integrated Emulator - Model 165
 - DOS Emulator Model 155
 - Recovery Management Support
 - On Line Test
 - 3330 Support
 - 2305 Support
 - 3211 Support
- DOS - Assembler D Support of S/370 Model 155
 - ASCII Extensions (see OS section)
 - 1401/1440/1460 Integrated Emulator - Model 155
 - 1410/7010 Integrated Emulator - Model 155
 - Recovery Management System Support - Model 155
 - On Line Test
 - 3211 Support

Initial copies of the unlicensed form-numbered publications mentioned in this announcement will be shipped through DAPS within the next 60 days. Consult the weekly PRL for availability information. Additional copies will be available from the IBM Distribution Center in Mechanicsburg, Pa.



OS ASSEMBLER F SUPPORT OF THE IBM SYSTEM/370

Assembler F provides assembler language support of the additional instructions found in the System/370.

The System/370 contains an enhanced instruction set. OS assembler support of this enhancement is provided by the following additional mnemonics:

Mnemonic	Definition
SRP	Shift and Round Decimal
ICM	Insert Characters Under Mask
CLM	Compare Logical Characters Under Mask
STCM	Store Characters Under Mask
MVCL	Move Characters Long
CLCL	Compare Logical Long
STCK	Store Clock
*SCK	Set Clock
*STCTL	Store Control
*LCTL	Load Control
*STIDP	Store ID, Processor
*HDV	Halt Device
*STIDC	Store ID, Channel
*SIOFR	Start I/O Fast Release

*Privileged mode instructions

The additional mnemonics allow use of the new instructions found in the System/370. These new instructions provide extensive character and data manipulating capabilities to the assembly language programmer.

Assembly language programs utilizing the new mnemonics can be assembled on S/360 and S/370. For execution S/370 is required.

• • •

EXTENDED PRECISION FLOATING POINT SIMULATOR

The Extended Precision Floating Point Simulator is a set of modules providing full extended precision (16 bytes) arithmetic support for OS MFT and MVT users on S/360 and S/370. It includes:

- Extended Precision Floating Point divide for the models 85 and 195 and S/370.
- Simulation of all EP instructions for models which do not have the feature.

Highlights

- Calculations are performed on fractions of 28 hexadecimal, or approximately 33 decimal digits of precision.
- Object programs will be portable between systems with and without the EP feature.
- The Simulator is used by the FORTRAN IV (H Extended) and OS PL/I Optimizing Compiler Program Products.

User Environments ... Simulation on non-EP machines can be used to:

- Begin Transition to S/370 and 360/85 and 195 prior to installation.
- Simplify backup procedures for EP machines.
- Attain great accuracy where the number of calculations is small or object speed can be sacrificed.

Operation ... The Simulator is loaded only when needed by a job, or may reside in the LINKPACK area. Extended Precision operations in problem programs will be coded using the eight EP operation codes regardless of the machine model on which the program will ultimately be run. Execution of the instruction will occur normally if the model supports that EP op code. Otherwise, an operation exception program interruption will occur. Control will be passed to the program's interrupt handler which then invokes the Simulator.

These operations will be transparent to users of the FORTRAN H Extended and OS PL/I Optimizing Compiler Program Products.

Residence Requirement ... The Simulator resides in LINKLIB. It requires less than two tracks of DASD space.

Performance ... The performance of an OS system that does not employ Extended Precision Floating Point is not affected by this support.

For systems that do employ this support, the effect is primarily a function of the number of times that Extended Precision arithmetic operations are used. Performance is a combination of:

- a. The system processing time required to pass control to the users interruption routine which in turn invokes the simulator.
- b. The time required to execute the simulation routines.

Thus, the total processing time required under simulation may far exceed that required if the comparable function were performed by extended precision hardware.



Console Printer Keyboard—Model 155 . . . Support of the 3210-1 and the 3215 console printer-keyboards are provided to both DOS and OS users. The availability of the 3215 as a console printer-keyboard provides a high speed option to the Model 155 user.

Remote Console Printer-KeyBoard—Model 155 . . . The 3210-2 Console Printer-KeyBoard is supported as an alternate console by OS. Multiple Console Support allows the console to be used as one of up to 31 secondary consoles.

3330 Support . . . The 3330 will be supported by MFT and MVT. This includes using the 3330 for systems residence, data management access methods, TSO, TCAM and those OS functions which use standard data management access methods. This includes language processors (COBOL, PL/I, FORTRAN, ASSEMBLER, RPG and ALGOL) Utilities, etc. A Sort/Merge program product will be available to provide full 3330 support.

Model 155 Channels . . . The OS MFT and MVT options support the new block multiplexer channel and the optional additional byte multiplexer channel.

The OS support of the 3330 utilizes the Rotational Position Sensing and Multiple Request Functions to fully exploit the performance potential of the 3330.

Most programs written for the 2311 and 2314 using SAM, PAM, DAM and ISAM will run unchanged on the 3330. OS Utilities may be used to transfer data sets from existing DASD devices to the new 3330 Disk Storage facility.

ASP and HASP will support the 3330 within 3 months after the OS support is available.

2305 Support . . . The previously announced MFT and MVT support for the 2305 is extended to include TSO, ISAM and RPS support for the job queue. This additional support for the 2305 will be available concurrent with the 3330 support. The support described for the 3330 are also applicable to the 2305 except that the 2305 will not be supported for ASP, HASP and TCAM or as an intermediate sort work file.

3211 Support . . . The 3211 Printer is supported by DOS and the MVT and MFT options of OS on S/360 and S/370. The OS support is provided by BSAM and QSAM and as a SYSOUT device. It enables programs written to utilize the 1403 to be used with the 3211 by changing only JCL. DOS provides the necessary macros to control the 3211. They are compatible with current 1403 macros so that programs using LIOCS for the 1403 can be used with the 3211 without modification.

ASP, HASP and DOS POWER will support the 3211 within 3 months after the OS and DOS support is available.

OS and DOS Distribution and SYSGEN . . . The operating system distributed from PID to support S/370 will also support S/360. The operating system (OS or DOS) can be SYSGENed on either S/360 or S/370 for any supported

S/360 or S/370. The generated system should be run on the system specified during SYSGEN to take advantage of RMS. The integrated emulators will be ordered and distributed separately from OS. A MFT starter system for 128K or greater systems will be provided for S/360 and S/370. A separately ordered 64K PCP starter system will be provided for S/360 only.

These starter systems will be distributed on 2311 and 2314 restore tapes for use with those devices. A starter system will be available on 3330 restore tapes by March 1972.

Additional Information . . . PCP does not support S/370, the 3330, the 2305 or the 3211.

The support described in this announcement is programming service classification A. RPOs are not accepted at this time.

The following pages provide details on the preceding highlights section. Performance and minimum system requirements are provided only where there are significant changes. The planning publications listed are now available or will be available shortly. OS and DOS publications will be updated to include information on the new features and support concurrent with the availability of that support. Publications Release Letters will announce these availabilities.

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- OS - Assembler F Support of S/370
 - Extended Precision Floating Point Simulator
 - Real Time Monitor
 - ASCII Extensions - OS, DOS and TSS
 - Time of Day Clock
 - 1401/1440/1460 Integrated Emulator - Model 155
 - 1410/7010 Integrated Emulator - Model 155
 - 7070/7074 Integrated Emulator - Model 165
 - 7080 Integrated Emulator - Model 165
 - 709/7090/7094 Integrated Emulator - Model 165
 - DOS Emulator Model 155
 - Recovery Management Support
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- DOS - Assembler D Support of S/370 Model 155
 - ASCII Extensions (see OS section)
 - 1401/1440/1460 Integrated Emulator - Model 155
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 - Recovery Management System Support - Model 155
 - On Line Test
 - 3211 Support

Initial copies of the unlicensed form-numbered publications mentioned in this announcement will be shipped through DAPS within the next 60 days. Consult the weekly PRL for availability information. Additional copies will be available from the IBM Distribution Center in Mechanicsburg, Pa.



OS ASSEMBLER F SUPPORT OF THE IBM SYSTEM/370

Assembler F provides assembler language support of the additional instructions found in the System/370.

The System/370 contains an enhanced instruction set. OS assembler support of this enhancement is provided by the following additional mnemonics:

Mnemonic	Definition
SRP	Shift and Round Decimal
ICM	Insert Characters Under Mask
CLM	Compare Logical Characters Under Mask
STCM	Store Characters Under Mask
MVCL	Move Characters Long
CLCL	Compare Logical Long
STCK	Store Clock
*SCK	Set Clock
*STCTL	Store Control
*LCTL	Load Control
*STIDP	Store ID, Processor
*HDV	Halt Device
*STIDC	Store ID, Channel
*SIOFR	Start I/O Fast Release

*Privileged mode instructions

The additional mnemonics allow use of the new instructions found in the System/370. These new instructions provide extensive character and data manipulating capabilities to the assembly language programmer.

Assembly language programs utilizing the new mnemonics can be assembled on S/360 and S/370. For execution S/370 is required.

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EXTENDED PRECISION FLOATING POINT SIMULATOR

The Extended Precision Floating Point Simulator is a set of modules providing full extended precision (16 bytes) arithmetic support for OS MFT and MVT users on S/360 and S/370. It includes:

- Extended Precision Floating Point divide for the models 85 and 195 and S/370.
- Simulation of all EP instructions for models which do not have the feature.

Highlights

- Calculations are performed on fractions of 28 hexadecimal, or approximately 33 decimal digits of precision.
- Object programs will be portable between systems with and without the EP feature.
- The Simulator is used by the FORTRAN IV (H Extended) and OS PL/I Optimizing Compiler Program Products.

User Environments ... Simulation on non-EP machines can be used to:

- Begin Transition to S/370 and 360/85 and 195 prior to installation.
- Simplify backup procedures for EP machines.
- Attain great accuracy where the number of calculations is small or object speed can be sacrificed.

Operation ... The Simulator is loaded only when needed by a job, or may reside in the LINKPACK area. Extended Precision operations in problem programs will be coded using the eight EP operation codes regardless of the machine model on which the program will ultimately be run. Execution of the instruction will occur normally if the model supports that EP op code. Otherwise, an operation exception program interruption will occur. Control will be passed to the program's interrupt handler which then invokes the Simulator.

These operations will be transparent to users of the FORTRAN H Extended and OS PL/I Optimizing Compiler Program Products.

Residence Requirement ... The Simulator resides in LINKLIB. It requires less than two tracks of DASD space.

Performance ... The performance of an OS system that does not employ Extended Precision Floating Point is not affected by this support.

For systems that do employ this support, the effect is primarily a function of the number of times that Extended Precision arithmetic operations are used. Performance is a combination of:

- a. The system processing time required to pass control to the users interruption routine which in turn invokes the simulator.
- b. The time required to execute the simulation routines.

Thus, the total processing time required under simulation may far exceed that required if the comparable function were performed by extended precision hardware.



OS - REAL TIME MONITOR FOR S/360 AND S/370

The Real Time Monitor (RTM) extends OS function. It provides marketing opportunities to:

- Sell new systems with sensor based applications
- Upgrade batch systems to include real-time capability

RTM occupies approximately 15K bytes of storage. It provides the basic supervisor facilities required for fast response applications such as:

- Hybrid Computing
- Telemetry Data Reduction
- Wind Tunnel Monitoring
- Manufacturing Control
- Laboratory Automation
- High Speed Data Acquisition

Features ... RTM offers the following capabilities within the OS environment:

- Simplicity of use.
- The ability to coreside with MFT and MVT in an available partition or region, and then only when needed.
- Service facilities for user to manipulate and control the job's execution. These are available via supervisor calls (SVCs)
- A generalized I/O capability allowing the execution of user written channel programs
- High priority for real-time jobs
- Multiprogramming of real-time work
- Minimum response time for real-time devices
- Facilities to interface user written support for non-supported devices

Specific support is contained in RTM to IBM announced configurations of S/360 and S/370 for these features.

- Channel to channel adapter (1850)
- S/360 Adapter on the 1800 DACS (FC7720) when attached to S/360
- The Priority Interrupt Subchannel (RPQ-W30504), Half Duplex Subchannel (RPQ-882101) and High Resolution Timer Subchannel (RPQ-888183) of the 2909-3 Asynchronous Data Channel (RPQ-F13299). Prerequisite RPQs are 888257 (2075 attachment) or 888258 (2065 attachment).
- External Interrupt (3895) and Direct Control (3274).

Operation ... The Real Time Monitor is entered into a region or partition as a normal job by means of existing JCL procedures. Once in execution, the Real Time Monitor takes control of the system interrupts, monitors them and directs them to the appropriate routines for servicing. Real-time interrupts that require fast response are handled by the Real-Time Monitor at the time of their occurrence. Interrupts associated with non real time jobs are either held pending if a real-time job is in execution or passed to OS for processing.

Real time problem programs are entered in the normal job stream and scheduled by OS with full use of OS facilities. These problem programs inform RTM of their presence in the system through the use of a FORTRAN subroutine or Assembler Language macro. The problem programs have full use of the Real Time Monitor for scheduling real time input/output and CPU Time.

The Real-Time Monitor gives priority to real time work. Whenever real time processing is not required, the monitor allows normal multiprogramming operations to proceed under OS control.

At real-time problem program termination, control of the job is passed to OS step or job termination facilities.

Performance ... In fast response mode, RTM branches to user code after the execution of approximately 30 instructions. Some degradation of the non real time work will be experienced when RTM is in the system. RTM causes OS to operate in the problem program state and intercepts privileged OS instructions.

Customer Responsibilities ... The customer is responsible for resolving conflicts between RTM and programs which contain time dependant or time critical coding. Consult the sales manual pages for a complete list of customer responsibilities.

Special Sales Information ... The following material will be available in support of RTM. Availability will be announced in a Publications Release Letter.

- A slide presentation which describes RTM, its operation, applications and benefits.
- A student study guide to provide training for salesmen, System Engineers and customers.

The Real-Time Monitor is ordered and distributed separately from OS.

RTM will be supported in future releases of OS within three months of OS Release availability.

RTM is added to the designated list of the country DP installation Program for all pre-proposal and pre-order reviews. This also includes the proposed use of RTM with on-order and installed systems.

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ASCII - OS, DOS AND TSS SUPPORT FOR INFORMATION INTERCHANGE STANDARDS ON S/360 AND S/370

The support in Data Management and in OS and DOS Job Management for the American National Standard Code for Information Interchange, X3.4-1968, provides OS, DOS and TSS customers with the capability to accept and create magnetic tapes recorded in accordance with all of the following standards:

1. American National Standard Code for Information Interchange, X3.4-1968. This is a revision of the 1963 and 1967 versions of the code and is given the acronym ASCII.
2. American National Standard Recorded Magnetic Tape for Information Interchange, 9-track 800 CPI, NRZI, X3.22-1967.
3. American National Standard Magnetic Tape Labels for Information Interchange, X3.27-1969.

Customers can interchange data between systems regardless of manufacturer or operating systems, provided the data contains only ASCII characters and is recorded according to ANSI X3.22-1967. The Support applies to physical sequential magnetic tape files processed by object programs. It specifically excludes support for system files.

Files coded in ASCII must appear on tape according to the record forms defined by the label standard. Information is always translated into Extended Binary Coded Decimal Interchange Code (EBCDIC) for processing with the system. The programming support itself remains based on EBCDIC and system data sets remain in EBCDIC.

Current OS support for paper tape devices is consistent with American National Standard Perforated Tape Code for Information Interchange, X3.6-1965.

Features

- Data Management provides for the processing of labeled or unlabeled magnetic tapes containing ASCII data in the Basic and Queued Sequential Access Methods (OS), Sequential Access Method (DOS) and Basic and Queued Sequential Access Methods (TSS).
- Data Management also provides automatic translation transparent to the programmer. Input files containing ASCII data exclusively will be translated to EBCDIC as soon as the record has been read. Output files described as ASCII will be translated from EBCDIC character codes into ASCII character codes just prior to writing the completed record. Where no correspondence exists between the character codes, the EBCDIC bit pattern will be translated to the bit pattern representing the ASCII Substitute (SUB) character.

- Data Management provided support for American National Standard Magnetic Tape Labels which allows the definition of system and user labels and the record formats in which ASCII coded data will appear on magnetic tape.
- Record formats defined in the label standard include fixed (F), variable (D), and undefined (U). ASCII coded data must appear in one of these record forms. The fixed and undefined forms are the same as those currently supported. (A new, optional block prefix is discussed in the referenced publication.) The variable form is new and differs from the current variable form in that externally the record descriptor word, accompanying each variable length logical record, contains a four-character decimal field that gives the length of the logical record, including the decimal field. F and D format records may be blocked or unblocked; U format records are always treated as unblocked.
- This support is available in OS and DOS through the Data Management macros provided via assembler language.
- In TSS, this support is available through the Device Management macros and/or commands provided via the assembler language Command System. Device Management sets up flags in applicable DCB fields which are referenced by Access Methods. The latter handles standard label processing and ASCII translation.
- OS and DOS Job Control Language, TSS Device Management, and DOS system macros provide new options for designating American National Standard Magnetic Tape Labels, ASCII files, and support in the applicable DCB or DTF fields.

Processors: The following OS Program Products support ASCII:

- OS American National Standard Full COBOL Compiler Version 3 (5734-CB1)
- OS FORTRAN IV Library (MOD I) (5734-LM1)
- OS Sort/Merge (5734-SM1)
- TSO Data Utilities (5734-UT1)
- OS Data Set Utilities (5734-UT2)
- OS PL/I Optimizing Compiler (5734-PL1)
- OS PL/I Transient Library (5734-LM5)

The following DOS Program Products support ASCII:

- DOS American National Standard Full COBOL Compiler Version 3 (5736-CB2)
- DOS American National Standard Full COBOL Object-Time Library (5736-LM2)
- DOS American National Standard Subset COBOL Compiler and Library (5736-CB1)
- DOS FORTRAN IV Library ASCII Support (5736-LM1)
- DOS Tape and Disk Sort/Merge Program (5736-SM1)

DOS ASCII Magnetic Tape Utilities (5736-UT2)
 DOS PL/I Optimizing Compiler (5736-PL1)
 DOS PL/I Transient Library (5736-LM5)

System Configuration ... ASCII files are supported for interchange on one-half inch, 9-track, 800 CPI, NRZI magnetic tape only. While no additional hardware facilities are required or supported by the standard, this support does not prohibit ASCII data from being written to tapes of other densities, e.g., 1600 bpi. The inclusion of ASCII support in DOS will result in generation of a supervisor greater than 6K bytes.

Performance ... The use of ASCII tapes increases tape processing time due to the linkage to and execution of the translate routine on every I/O operation performed on the ASCII tape. Numeric data now recorded in dense form (e.g., packed decimal, binary, floating point,) will increase in length when translated to character string, the only standard form. In addition, conversion for computational purposes may be required within the object program.

Restrictions

ASCII support is not provided for:

- System input files
- System output files
- Tape reels containing check points
- System and work files
- V-Format records
- User labels crossing volume boundaries

The support assumes that the programmer does not use any characters other than the 128 standard ASCII characters when reading or writing files to be translated.

Programmers are responsible for effecting translation when system facilities providing automatic translation are by-passed, e.g., the EXCP programmer.

The label standard requires that all tape blocks must contain an integral number of records; therefore, spanned records are not supported.

Publications ... Additional information is provided in the publication IBM System/360: Planning for the Use of Information Interchange Standards: OS, DOS, TSS, GC28-6756.

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OS-SYSTEM/370 TIME-OF-DAY (TOD) CLOCK PROGRAM SUPPORT

This support allows users of the System/370 to utilize the one microsecond resolution Time-of-Day (TOD) Clock for all references to the correct time and date.

The important features are

- At IPL time the operator can verify and optionally reset the TOD Clock's time and/or date.
- All programs utilizing OS timing facilities to determine time-of-day will receive improved accuracy through the TOD Clock in a compatible fashion.
- An OS facility is provided to read the time-of-day to one microsecond resolution.
- Requests for interruption at a specific time of day are periodically synchronized with the TOD Clock. This support provides greater accuracy over large intervals of time.

The System/370 TOD Clock support is automatically included at SYSGEN time.

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OS-1401/1440/1460 INTEGRATED EMULATOR PROGRAM FOR IBM SYSTEM/370 MODEL 155

The 1401/1460 Emulator Program executes as a problem program under the control of the MFT or MVT options of OS on the Model 155 equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). The combination of the emulator program and the compatibility feature enables programs written for the IBM 1401, 1440, and 1460 Data Processing Systems to be executed on the Model 155. Most 1401/1440/1460 programs that are written in accordance with IBM Principles of Operation and are not time-dependent can be executed without modification. Programs written for the 1401 Model G are not emulated. Emulation is provided for 1401/1440/1460 systems with main storage sizes that range from 2,000 to 16,000 positions of core storage.

Card, tape, and disk programs are emulated. Two tape formatting programs are provided to convert 1401/1440/1460 tape files to the standard Operating System format (spanned variable-length record format) for more efficient use by the emulator program and to convert tape files back to the original format. Also, a disk formatting program is provided to assist the user in converting 1401/1440/1460 disk files to the standard Operating System format. Disk files must be converted before being used by the emulator program, while tape files can be in the original format or in the converted format. (A tape in original 1401/1440/1460 format must be converted if its record length exceeds 32,765 bytes or if its data is in mixed densities.)

Highlights ... Executes as a job under OS (MFT and MVT), thus taking advantage of the multiprogramming facilities of the operating system, including better use of system resources.



Permits both 1401/1460 programs and System/370 programs to be placed in a single input job stream for processing on the Model 155. Thus, an integrated operation is provided for the installation, where other problem programs, such as utility programs, user jobs, compilers, or other integrated emulator programs, can be executed concurrently.

Allows the user to initiate or increase non-emulation work, such as graphics or telecommunications applications, in installations with an emulation workload.

Enables the user to concentrate on the development of new applications, since he can reprogram gradually.

Job initiation, job scheduling, and resource allocation will be accomplished by the Operating System. Input/output activity is controlled through the use of the Operating System data management facilities. Device and data set control information is entered using Operating System job control language and emulator control statements. Emulator control commands can be entered by the operator and provide direct communication with the emulator program.

Performance... Internal speed (performance of CPU instructions only and weighted by frequency of use) of the integrated emulator is approximately 1.75 times that of the 1401/1460 stand-alone emulator for the IBM System/360 Model 40. Throughput under emulation is not determined by the emulator as much as it is by the 1400 program being executed. Throughput of 1400 jobs is affected by the mix of CPU operations (executed by the compatibility feature and/or the emulator program), input/output operations (executed by the emulator program), and the amount of interference from higher-priority partitions or regions.

Minimum System Requirements... For emulation, the Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). 1401/1440/1460 devices are emulated by corresponding Model 155 input/output devices. There must be sufficient main storage for the option of OS used, for the emulator functions required, for the emulated system and for the 1401/1440/1460 program being emulated.

The main storage required for the emulator program ranges from a minimum of about 20K bytes to a maximum of about 34K bytes, depending on the special features chosen and the input/output devices supported. This does not include the main storage required for the operating system data management routines, the input/output buffers used by the emulator program, and the simulated 1401/1440/1460 storage.

Publications... Emulating the IBM 1401, 1440, and 1460 on the IBM System/370 Model 155 Using OS, GC27-6945.

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OS - 1410/7010 INTEGRATED EMULATOR PROGRAM FOR IBM SYSTEM/370 MODEL 155

The 1410/7010 Emulator Program executes as a problem program under the control of the MFT and MVT options of OS on a Model 155. The Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). The combination of the emulator program and the compatibility feature enables programs written for the IBM 1410 and 7010 Data Processing Systems to be executed on the Model 155. Most 1410/7010 programs that are written in accordance with IBM Principles of Operation and are not time-dependent can be executed without modification. Emulation is provided for 1410/7010 systems with main storage sizes that range from 10,000 to 100,000 positions of core storage.

Card, tape, and disk programs are emulated. Two tape formatting programs are provided to convert 1410/7010 tape files to the standard Operating System format (spanned variable-length record format) for more efficient use by the emulator program and to connect tape files back to the original format. Also, a disk formatting program is provided to assist the user in converting 1410/7010 disk files to the standard Operating System format. Disk files must be converted before being used by the emulator program, while tape files can be in the original format or in the converted format. (A tape in original 1410/7010 format must be converted if its record length exceeds 32,755 bytes or if its data is in mixed densities.)

Highlights... Executes as a Job under OS (MFT and MVT), thus taking advantage of the multiprogramming facilities of the operating system, including better use of system resources.

Permits both 1410/7010 programs and System/370 programs to be placed in a single input job stream for processing on the Model 155. Thus, an "integrated" operation is provided for the installation, where other problem programs, such as utility programs, user jobs, compilers, or other "integrated" emulator programs can be executed concurrently.

Allows the user to initiate or increase non-emulation work, such as graphics or telecommunications applications, in installations with an emulation workload.

Enables the user to concentrate on the development of new applications, since he can reprogram gradually.

Job initiation, job scheduling, and resource allocation will be accomplished by the Operating System. Input/output activity is controlled through the use of the Operating System data management facilities. Device and data set control information is entered using the Operating System job control language and emulator control statements. Emulator control commands can be entered by the operator and provide direct communication with the emulator program.



Performance ... Internal speed (performance of CPU instructions only and weighted by frequency of use) of the integrated emulator is approximately 1.1 times that of the 1410/7010 stand-alone emulator for the System/360 Model 50. Throughput under emulation is not determined as much by the emulator as it is by the 1410/7010 program being executed. Throughput of such jobs is affected by the mix of CPU operations (executed by the compatibility feature and/or the emulator program), input/output operations (executed by the emulator program), and the amount of interference from higher-priority partitions or regions.

Minimum System Requirements ... For emulation, the Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). 1410/7010 devices are emulated by corresponding Model 155 input/output devices. There must be sufficient main storage for the option of OS used for the emulator functions required for the emulated system, and for the 1410/7010 program being emulated.

The main storage required for the emulator program ranges from a minimum of about 22K bytes to a maximum of about 44K bytes, depending on the system being emulated, the special features chosen, and the input/output devices supported. This does not include the main storage required for the operating system data management routines, the input/output buffers used by the emulator program, and the simulated 1410/7010 storage.

Supporting Publication ... Emulating the IBM 1410 and 7010 on the IBM System/370 Model 155 using OS, GC27-6946.

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OS - 7070/7074 INTEGRATED EMULATOR PROGRAM FOR SYSTEM/370 MODEL 165

The 7070/7074 Integrated Emulator Program executes as a problem program under the MFT or MVT Option of OS on a System/370 Model 165 equipped with the 7070/7074 Compatibility Feature. The program and compatibility feature enable the Model 165 to execute programs written for an IBM 7070/7074 Data Processing System. Most 7070/7074 programs that are written in accordance with IBM 7070/7074 Principles of Operation (A22-7003) and are not time-dependent can be executed without modification.

Highlights

- Executes the 7070/7074 program as a Job under OS, thus taking advantage of the operating system's multiprogramming facilities (including better use of system resources).

- Provides tape formatting programs for converting 7070/7074 tape files to standard Operating Systems (spanned variable-length) format for efficient data handling and for converting emulator output records in spanned variable-length format to original 7070/7074 format.
- Allows other problem programs, such as utility programs, user jobs, compilers, or additional 7070/7074 Integrated Emulator Programs to be executed concurrently in main storage.
- Provides for integrated operation of the installation by allowing both 7070/7074 programs and other OS programs to be placed in a single job stream for processing on the Model 165.

Job initiation, scheduling, and resource allocation are under control of OS. Input/output activity is controlled by the Operating System data management facilities. Control information about devices and data sets is provided through Job Control Language and Emulator Control cards. Emulator operator commands provide direct communications between the operator, the Integrated Emulator Program and 7070/7074 program.

Performance ... The internal speed (that is, the speed for performing 7070/7074 CPU instructions, weighted by frequency of use) of the Emulator is approximately three times the speed of the 7074 Data Processing System.

Minimum System Requirements ... The Central Processor of the Model 165 must be equipped with the 7070/7074 Compatibility Feature (7117). There must be sufficient Model 165 devices to correspond to the 7070/7074 devices on the system being emulated (in addition to devices required by the Operating System). There must be sufficient processor storage for the version of the Operating System being used (MFT or MVT), for the emulator functions needed for the 7070/7074 system being emulated, and for the 7070/7074 program being executed.

A minimum partition or region of approximately 188K bytes of processor storage is required. This estimate includes space for the Integrated Emulator Program, for simulated 7070/7074 storage, and for minimum input/output buffers.

Publications ... Emulating the 7070/7074 on the IBM System/370 Model 165 Using OS, Planning Guide GC27-6948.

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OS - 7080 INTEGRATED EMULATOR PROGRAM FOR THE IBM SYSTEM/370 MODEL 165

The 7080 Integrated Emulator Program executes as a problem program under the MFT or MVT option of OS/360 on a System/370 Model 165 equipped with the 7080 Compatibility Feature. The program and compatibility feature enable the Model 165 to execute programs written for the IBM 7080 Data Processing System. Most 7080 programs that are written in accordance with IBM 7080 Principles of Operation and are not time-dependent can be executed without modification.

Highlights

- Executes the 7080 programs as a job under OS thus taking advantage of the operating system's multiprogramming facilities (including better use of system resources).
- Provides tape formatting programs for converting 7080 tape files to standard Operating System (spanned variable-length) format for efficient data handling and for converting emulator output records in spanned variable-length format to original 7080 format.
- Allows other problem programs, such as utility programs, user jobs, compilers, or additional 7080 Integrated Emulator Programs to be executed concurrently in main storage.
- Provides for integrated operation of the installation by allowing both 7080 programs and OS programs to be placed in a single job stream for processing on the Model 165.

Job initiation, scheduling, and resource allocation are under control of OS. Input/output activity is controlled by the Operating System data management facilities. Control information about devices and data sets is provided through OS Job Control Language and Emulator control cards. Integrated Emulator operator commands provide direct communications between the operator, Integrated Emulator Program and 7080 program.

Performance ... The internal speed (that is, the speed for performing 7080 CPU instructions, weighted by frequency of use) of the Emulator is approximately two times the speed of the 7080 Data Processing System.

Minimum System Requirements ... The Central Processor of the Model 165 must be equipped with the 7080 Compatibility Feature (7118). There must be sufficient Model 165 devices to correspond to the 7080 devices on the system being emulated (in addition to devices required by the Operating System). There must be sufficient processor storage for the version of the Operating System being used (MFT or MVT), for the emulator functions needed for the 7080 system being emulated, and for the 7080 program being executed.

A minimum partition or region of approximately 232K bytes of processor storage is required. This estimate includes space for the Integrated Emulator Program, for the simulated 80K character 7080 memory, and for minimum input/output buffers.

Publications ... Emulating the 7080 on the IBM System/370 Model 165 Using OS, Planning Guide, GC27-6952.

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OS - 709/7090/7094/7094 II INTEGRATED EMULATOR PROGRAM FOR THE SYSTEM/370 MODEL 165

The Integrated Emulator Program executes as a problem program under the MFT or MVT option of OS/360 on a System/370 Model 165 equipped with the 7094 Compatibility Feature. The program and compatibility feature enable the Model 165 to execute programs written for the IBM 709, 7090, 7094, and 7094 II Data Processing Systems. Most 7090 series programs that are not time dependent can be executed without modification.

Highlights

- Executes the 7090 programs as a job under OS, thus taking advantage of the operating system's multiprogramming facilities (including better use of the system resources).
- Provides tape formatting programs for converting 7080 tape files to standard Operating System (spanned variable-length) format for efficient data handling and for converting emulator output records in spanned variable-length format to original 7080 format.
- The integrated emulator allows other problem programs such as compilers, utility programs, user jobs, real-time applications, or other 7094 Integrated Emulator Programs, to be executed concurrently in main storage.
- Provides for integrated operation of the installation by allowing 7090 series programs and other OS programs to be placed in a single job stream for processing on the Model 165.

Job initiation, scheduling, and resource allocation are under control of OS. Input/output activity is controlled by the Operating System data management facilities. Control information about devices and data sets is provided through OS Job Control Language and Emulator control cards. Emulator operator commands provide direct communications between the operator, the Integrated Emulator Program and the 7090 series program.



Performance ... The internal speed (that is, the speed of performing CPU instructions weighted by frequency of use) of the Emulator is approximately 1.5 times the speed of the 7094 II.

Minimum System Requirements ... The Central Processor of the Model 165 must be equipped with the 709/7090/7094/7094 II Compatibility Feature (7119). There must be sufficient Model 165 devices to correspond to the 7090 series devices on the system being emulated (in addition to the devices required by the Operating System). There must be sufficient processor storage for the version of the Operating System being used (MFT or MVT), for the emulator functions needed for the 7090 series system being emulated, and for the 7090 series program being emulated.

A minimum partition or region of approximately 374K bytes of processor storage is required. This estimate includes space for the Integrated Emulator Program, for simulated 7090 series core storage and for minimum input/output buffers.

Publications ... Emulating the 709, 7090, 7094, and 7094 II on the IBM System/370 Model 165 Using OS, Planning Guide GC27-6951:

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OS - DOS EMULATOR PROGRAM FOR IBM SYSTEM/370 MODEL 155

The DOS Emulator eases the transition for the DOS user migrating to OS MFT and OS MVT on the Model 155. The emulator program integrates DOS into OS. The emulator receives DOS jobs as input and produces output in the same format as found in DOS.

The emulator runs as a job under OS.

Highlights

Emulation enables the new OS user to execute his DOS programs without having to rewrite them.

No re-SYSGEN or link edit is required for DOS. The emulator supports the DOS multiprogramming environment.

The Emulator does not dedicate OS to emulating DOS. Regulator OS processing occurs concurrently with DOS emulation.

Restrictions ... The following IBM units and features supported by DOS are not supported by the emulator:

1259, 1412, and 1419 Magnetic Character Readers
1287, 1288 Optical Character Readers in document mode.

Model-dependent functions such as CS30, CS40, and the DIAGNOSE instruction.

The following programming items, permissible in the DOS environment, cannot be handled by the emulator:

The emulator programs for 1401/40/60 and 1410/7010 under DOS.

Modification, use or sharing of information in user CCWs between EXCP and WAIT.

Storage protection under DOS.

BTAM, QTAM, and Autotest.

Programs that:

Depend upon the HIO, RDD, WDD, and DIAGNOSE instructions for their operation.

Require more than 2 bytes of sense information.

Rely on known timing relationships of DOS.

Use PCI bit.

Minimum System Requirements ... The Emulator requires the OS/DOS Compatibility Feature 5450.

The minimum main storage required by the emulator program is 22K bytes. The OS partition or region must be large enough to contain the Emulator plus the DOS system being emulated. The DOS system includes the DOS control program and the DOS partitions.

There must be enough devices available to support both the DOS system being emulated and OS. Since devices must be dedicated to DOS, device sharing is not provided.

Publications

Program Planning for the DOS Emulator GC24-5076
DOS-OS Management Planning Guide GC24-5082
DOS-OS Implementation Guide (availability will be announced in a PRL).

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OS - RECOVERY MANAGEMENT SUPPORT FOR THE SYSTEM/370

To supplement the error recovery facilities of System/370, Recovery Management Support (RMS) is provided as a standard SYSGEN feature of the MFT and MVT versions of Operating System/360. This programming support increases the availability of the S/370 by minimizing the effect of machine malfunctions on jobs in process. RMS for the S/370 consists of two primary components, the Machine Check Handler (MCH) and the Channel Check Handler (CCH).

The Machine Check Handler determines if recovery from a malfunction was made by the CPU Hardware Instruction Retry or Error Checking and Correction (ECC) facilities of the S/370. If the machine corrects the malfunction and the system is in recording mode, MCH formats a recovery report. If the malfunction is not corrected by the machine facilities, MCH assesses the damage and attempts to repair

intermittent storage errors (not correctable by ECC) in refreshable locations in the Resident Nucleus, Link Pack area, and SVC transient areas. Problem program refresh is not supported for either successful or unsuccessful machine recovery. MCH collects and formats error information which is eventually written on SYS1.LOGREC to be used in maintaining the system.

The Channel Check Handler analyzes information which results from channel checks. CCH attempts to have the error corrected and decides whether or not the system can continue operation. In all cases, CCH formats appropriate error records to be recorded on the SYS1.LOGREC data set.

Performance ... RMS enhances the performance of OS by reducing the number and impact of system incidents resulting from CPU or channel malfunctions.

Use of an operating system that does not include S/370 RMS code may produce indeterminate results after a machine check occurs. If it becomes necessary to use such an operating system, S/370 may be stopped immediately upon error detection by operating with the check control switch set to the "HARD STOP" position. The advantage of automatic hardware retry is lost in this case since hard stop will occur prior to any attempts at retry.

Minimum System Requirements

On the Model 165 — Requires a maximum of 11.6K bytes of processor storage which includes the hardware logout area. This requirement may be reduced by 1K for each channel type not used. Secondary storage requirements total 39K bytes.

On the Model 155 — Requires a maximum of 7.5K bytes of processor storage which includes the hardware logout area. Secondary storage requirements total 29K bytes.

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OS - ON-LINE TEST EXECUTIVE PROGRAM (OLTEP)

The On-Line Test Executive Program (OLTEP), with the related On-Line Tests (OLTs) provide the means for testing input/output hardware components supported by OS concurrent with customer jobs.

Features

- Diagnose I/O errors.
- Verify I/O repairs and Engineering Changes.
- Allow dynamic adjustments.
- Customer Checking of I/O devices.
- Allows Integrity Protection of customer data.
- *Multiple device testing.
- *Data input facility.

- *Ability to define test run, using devices other than consoles.
- *Prompting available for defining Test Run.
- *Ability to Access SYS1.LOGREC.

*New Functions.

The On-Line Test Executive Program is a SYSGEN option. OLTEP is called and executed by standard Job Control Language. OLTEP runs as a job under OS, and as such competes for system facilities with other jobs in the system, when operating in a multiprogramming environment.

OLTEP executes all On-Line Tests on devices which have been VARYed off-line, with the exception of Teleprocessing Control Units (2701/2/3), and certain DASD OLTs which need not be VARYed off-line. OLTEP support for down-line terminal units is not provided.

Minimum System Requirements ... OLTEP operates with the minimum machine configuration required to support the Operating System plus at least one additional channel/device for testing. However, if testing a DASD that is part of the minimum support, an additional device for testing will not be required. Extra devices may be required if the on-line test data set resides on other than the system resident device, or if tests to be executed require data input.

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OS - 3330 SUPPORT FOR S/300 ANS S/370

OS MFT and MVT programming support will be provided for the 3330 Disk Storage Facility, including the two-channel switch. This support is an extension of OS device independent architecture. Improved performance will be derived from the improved capacity, access time, and data rate of the 3330 as well as from key system and data management support of the RPS and multiple requesting functions.

Highlights

- The 3330 is supported as a SYSRES device.
- Incorporation of 3330 device characteristics (including the RPS function) into SAM, DAM, PAM, and ISAM.
- Elimination of stand-alone seek for 3330 channel programs. (The 3330 automatically disconnects from the block multiplex channel on a seek.)
- TSO and TCAM on the 3330 will be supported.
- Error Recovery procedures use 3330 error detection and correction. OBR error recording will be supported.
- Job management support allocates to 3330 devices.



- OS utilities which do not use standard data management will be modified to support the 3330 (including the stand-alone DASD.)
- Those OS functions which use standard data management access methods will support the 3330. Language processors (COBOL, FORTRAN, PL/1, Assembler, RPG and ALGOL) will use the 3330.

The present level of EXCP Support remains unchanged. Each EXCP user must make changes to reflect new device characteristics.

The following system components will not utilize the RPS channel commands

- TSO Swap and OS Fetch. These are oriented to maximize retrieval rates rather than maximize channel utilization.
- TCAM support for intermediate storage of message queues.
- IEHATLAS
- Stand-alone DASD

The support of RPS and multiple requesting is transparent to the user. OS utilities can be used to convert data sets to 3336 disk packs. Normally, changes to a user's program are unnecessary except in those programs which:

- are dependent upon device or channel timing.
- are dependent upon the channel remaining busy for the duration of a chain of CCWs.
- are dependent upon specific device characteristics, e.g., cylinder and track references in BDAM algorithms.
- are to process I/O errors (ERPs)
- implement the file scan function, which is not available with the 3330.

Storage Requirements: Increased resident or dynamic storage is required for this support. An additional 10,000 bytes of secondary storage is required for the ISAM support modules for the first RPS device. The non-ISAM support modules for the first RPS device in the system requires approximately 25,000 bytes of secondary storage.

* * *

OS - 2305 SUPPORT FOR S/360 AND S/370

OS MF1 and MV1 support will be provided for the 2305 Fixed Head Storage Facility Models 1 and 2. The 2305 FHSF was previously announced for Attachment to System/360 Models 85 and 195. This additional programming support supercedes prior programming information.

OS 2305 support is an extension of OS device independent architecture. Improved performance will be derived from the improved capacity, access time, and data management support of the RPS and multiple requesting functions.

Highlights:

- The 2305 is a new model of a 2305 device.
- Incorporation of the 2305 device characteristic (including the RPS functions: ISAM, DAM, PAM, and ISAM).
- Error recovery operations use the 2305 error detector and corrector (ERR) error recording is supported.
- Job management support to allocate to 2305 devices.
- OS utilities which do not use standard data management will be modified to support the 2305 (including the stand-alone DASD.)
- Those OS functions which use standard data management access methods will support the 3330. This includes Language Processors (COBOL, FORTRAN, PL/1, Assembler, RPG and ALGOL), Utilities, etc.

The present level of EXCP support remains unchanged. Each EXCP user must make changes to reflect new device characteristics.

The following system components will not utilize the RPS channel commands:

- TSO Swap and OS Fetch. These are oriented to maximize retrieval rates rather than maximize channel utilization.
- IEHATLAS
- Stand-alone DASD

The support of RPS and multiple requesting is transparent to the user. OS utilities can be used to convert data sets to the 2305. Normally, changes to a user's program are unnecessary except in those programs which:

- are dependent upon device or channel timing.
- are dependent upon the channel remaining busy for the duration of a chain of CCWs.
- are dependent upon specific device characteristics, e.g., cylinder and track references in BDAM algorithms.
- are to process I/O errors (ERPs)
- implement the file scan function, which is not available with the 3330.

The 2305 will not be supported for TCAM.



Storage Requirements ... Increased resident or dynamic storage is required for this support. An additional 10,000 bytes of secondary storage is required for the ISAM support modules for the first RPS device. The non-ISAM support modules for the first RPS device in the system require approximately 25,000 bytes of secondary storage.

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OS - SUPPORT FOR THE IBM 3211 PRINTER ON THE S/360 AND S/370

Support for the IBM 3211 Printer will enable MFT and MVT users to direct output to this device using the Sequential Access Method.

Output to the 3211 Printer will be accomplished under BSAM and QSAM. Once the user has defined the data set, only a WRITE and CHECK or a PUT macro instruction need be executed each time a record is to be written. Page format can be controlled by the PRTOV and/or CNTRL macros and/or first character forms control.

Highlights

- Current 1403 programs using BSAM or QSAM are usable without logic changes.
- Use as a SYSOUT device.
- With 3211 support as a part of OS, a minimum of effort is required to take advantage of the Universal Character Set and tapeless carriage functions of the 3211 Printer on a data set level.
- A macro facility enables the user to load UCS and/or carriage control information dynamically.

This support allows rated device throughout, depending on such factors as: The train image being used, the OS environment in which the task will be operating, and the amount of user processing between output instructions.

Publications ... IBM System/360 Operating System. Planning for the IBM 3211 Printer Data Management Macro Instructions and Services. GC21-5008.

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DOS - ASSEMBLER D (14K VARIANT) SUPPORT OF THE IBM/SYSTEM/370 MODEL 155

Assembler D provides language support of the additional instructions found in the System/370 Model 155.

The IBM System/370 Model 155 contains an enhanced instruction set. DOS assembler support of this enhancement is provided for the following additional mnemonics:

Mnemonic	Definition
SRP	Shift and Round Decimal
ICM	Insert Characters under Mask
CLM	Compare Logical Characters under Mask
STCM	Store Characters under Mask
MVCL	Move Characters Long
CLCL	Compare Logical Long
STCK	Store Clock
*SCK	Set Clock
*STCTL	Store Control
*LCTL	Load Control
*STIDP	Store ID, Processor
*HDV	Halt Device
*STIDC	Store ID, Channel
*SIOFR	Start I/O Fast Release

*Privileged mode instructions.

This support also includes the capability to assemble the extended precision instructions (LRDR, LRER, AXR, SXR, MXR, MXDR, MXD), which occur as an optional feature on the Model 155.

The additional mnemonics are provided to allow use of the new instructions found in the IBM System/370 Model 155. These new instructions provide extensive character and data manipulating capabilities to the assembly language programmer.

Assembler language programs utilizing the new mnemonics can be assembled on S/360 and S/370. For execution S/370 is required.

DOS - ASCII

See section under OS support.

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DOS - 1401/1440/1460 INTEGRATED EMULATOR PROGRAM FOR THE IBM SYSTEM/370 MODEL 155

The 1401/1440/1460 Emulator Program is executed as a problem program under the control of DOS on the Model 155. The Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). The combination of the emulator program and the compatibility feature enables programs written for the IBM 1401, 1440, and 1460 Data Processing Systems to be executed on the Model 155. Most 1401/40/60 programs that are written

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in accordance with IBM Principles of Operation and are not time-dependent can be executed without modification. Emulation is provided for 1401/1440/1460 systems with main storage sizes that range from 1,400 to 16,000 positions of core storage.

Card, tape, and disk programs are emulated. Two tape formatting programs are provided with the emulator program: (1) to assist the user in converting his tape files before emulation so they can be used more efficiently by the emulator program, and (2) to convert tape files produced during emulation back to the 1401/1440/1460 format so they can be used on the original system.

Disk files must be converted before being used by the emulator program, while tape files can be in the original format or in the converted format.

In addition, the previous user of Emulator Programs on Model 30 and Model 40 (CS/30 and CS/40) may use his CS/30 or CS/40 formatted disk packs on the Model 155 Emulator without converting them. He will also be able to use his CS/30 or CS/40 input control cards stream.

Highlights

Executes under control of DOS thus taking advantage of multiprogramming facilities of the operating system, including better use of system resources.

Permits both 1401/1440/1460 programs and other DOS programs to be placed in a single input job stream for processing on the Model 155. Thus, an integrated operation is provided for the installation, where other problem programs, such as utility programs, user jobs, compilers, or other integrated emulator programs can be executed concurrently.

Enables the user to concentrate on the development of new applications since he can reprogram gradually.

Allows the user to initiate or increase non-emulation work, such as graphics or telecommunications applications, in installations with an emulation workload.

Jobs will be initiated by the DOS. Most input/output activity is controlled through the use of the data management facilities. Device and data file control information is entered using DOS job control language and emulator statements. Emulator control commands can be entered by the operator and provide direct communication with the emulator program.

Performance ... Internal speed (performance of CPU instructions only and weighted by frequency of use) of the integrated emulator is approximately 1.75 times that of the 1401/1460 stand-alone emulator for the IBM System/360 Model 40. Throughput under emulation is not determined as much by the emulator as it is by the 1400 program being executed. Throughput of 1400 jobs is affected by the mix of CPU operations (executed by the compatibility feature and/or the emulator program), input/output operations (executed by the emulator program), and the amount of interference from higher priority partitions.

Minimum System Requirements ... For emulation, the Model 155 must be equipped with the 140/40/60, 1410/7010 Compatibility Feature (3950). 1401/1440/1460 devices are emulated by corresponding Model 155 input/output devices. There must be sufficient main storage for the version of DOS used, for the emulator functions required for the emulated system, and for the 1401/1440/1460 program being emulated.

The main storage required for the emulator partition ranges from a minimum of 17,000 bytes needed to emulate a basic 1400 system with 1,400 positions of storage, a card reader, a card punch, and a printer to a maximum of 80,000 bytes needed to emulate a 1400 system with 16,000 positions of storage, maximum features, unit record devices including a console, six magnetic tape units, five 1311 disk storage drives, and a 1301 Disk Storage.

Publications ... Emulating the IBM 1401, 1440, and 1460 on the IBM System/370 Model 155 under DOS, GC33-2004.

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DOS - 1410/7010 INTEGRATED EMULATOR PROGRAM FOR THE IBM SYSTEM/370 MODEL 155

The 1410/7010 Emulator Program executes as a problem program under the control of DOS for the Model 155. The Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). The combination of the emulator program and the compatibility feature enables programs written for the IBM 1410 and 7010 Data Processing Systems to be executed on the Model 155. Most 1410/7010 programs that are written in accordance with IBM Principles of Operation and are not time-dependent can be executed without modification. Emulation is provided for 1410/7010 systems with main storage sizes that range from 10,000 to 100,000 positions of core storage.

Card, tape, and disk programs are emulated. Two tape formatting programs are provided with the emulator program: (1) to assist the user in converting his tape files before emulation so they can be used more efficiently by the emulator program, and (2) to convert tape files produced during emulation back to the 1410/7010 format so they can be used on the original system. Disk files must be converted before being used by the emulator program, while tape files can be in the original format or in the converted format.

Highlights

Executes under control of the DOS, thus taking advantage of the multiprogramming facilities of the operating system, including better use of system resources.

Permits both 1410/7010 programs and System/370 programs to be placed in a single input job stream for

processing on the Model 155. Thus, an "integrated" operation is provided for the installation, where other problem programs, such as utility programs, user jobs, compilers, or other "integrated" emulator programs can be executed concurrently.

Allows the user to initiate or increase non-emulation work, such as graphics or telecommunications applications, in installations with an emulation workload.

Enables the user to concentrate on the development of new applications, since he can reprogram gradually.

Jobs will be initiated by the DOS. Most input/output activity is controlled through the use of DOS data management facilities. Device and data file control information is entered using the DOS job control language and emulator control statements. Emulator commands can be entered by the operator and provide direct communication with the emulator program.

Performance ... Internal speed (performance of CPU instructions only and weighted by frequency of use) of the integrated emulator is approximately 1.1 times that of the 1410/7010 stand-alone emulator for the IBM System/360 Model 50. Throughput under emulation is not determined as much by the emulator as it is by the 1400 program being executed. Throughput of 1400 jobs is affected by the mix of CPU operations (executed by the compatibility feature and/or the emulator program), input/output operations (executed by the emulator program), and the amount of interference from high-priority partitions.

Minimum System Requirements ... For emulation, the Model 155 must be equipped with the 1401/40/60, 1410/7010 Compatibility Feature (3950). 1410/7010 devices are emulated by corresponding Model 155 input/output devices. There must be sufficient main storage for the version of the DOS used, for the emulator functions required for the emulated system, and for the 1410/7010 program being emulated.

The main storage required for the emulator partition starts at a minimum of 28,000 bytes needed to emulate a 1410 system with 10,000 positions of storage and unit record devices only. No meaningful maximum figure can be given.

Publications ... Emulating the IBM 1410 and 7010 on the IBM System/370 Model 155 under DOS, GC33-2005.

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DOS - RECOVERY MANAGEMENT SUPPORT FOR IBM SYSTEM/370 MODEL 155

Recovery Management Support for the IBM System/370 Model 155 consists of Machine Check Analysis and Recording and Channel Check Handling (MCAR/CCH) functions which attempt to recover from and/or otherwise reduce the

impact of machine malfunctions indicated by Machine Check interruptions or channel detected errors.

MCAR/CCH provides transparent recovery with a successful hardware retry and, when possible, system continuation on non-recoverable errors after job or task termination and comprehensive environmental recording. MCAR/CCH is specifically directed at increased availability by permitting system continuation in the event of intermittent CPU, main storage, or channel failures which would otherwise cause abnormal system termination.

CCH Error Recovery Procedures are provided for the following devices:

3215	1403	1443N1	2311	2314	2321
2400-Series Tape Drives			2540	2420	2501
1442					

Whenever possible, system continuation from an unscheduled interruption resulting from a machine check or channel detected error is attempted by retrying the malfunctioning operation; if retry is not possible or the malfunction continues, damage is assessed and an attempt is made to isolate it to a single problem program.

If damage to the problem program cannot be corrected, the affected task is terminated and system operation continues. System termination will follow when a non-recoverable error in privileged code occurs. Pertinent data is externally recorded on the Environmental Recording Data Set, IJSYSRC, which is currently used by the DOS OBR/SDR support. This accumulated error information may be displayed by the Environment Record Editing and Printing program (EREP). A minimum of ten tracks is required for this record file.

Performance ... MCAR/CCH is primarily a stand-by section of the control program. As such, it has little effect on throughput during normal system operation. In case of machine-check interruptions or channel detected errors, it gains control of the system and attempts system continuation from the error condition.

Use of a release that does not include S/370 RMS code may produce undeterminate results after a machine check occurs. If it becomes necessary to use such an operating system, S/370 may be stopped immediately upon error detection by operating with the check control switch set to the "HARD STOP" position.

Minimum System Requirements ... MCAR/CCH increases the size of the minimum resident supervisor by 4,200 bytes. MCAR/CCH support is automatically included at SYSGEN for the Model 155 along with OBR/SDR and OLTEP support. Including these features results in a minimum DOS supervisor size of 14K bytes.

Publications ... Planning Guide for the IBM System/370 Model 155 MCAR/CCH Function, GC24-5034.

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DOS - ON-LINE TEST EXECUTIVE PROGRAM (OLTEP)

The On-Line Test Executive Program (OLTEP), with the related On-Line Tests (OLTs), provides the means for testing of input/output hardware components supported by DOS. Systems concurrently with customer jobs.

Highlights

- Diagnosis of I/O errors.
- Verification of I/O device repairs and engineering changes.
- Integrity protection of customer data.
- * Multiple device testing.
- * Data Input facility.
- * Ability to define test run, using devices other than consoles.
- * Prompting available for defining Test Run.
- * Ability to access error recording information.
- * Storage management.
- * Privileged instruction execution.
- * ASCII data conversion.
- * Improved Interrupt Handling
- * Improved and expanded Human Interface.

* New features.

OLTEP is called and executed by standard Job Control Language. OLTEP runs as a job under DOS and, as such, competes for system facilities with other jobs in the system, when operating in a multiprogramming environment.

When OLTEP is used in a multiprogramming environment, throughput of customer jobs will be reduced during diagnostic testing. Since OLTEP is relegated to the background partition, it has lower priority.

OLTEP support for down-line terminal units is not provided.

OLTEP in quiesce mode will cause all jobs in the foreground partitions to be temporarily stopped.

Minimum Systems Requirements ... OLTEP operates with the minimum machine configuration required to support the Disk Operating System plus at least one additional device for testing. An exception to this requirement is noted as follows:

If testing a DASD that is part of the minimum support, an additional device for testing will not be required.

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DOS - SUPPORT FOR THE 3211 PRINTER OPTION

All control and operational features for 1403 are also available for the 3211 Printer. These functions are the CNTRL, PRTOV PUT, OPEN and CLOSE macros as well as the existing DTF SR DTF PR and DTF DI macros and their associated modules. These DTFs and modules will be compatible with those currently existing for 1403; i.e., programs using IOCS which currently use the 1403 will be able to use 3211 without modification. The 18 additional print position feature is supported by assembler macro only.

Using DTF PR logical IOCS Support, the user has the option of error passback from ERP on the UCS Parity Check, Set Data Check, and Equipment Check. The user also has the ability to load the Universal Character Set, Buffer (UCS Buffer), and Forms Control Buffer (FCB) as a job step.

Performance ... This support allows rated device throughput under the following conditions:

1. Uncontended, error free system.
2. The amount of user processing between subsequent output instructions does not slow machine throughput.

The 3211 will output 2000 lines per minute, single spaced, with a 48 character set, using Assembler Language DTF PR with 2 I/O areas.



PROGRAM PRODUCT ANNOUNCEMENT

IBM CONFIDENTIAL UNTIL 10:30 AM E.D.T. New York, New York, June 30, 1970

A BROAD RANGE OF NEW PROGRAM PRODUCTS AND EXTENSION FOR S/360 AND S/370 ARE BEING ANNOUNCED. THESE INCLUDE IMPORTANT FUNCTIONAL AND/OR PERFORMANCE IMPROVEMENTS OVER CURRENT PROGRAMS OR METHODS.

The new program products are highlighted below. Each S/360 and S/370 customer should be interested in several. Make sure that every S/370 sales effort includes a proposal for program products.

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PL/I

The new PL/I Optimizing Compiler offers major execution speed improvements for OS and DOS customer. It supports the full OS F-level language plus new features. Debugging aids and compilation speed are improved and communications with FORTRAN and COBOL are provided. The S/370 and S/360 Models 85 and 195 Extended Precision feature is supported by the OS version.

COBOL

Version 3 ANS Full COBOL for OS and DOS retains all features of previous versions and includes such new functions as ASCII support, a sorted cross-reference listing and flow trace facilities. Version 3 should be proposed to all users of Version 1, 2 or COBOL F.

FORTRAN

OS FORTRAN IV (H Extended) supports the S/370 and S/360 Models 85 and 195 Extended Precision Floating Point feature. It furnishes FORTRAN users with . . . increased floating point precision . . . expanded control and performance improvements in input/output operations . . . and an automatic precision increase feature which aids in FORTRAN conversion and simplifies the coding task.

Sort

The new OS Sort/Merge "OS-SM1" runs faster and provides more functions and is compatible with 360S-SM-023. OS-SM1 supports the new 3330 DASD and ASCII files. All customers who require these features or who sort more than 10 hours a month on disk are prime prospects.

ASCII

Extensive program product support of the American Standard Code for Information Interchange provides data interchange capability between systems. ASCII has been adopted as an American National standard.

Data Base/Data Communications

Information Management System/360 Version 2 is a major new program to build, maintain and access medium to large data bases under OS. IMS/360 allows both on-line message and conventional batch processing separately or concurrently. Version 2 will support the new 3330 DASD. This program product provides the means for gathering and exchanging information throughout your customer's environment.

Data Entry

DATA/360-OS is IBM's latest on-line data entry program product. It supports one to forty-eight 2260 display stations which makes possible reduced data entry costs, improved management control of data entry activities and increased operator productivity.

Simulation

GPSS V - OS and DOS are easy to use and easy to understand tools for modeling and examining the behavior of systems in the areas of engineering and management planning. GPSS V offers important new features such as the expanded use of auxiliary storage which removes restrictions on model size and an automatic cross-referencing dictionary for all symbolic entities. Compatibility with earlier GPSS/360 programs is maintained.

Compatibility

In addition to the program products announced today, all of those previously announced for OS and DOS will be supported on S/370 with the exception noted below. They will run on S/370 without user modification. (This support will enable current S/360 program product users to migrate to S/370 with a minimum of effort.)

The S/370 configuration must be compatible to that of the S/360 for which the programs were announced. Specifically, the S/370 will require the same I/O devices required to run these programs on S/360

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P70-69A

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or comparable S/370 devices used in accordance with the compatibility considerations specified for those devices (for example, operating procedures are different than for the 1403 since the 3211 has a tapeless carriage; the users randomizing routines for the 2314 will not automatically take full advantage of the track capacity of the 3330 disk storage facility.) Total core requirements on S/370 could vary from those required on S/360 according to the operating system used.

(Note: The OS Array Processing Subroutines, 5736-P72 are not supported. The 2938 Array Processor requires an RPQ for attachment to S/360. See the S/370 announcement (70-311) for information on the submission of RPQs.)

Assembler

Assembler H will include support for the new machine instructions of System/370 Models 155 and 165 with the first maintenance release in February 1971.

In addition to the new machine instructions, Assembler H will also support both the 2305 and the 3330 and allows their use as its single intermediate workfile. Assembler H operates on any System/370

model supported by OS/360 MFT or MVT providing that it meets the minimum machine configuration required for Assembler H as described in the sales manual. This program product provides significant enhanced performance as compared to IBM's other Assemblers. Availability is planned for February 1971.

Other Information

Monthly charges for previously announced program products remain unchanged.

Additional information is contained in the sales manual and letter, P70-69.

Program Product Design Objectives for each program product are available from Mechanicsburg; each branch office has been sent a limited supply.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of these Program Products follow new business practices.

Program Product Use During Customer Pre-Installation Testing . . . Refer to individual letters for availability.



John Fahey
WTC Director of DP Marketing

PL/I OPTIMIZING COMPILER AND LIBRARIES FOR OS/DOS

The new PL/I Optimizing Compiler significantly improves PL/I support under OS and DOS. It is a major advance in compiler design and incorporates the best features of a number of high-level language compilers.

The PL/I Optimizing Compiler produces fast object programs with improved diagnostics and compilation speeds. The source language is upwards compatible from the OS PL/I F language and contains several new features. Communications with FORTRAN and COBOL modules are provided to ease the introduction of PL/I.

Highlights

Extensive Optimization

Object code can be optimized to a much greater extent than previously possible for PL/I users. Three levels of optimization are: fastest object program execution, reduced object program storage space or fast compilation.

Advanced Level of PL/I

New features such as the DEFAULT statement, which allows the programmer to override standard defaults to suit his needs.

Extensive Debugging Aids

Clear and specific diagnostic messages at compilation and execution times, plus a wide range of options minimize the time and effort required for program checking.

Compilation Speeds

Compilation speeds without optimization will be equal to or better than those of existing IBM high-level language compilers when operating in similar environments.

ASCII Support

ASCII data sets can be created and accessed using sequential access methods.

FORTRAN, COBOL Communication

This compiler allows communication with FORTRAN and COBOL object modules, subject to certain rules.

Sales Prospects . . . All current users of PL/I D and F should be shown the advantages of this new compiler. In addition, customers who are primarily Assembly Language users are particularly good prospects. They should consider the ease of use, debugging facilities and potential for reduced maintenance costs offered by PL/I and the "Optimizer." PL/I further provides the economies of learning and maintaining one programming language for commercial and scientific work.

Advantages for DOS Customers . . . For the first time, the DOS customer can use the full power of the F-level PL/I language. He can start with any subset appropriate to his needs and grow to use the full facilities while operating with the same compiler. Furthermore, transition to OS is simplified because the same basic compiler and libraries are used on both systems.

Advantages for OS Customers . . . In addition to the advantages above, the OS version of the "Optimizer" supports the following system functions:

- TSO — aids are provided to invoke the compiler from a remote terminal under the Time Sharing Option of OS/360.

- TCAM — messages can be read and written from queues handled by the new telecommunications access method.

- Extended Precision Arithmetic— floating point calculations are optionally performed on fractions of approximately 33 decimal digits. The OS Extended Precision Simulator (see P-69) is automatically invoked if the instructions are not present on the machine.

Libraries . . . A set of subroutines, the PL/I Resident Library is required during link edit of a compiler output module. A second set, the PL/I Transient Library, is required for execution of the object program. Each library will be available as an IBM program product.

Monthly Charges

OS 5734-PL1	DOS 5736-PL1	Compiler	\$185
OS 5734-LM4	DOS 5736-LM4	Resident Library	\$ 40
OS 5734-LM5	DOS 5736-LM5	Transient Library	\$ 25

Availability of Compilers and Libraries . . . OS version September 1971 . . . DOS Version – July 1971.

Programming Service Classification . . . A.

No Programming RPOs will be accepted at this time.

For further details, see the attached pages.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the OS 5734-PL1 DOS 5736-PL1 Compiler, OS5734-LM4 DOS5736-LM4 Resident Library and OS 5734-LM5 DOS 5736-LM5 Transient Library Program Products are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . These Program Products may be provided in Test Centers free of charge for customer use during testing.

The Program Product Design Objectives are available from Mechanicsburg; each branch office has been sent a limited supply.

PL/I Resident Library

The PL/I Resident Library (OS-5734-LM4 DOS-5736-LM4) is a set of subroutines which are link-edited with object modules produced by the PL/I Optimizing Compiler. The output is later executed under DOS or OS, at which time the PL/I Transient Library is required. The routines perform the following functions:

- . Mathematical computations (SIN, COS, etc.).
- . Data type conversions (e.g., Pictured Character to Float).
- . Stream Input/Output.
- . System Control Program Interfaces (e.g., Initialization and Storage Management).

PL/I Transient Library

The PL/I Transient Library (OS-5734-LM5 DOS-5736-LM5) is a set of executable modules which are loaded dynamically during object program execution; thus object program space is conserved. The modules reside in the link library (or LINKPACK area) of OS or the core image library of DOS. They are loaded automatically when required and remain in core only as long as needed by the problem program.

The Transient Library contains:

- . Print and message modules of the error and interrupt handling subroutines.
- . Modules which open and close the files.
- . Record oriented input/output transmission modules.

Compatibility . . . A source program written for DOS PL/I D or OS PL/I F will, in general, produce identical results when compiled by the Optimizing Compiler. However, current users should be aware of the minor language changes and the differences in implementation characteristics. These are detailed in the Sales Manual and the General Information Manuals (for OS: GC33-0001, for DOS: GC33-0004).

Data sets are compatible between OS PL/I F and the OS Optimizer and DOS PL/I D and the DOS Optimizer. Object code is not compatible.

OS/DOS Differences . . . The PL/I source language implemented by the OS and DOS versions is essen-

tially the same. TSO, TCAM and Extended Precision support are new and are available under OS but not DOS. OS also provides multitasking support and certain additional record-handling capabilities.

Minimum Systems Configuration . . . The compiler itself requires at least 44K bytes of storage under DOS and 50K bytes under OS at compile time. This is exclusive of storage required by the operating system control program. Additional main storage can be used to reduce compilation time. The Floating Point and Decimal instruction sets are required.

Under DOS, auxiliary storage must be reserved at an average rate of 150 bytes per source statement to be compiled (after expansion by the compile time preprocessor) or for (partition size minus 34,000) bytes, whichever is larger.

Performance . . . Compile speed varies with the core available, the compiler options used and the complexity of the PL/I language features used. However, a 500 statement program might be expected to compare as follows to OS PL/I F Version 5 and DOS PL/I D Version 4 (assume minimum compiler options, no system overhead).

	OS	DOS
System	360/65	360/40
Core available to compiler	96K	94K
Optimizer time	30 sec.	3 min.
OS PL/I F-DOS PL/I D	38 sec.	8-10 min.

If optimization is specified, compilation times will increase by approximately 25% on the average and by up to 100% for some types of programs.

Execution Time . . . For a specific limited set of scientifically oriented programs, our estimates indicate an average reduction of 40% in execution time compared to PL/I F Version 5 and PL/I D Version 4 when optimized for fastest object program execution. Similar estimates for commercially-oriented programs indicate an average reduction of 25% in execution time. *These estimates assume that no time is used in waiting for input/output operations.* In none of the programs did the optimizer-produced code run slower than the PL/I F or D object code.

Performance improvement is, in general, application dependent. Users must evaluate their own programming to determine actual throughput benefits. Maximum reduction in execution time can be expected for programs that are highly iterative and/or make heavy

use of string operations or structure and array assignments.

Object Space

· OS "Optimizer" vs. PL/I F . . . At all optimization levels, object space requirements should not increase, with up to a 20% saving when optimization for reduced space is specified.

DOS "Optimizer" vs. PL/I D . . . When optimized for best space utilization, up to a 10% saving may be realized. When the other optimization options are specified, object space requirements versus PL/I D may increase up to 20%.

Publications . . . PL/I Optimizing Compiler General Information Manual (OS-GC33-0001, DOS-GC33-004), Program Product Design Objectives (OS Compiler GC33-0013, OS Resident Library GC-33-0014, OS Transient Library GC33-0015), Program Product Design Objectives: (DOS Compiler GC33-0010, DOS Resident Library GC33-0011, DOS Transient Library GC33-0012).

Publications Support: Initial Copies of the Unlicensed Basic Program Product offering are being shipped through DAPS. Additional copies of these manuals and other support literature are available from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publications Release Letter for actual dates of availability.

To be announced by a Publication Release Letter

- DOS PL/I Language Reference Manual
- OS PL/I Language Reference Manual

OS FORTRAN IV (H EXTENDED) COMPILER OS FORTRAN IV LIBRARY (MOD II)

With major extensions to the IBM FORTRAN IV Language, the new OS FORTRAN IV (H Extended) Compiler combines proven object code performance and optimization with Extended Precision Support on the System/370, System/360, and new Asynchronous I/O capability.

FORTRAN is most widely used in the scientific and engineering communities for expressing and solving problems which are numeric in nature.

Aerospace, Manufacturing, Process, Communications, Government, Education and Medical are among the industries which experience the need for greater flexibility in precision and FORTRAN input/output operations.

These requirements manifest themselves in the following applications and techniques among others:

- Seismology
- Chemical Modeling
- Environmental Studies
- Economic Modeling
- Systems Simulation
- Management Sciences
- Nuclear Physics
- Flight Simulation
- Biomedical Systems
- Filtering Techniques
- Structural Analysis
- Astrophysics

Primarily designed for problems of this type, OS FORTRAN IV (H Extended) incorporates the new compiler features and benefits highlighted below:

Extended Precision Floating Point

Direct support of the Extended Precision Feature on System/370 and Models 85, 195 of System/360. Other System/360s are supported automatically through FORTRAN by the OS Extended Precision Simulator (See P-XX).

Automatic Precision Increase

Provides the option to automatically convert floating point calculations from single to double precision and/or double to extended precision at compile time without reprogramming.

Automatic Function Select

Allows the user to reference the large set of library routines and built-in functions — using a set of generic names. Automatic matching of function type to data type at compile time.

Asynchronous Input/Output

Provides the performance gains of increased overlap of computing when reading or writing large volumes of unformatted sequential data.

List-Directed Input/Output

Input/output is provided for formatted data without specifying a FORMAT statement.

EXTERNAL Statement Extension

Provides an easier means of including user written library functions and routines.

Improved and Expanded Library

New data conversion routines for all data types which provide greater accuracy in conversions. Provides support for extended precision and the new forms of I/O.

ASCII Support

Allows the user to read and create tape data sets written in the American National Standard Code for Information Interchange.

Sell the features of this new compiler and library to the following:

- Users with truncation and round-off error.
- Users with large volumes of data causing large amounts of I/O wait time.
- Users converting to System/360 and System/370.
- System/370 prospects, System/360 Model 85 and 195 customers.
- System/360 users for backup to the Models 85 and 195.
- FORTRAN users seeking greater flexibility in expressing the problem to be solved.

Availability ... March 1971.

Programming Service Classification ... A.

Monthly Charge

OS FORTRAN IV (H Extended) Compiler (5734-FO3) \$260

OS FORTRAN IV Library (MOD II) (5734-LM3) \$ 90

The Program Product Design Objectives (GC28-6846 and GC28-6847) are available from Mechanicsburg; each branch office has been sent a limited supply.

No programming RPOs will be accepted at this time.

Publications Support: Initial Copies of the Unlicensed Basic Program Product offering will be shipped through DAPS. Additional copies of these manuals and other support literature will be from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publications Release Letter for actual dates of availability.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the OS FORTRAN IV (H Extended) Compiler (5734-FO3) and OS FORTRAN IV Library (MOD II) (5734-LM3) Program Products are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . These Program Products may be provided in Test Centers free of charge for customer use during testing.

See the following pages for additional details.

The following information is provided to help you discuss the OS FORTRAN IV (H Extended) Compiler with your FORTRAN customers. See the sales manual for details on features not discussed here.

The two most significant features of the OS FORTRAN IV (H Extended) Compiler are the ability to handle extended precision arithmetic and to perform Asynchronous I/O. In addition, the Library (MOD II) is a superset of the Library (MOD I) announced with TSO. This means that FORTRAN (H Extended) programs compiled in the background can be executed under TSO in the foreground and data can be entered and displayed at the terminal using List-Directed I/O.

Extended Precision Floating Point Support

Allows the user to define the data lengths, REAL *16 and COMPLEX *32. Computations are done using 112 bits of significance - the equivalent of 33 to 34 decimal digit precision. Exponent range is unchanged. Use of the Extended Precision Instruction set minimizes the effect that these operations have on processing speed.

The following machines have extended precision hardware instructions for ADD, SUBTRACT, and MULTIPLY: S/360 Models 85, 195; S/370 Models 155 (optional) and 165. On CPUs not equipped with the Extended Precision Feature, flexibility and backup are attained by performing the calculations using the OS Supervisor Extended Precision Simulation (P-XX). Extended Precision Divide is simulated in both cases. The simulation is transparent to the user.

Asynchronous Input/Output

New I/O statements are implemented which provide the FORTRAN user with a means of achieving greater efficiency when doing unformatted I/O. It can be used when the data area is contiguous and is especially beneficial when the logical records to be processed are long and span two or more physical records.

Asynchronous I/O achieves the advantages of short list processing efficiency with the flexibility of implied DO notation and overlap of I/O with processing.

This feature uses Subtasking provided under MVT and MFT (ATTACH option). Records written using this method can be read by regular FORTRAN I/O and data sets can be reprocessed in the same or subsequent job steps.

Object Program Performance Characteristics

Extended Precision

The difference in object code performance of a program containing extended precision operations vs. one without is a function of the number of extended precision operations contained. With extended precision hardware, every extended precision calculation (except divide) will take approximately four times longer than the corresponding single or double precision calculation. Extended divide, because it must be simulated, will take approximately 15 times longer than the corresponding long or short divide.

When simulating the extended precision hardware, it is estimated that the extended precision calculations will take approximately 20 times longer than the corresponding long or short operation.

Asynchronous I/O

The performance gains vary according to the program. A program using small arrays for I/O with little computation may not show any improvement. A program using very large arrays for I/O and a large amount of computation will find a significant decrease in both CPU and job step time.

The following sample programs were tested to demonstrate the performance characteristics of the asynchronous I/O feature in a single job environment.

Case 1 used FORTRAN H option 2 with implied DO processing; Case 2 used the asynchronous I/O prototype with short list processing.

Program A

S/360 Model 50 CPU . . . Data set on 2314 . . . Logical record length . . . Data Set containing 101 logical records . . . Array in main storage 37,500 elements of type REAL *4 . . . Command chaining . . . This program reads each record into a part of the array, calculates the square root of every tenth

element and writes the resulted array onto a data set residing on a 2314.

	<i>Case 1</i>	<i>Case 2</i>	<i>RATIO</i>
Total elapsed time	217.57*	52.06	4.2
CPU time	201.32	36.53	5.5

* All performance figures represent time expressed in seconds.

Program B

Same task as Program A ... S/360 Model 65 CPU ... Data Set on 2314 ... Logical record length = 100,000 bytes ... Data Set containing 101 logical records ... Array in main storage 125,000 elements of type REAL *4 ... Command chaining.

	<i>Case 1</i>	<i>Case 2</i>	<i>RATIO</i>
Total elapsed time	203.00	62.95	3.2
CPU time	161.75	27.96	5.7

Program C

S/360 Model 65 CPU ... Data set on 2314 ... Logical record length = 30,000 bytes ... Data set containing 101 logical records ... Array in main storage 37,500 elements of type REAL *4 ... Command chaining ... This program reads each record into a part of the array, adds a constant to each element and writes the resulting array onto a data set residing on a 2314.

	<i>Case 1</i>	<i>Case 2</i>	<i>RATIO</i>
Total elapsed time	80.75	19.25	3.1
CPU time	48.55	7.48	8.2

IBM SYSTEM/360 OPERATING SYSTEM SORT/MERGE

All OS/360 customers who sort on disk more than ten hours a month, who will use the IBM 3330 Disk Storage facility for sorting, or who must sort ASCII files are prime candidates for OS-SM1, a new program product (5734-SM1).

This program product enhances the functions and performance of 360S-SM-023, while remaining compatible with it. All sort and merge applications which run on 360S-SM-023 will run on OS-SM1 without changes to the control statements or to the interface with user programs.

Highlights

- . Improved performance for many sorting applications.
- . Support of ASCII formatted files and collating sequence.
- . Support of 3330 Disk Storage facility.
- . Expanded user Exit Capabilities.
- . Expanded Checkpoint/Restart Facilities.

Availability . . . OS-SM1 (excluding ASCII and 3330 support) — January, 1971; OS-SM1 (with ASCII support) — March, 1971; and OS-SM1 (with ASCII and 3330 support) — concurrently with the first shipment of the 3330. The planned availability of the 3330 is August 1971.

Monthly Charge . . . \$60.

Programming Service Classification . . . A.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the IBM System/360 Operating System Sort/Merge, 5734-SM1 Program Product are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . This Program Product may be provided in Test Centers free of charge for customer use during testing.

Additional Information

An initial supply of the Program Product Design Objectives for OS-SM1 (3C33-4003) will be sent to each DP branch office.

Programming RPOs will not be accepted at this time.

Use the material in this letter to justify SM1 to your OS customers. Read on for additional details and supporting information. Ordering instructions will follow in the sales manual pages.

The OS Sort/Merge 5734-SM1 program is an enhancement of OS Sort/Merge 360S-SM-023. New functions have been added and the performance has been improved for some applications.

New Functions

- . Support of 3330 Disk Storage Facility.
- . Extended Use of Exits.

Allows the use of all User Exits when Sort is dynamically invoked.

- . Concatenation of SORTIN.

The Input data sets can be concatenated even if they reside on "unlike" devices.

- . Modified CORE-parameter.

OS Sort/Merge 5734-SM1 will use all available core if the user specifies MAX as the CORE-parameter value. This saves the user from recalculating the amount of CORE needed on different installations or in different regions or partitions.

- . Expanded Parameter List E61.

The parameter list passed to E61 is expanded by one fullword to include the length of the control field. Previously only the number and address of the extracted control field was contained in the parameter list.

- . Expanded Standard for User Exit Names.

A user library may contain several exit routines having unique names which may connect to the same exit point. In 360S-SM-023 all routines pointing at the same exit point had to have the same name as the exit point, even if they were not to be Link Edited.

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Checkpoints in Merge.

Checkpoint/Restart is now supported in Merge applications at End of Volume on SORTOUT. Checkpoint/Restart in sorting applications remains unchanged.

Print Control Statements.

The user will now have an option to print his Sort/Merge control statements at either the system console or on SYSOUT.

ASCII Formatted Files.

ASCII Support is provided as indicated in the table below:

Input	Collating Sequence	Output
EBCDIC	EBCDIC	EBCDIC
EBCDIC	ASCII	EBCDIC
EBCDIC	ASCII	ASCII
ASCII	ASCII	ASCII
ASCII	ASCII	EBCDIC
ASCII	EBCDIC	ASCII
EBCDIC	EBCDIC	ASCII
ASCII	EBCDIC	EBCDIC

Performance Improvements ... The following changes have been made to achieve improved performance:

Support of 3330

The 3330 disk storage facility is used as Intermediate storage device for both the Balanced and the crisscross distribution techniques.

Increased Merge Order for the Balanced Disk Distribution Technique.

The maximum merge order is increased from 16 to 63.

Optimization Routine.

The new improved optimization routine has been designed to optimize the internal Sort factors such as string length, merge order, blocking and number of buffers. To obtain improved performance from the optimization routine, an accurate file size should be specified.

Accurate Calculation of NMAX.

This means that intermediate work storage may be more efficiently used mainly for tape Sorts with variable length records.

Optimize Storage Allocation in MVT.

OS SM1 uses a new method to allocate buffers and work areas. This means less fragmentation of core and decreased system overhead time.

Improved Write Channel Programs.

This function will improve the performance when using the balanced disk technique for fixed length records.

These changes make the following performance improvements possible:

Sort Performance Using 3330.

The 3330 support will be implemented for both the balanced and the crisscross distribution techniques. The maximum number of 3330 disk drives that can be used is 17 for the crisscross technique and 6 for the balanced technique.

Due to the improved access times and larger track capacity of 3330 compared with 2314, a performance improvement is obtained when sorting on 3330. Additional performance information will be available 4Q70.

The file size capacity for a 3330 Sort is about 3.5 times larger than the capacity for a 2314 Sort using a corresponding number of disk packs.

Sort Performance for Balanced Disk Technique.

Performance improvements are expected for the balanced distribution technique using 2314, 2311 or 2301 for intermediate storage. When compared to 360S-SM-023, improvements averaging 13% have been measured for a set of 32 test cases. The core storage used by the Sort Program in these test cases was:

Device	Core
2311	≤ 50K
2314	≤ 90K
2301	≤ 100K

When more core storage was used the improvement averaged 7% for a set of 34 test cases. A prerequisite for these results was that an exact or near exact file size was specified.

The test cases used fixed length records varying from 36 to 600 bytes, file sizes varying between 2.5K and 125K records, core sizes varying within the above stated limits and blocking factors varying from 1 to 30. The input file consisted of records with 1 to 2 randomly generated control fields with character data.

All performance measurements were made in a PCP environment mostly on a Model 65, but also on a Model 50 and a Model 40.

Timing Estimates.

IBM Program Product, System/360 Operating System Sort/Merge Timing Estimates (GC33-4008), is planned to be available 4Q70.

ASCII

Extensive support is provided in Program Products under DOS and OS for the American National Standard Code for Information Interchange. The purpose of the standard is to permit the interchange of data between similar and dissimilar systems.

The publication, Planning for the Use of Information Interchange Standard, OS DOS and TSS, GC28-6756 is available from Mechanicsburg. It provides descriptive information on the support to be provided in the systems and program products.

See P70-XX for details on systems support on OS, DOS and TSS.

Performance . . . When ASCII data sets are specified as input and/or output some degradation in performance should be expected.

The prime prospects for ASCII program products are customers requiring interchange of data between dissimilar systems, particularly federal customers, ASCII has been adapted as a federal standard.

The following program products announced elsewhere in this letter provide support for ASCII.

- . DOS American National Standard Full COBOL Compiler Version 3 (5736-CB2)
- . DOS American National Standard Full COBOL Object-time Library (5736-LM2)
- . DOS PL/I Optimizing Compiler (5736-PLI)
- . DOS PL/I Transient Library (5736-LM5)
- . OS/360 IBM American National Standard Full COBOL Compiler Version 3 (5734-CB1)
- . OS PL/I Optimizing Compiler (5734-PL1)
- . OS PL/I Transient Library (5734-LM5)
- . OS Sort/Merge (5734-SM1)

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the DOS FORTRAN IV Library ASCII Support, (5736-LM1), OS TSO Data Utilities, (5734-UT1), DOS American National Standard Subset COBOL Compiler and Library, (5746-CB1), DOS ASCII Magnetic Tape Utilities (5736-UT2), OS/360 FORTRAN IV Library (Mod I), (5734-LM1) and OS Data Set Utilities, (5734-UT2) Program Products are available for a charge at the applicable skill classification rate.

Program Product Use During Customer Pre-Installation Testing . . . These Program Products may be provided in Test Centers free of charge for customer use during testing.

DOS FORTRAN IV Library ASCII Support (5736-LM1)

DOS FORTRAN IV Library ASCII Support provides the means of creating and processing magnetic tape files recorded as ASCII character data.

Highlights

- . FORTRAN IV (F Level) programs support the processing of ASCII files at execution time.
- . Diagnostics are provided to detect inconsistent or invalid requests.
- . Sequential Formatted data sets are supported for U-type records.
- . Files may be labeled or unlabeled as defined in the ANSI label standard.
- . The optional buffer offset feature is supported for input files.
- . The block size on tape may be between 18 and 2048 bytes to provide for more tape capacity and performance gain for EBCDIC as well as ASCII files.

Availability . . . January 1971.

Monthly Charge . . . \$50.

Programming Service Classification . . . A.

Compatibility . . . The programmer specifies an ASCII file by issuing a call to the DOS FORTRAN library routine OPSYS from his program. The programmer may have to remove this information before using his program on another system.

Publications . . . Program Products Design Objectives – DOS/360 FORTRAN IV Library ASCII Support, GC28-8193.

OS TSO Data Utilities (5734-UT1): (See DP letter 269-104 for earlier announcement material).

The COPY Utility will translate an ASCII data set to an EBCDIC data set and vice versa. The MERGE Utility will merge ASCII tape data sets.

Availability . . . September 1970.

Monthly Charge . . . \$145.

Programming Service Classification . . . A.

Publications . . . Program Product Design Objectives IBM System/360 Operation System TSO Data Utilities (5734-UT1), GC28-6750-2.

DOS American National Standard Subset COBOL Compiler and Library (5746-CB1) (See P70-25 for earlier announcement material).

The American National Standard Subset COBOL Compiler now provides for:

- . ASCII character data on magnetic tapes created or processed by COBOL object programs.
- . American National Standard Labels on ASCII tapes created or processed by COBOL object programs.
- . The capability of describing separate leading or trailing signs to facilitate the use of signed numeric data forms.

Availability . . . June 1971.

Monthly Charge . . . \$150.

Programming Service Classification . . . A.

Minimum Systems Configuration . . . There are no additional requirements beyond those announced for additional requirements beyond those announced for ASCII support in the Disk Operating System and those already announced for the compiler.

Publications . . . Program Product Design Objectives — DOS/360 American National Standard Subset COBOL Compiler, GC28-6401.

DOS ASCII Magnetic Tape Utilities (5736-UT2)

In addition to the function of the present DOS Utility Programs, the DOS ASCII Utilities allow for:

Creation and checking of American National Standard Labels.

Automatic translation from ASCII to EBCDIC on input and from EBCDIC to ASCII on output.

Reading and writing of ASCII D-type variable-length blocked or unblocked records.

Use of padding characters on input files in unused end positions of physical records.

Availability . . . December 1970.

Monthly Charge . . . \$100.

Programming Service Classification . . . A.

Minimum Systems Configuration . . . The DOS ASCII Magnetic Tape Utilities operate in a minimum partition of 10K under the Disk Operating System with ASCII support and with a supervisor of 8K or larger.

Publications . . . Program Product Design Objectives — DOS/360 ASCII Magnetic Tape Utilities, GC33-5000.

OS/360 FORTRAN IV Library (Mod I) (5734-LM1)

FORTRAN Library Support will be available to read and write formatted ASCII magnetic tape data sets at object time. An ASCII magnetic tape data set with or without standard labels will be processed for D, F or U type records.

Availability . . . March 1971.

Monthly Charge . . . \$65.

Programming Service Classification . . . A.

Publications . . . Program Product Design Objectives IBM System/360 Operating System FORTRAN IV Library (Mod I) (5734-LM1), GC28-6844-1.

DOS Tape and Disk Sort/Merge Program (5736-SM1) (See P70-36 for earlier announcement material)

The DOS Tape and Disk Sort/Merge Program announced in P70-36 now provides the DOS/360 user the ability to process either EBCDIC or ASCII data sets. Specific enhancements to this program include the following:

An EBCDIC input tape can be sorted according to either ASCII or EBCDIC collating sequence.

ASCII character data input is allowed for sorts and merges and is collated in an ASCII sequence.

The capability of describing separate leading or trailing signs.

The ability to process input files created with the use of FEOVD macro provides compatibility for the COBOL user of the UNIT option of the CLOSE verb.

Availability . . . December 1970.

Monthly Charge . . . \$80.

Programming Service Classification . . . A.

Minimum Systems Configuration . . . In addition to the requirements announced, the 2400 Series Magnetic Tape Unit required for tape input/output must handle 9-track 800 CPI NRZI magnetic tape if ASCII interchange tapes are used.

Publications . . . Program Product Design Objectives — DOS/360 Tape and Disk Sort/Merge Program, GC28-6752-1, is available from Mechanicsburg.

OS Data Set Utilities (5734-UT2)

ASCII support in the 4 data set utilities IEBGENAS, IEBCOMAS, IEBTPAS and IEBUPDAS will process ASCII tape data sets.

Highlights . . . This support provides the customer with the following capabilities:

Accept a data set written in ASCII format and translate it into EBCDIC format or vice versa (IEBGENAS).

Compare an ASCII data set with another ASCII data set or an EBCDIC data set (IEBCOMAS).

Print or punch the contents of an ASCII data set in EBCDIC format (IEBTPAS).

Update fixed or fixed-block physical sequential ASCII data sets (IEBUPDAS).

Process unlimited number of user labels.

Availability . . . March 1971.

Monthly Charge . . . \$100.

Programming Service Classification . . . A.

Minimum System Configuration . . . This program product requires a minimum partition or region of 25K bytes of main storage in addition to that required by the operating system.

Publications . . . Program Product Design Objectives IBM System/360 Operating System Data Set Utilities Support for ASCII Program Product (5734-UT2).

Publication Support: Initial Copies of the Unlicensed Basic Program Product offering will be shipped through DAPS. Additional copies of these manuals and other support literature will be from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publication Release Letter for actual dates of availability.

**INFORMATION MANAGEMENT SYSTEM/360
(IMS/360) (5734-XX6) VERSION 2 IS
ANNOUNCED**

Today IBM announces Information Management System/360 Version 2 as a new Data Base/Data Communication program product for both System/360 and System/370. In addition, support for the new 3330 disk storage facility is provided.

Highlights

The following is provided in addition to the facilities available in IMS/360 Version 1.

The Data Base Support.

- . Two new data base access methods for indexed and direct access to data.
- . Improved direct access device space utilization.
- . Common data retrieval through multiple access techniques.

The Data Communication Support.

- . 2260 Model 2 Display Station (remote environment).
- . 1030 Data Collection System.
- . 1050 Data Communication System
- . 2740 Communication Terminal Model 2
- . 2780 Data Transmission Terminal
- . Conversational Terminal Operation

The Recovery support, already a strong feature of IMS/360 Version 1 has been further improved with:

- . Data base recovery in the batch mode.
- . Increased efficiency in data base recovery.
- . System fail-soft function.

Upward user program compatibility from Version 1 to Version 2 is also provided.

IMS/360 Version 2 may be ordered with Data Base support only or combined Data Base/Data Communication support.

Availability . . . Planned availability is for March 1, 1971.

Programming Service Classification . . . B. IMS/360 Version 2 will support the 3330 disk storage facility concurrent with OS support of the device which is now planned for August 1971.

To assist you, IMS/360 proposal and installation aids are now available in the MINIPERT Master Library.

Plan to read the IMS/360 General Information Manual (GH20-0765) which will be shipped through DAPS this week. Tell your customers about the advantages of IMS/360 Version 2.

This is an outstanding opportunity for you to develop comprehensive data base/data communication plans with your customers and prospects.

Monthly Charge

Data Base System monthly charge is \$500. This basic capability for data base processing in a batch mode inclusive of data base reconstruction.

Data Communication Feature monthly charge is \$560. This feature may be added to the Data Base System (a prerequisite) to provide a total system capability for both message and batch processing.

Customer Advantages

IMS/360 provides your customer with an integrated set of facilities which can significantly enhance his ability to install transaction oriented applications. Some of the advantages realized are:

Reduction of redundant data through the integration of files into a common data base.

Consistency of information through use of common data in your customer's organization.

Improved response through rapid access to common data from a variety of terminals.

Increased programming productivity through the separation of application programming from complex systems programming and file organization.

Customers can develop on-line applications directly or as an evolutionary extension of their batch environment.

IMS is an accepted cross-industry program product successfully installed in Aerospace, Manufacturing, Banking, Insurance, Petroleum and Steel companies.

Sell the following proven IMS capabilities with confidence:

- Extensive Data Base Support
- Data Communication support
- Data Base recovery capability
- Terminal and password security
- High level language interface

Data Base Support

Your customer will now be able to design a data base ranging from simple logical structures to complex hierarchical data structures.

The data base support of IMS/360 Version 1 consists of sequential and index sequential access to hierarchical data structures and is called Hierarchical Sequential organization. IMS/360 Version 2 data base support has been expanded to include:

More efficient handling of index sequential record overflow with blocked overflow records.

Direct access and index direct access to hierarchical data structures through a new organization called Hierarchical Direct. This permits the re-use of space made available when records are deleted.

Direct and symbolic key addressing allows hierarchical data structures to be interrelated. This ability facilitates nonredundant data storage and permits data access through the use of multiple retrieval criteria.

Concurrent update usage of a data base by multiple users in the communication environment.

Data base recovery is supported in both the batch and communication systems.

Data Communication Support

The terminal support of IMS/360 has been expanded and now includes:

- 1030 Data Collection System.
- 1050 Data Communication System (all components)
- 2260 Display Station, Model 1 and 2 (remote environment)
- 2740 Communication Terminal, Model 1 and 2.
- 2780 Data Transmission Terminal.

In addition, conversational terminal operation, expanded message editing, and expanded terminal diagnostic facilities are provided. Conversational terminal operation allows one or more interchanges between a terminal operator and one or more application programs. User data may be stored by IMS/360 between interchanges in the conversation.

Recovery Support

The recovery support of IMS/360 has been expanded and now includes:

Checkpoint/Restart capability for Data Communication - Data Base system environment.

For greater efficiency, reconstruction of data bases is now accomplished using a log of physical, rather than logical, data base modifications.

Improved fail-soft functions with user procedural options provided through the use of OS/360 services. STAE and SPIE.

Additional Information

An initial supply of the Program Product Design Objectives (GH20-4067) has been sent to each DP branch office. The sales manual text provides you with prices and other details.

No programming PRQs will be accepted at this time.

For further information, contact your Field Systems Center.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the Information Management System/360 (5734-XX6) Version 2 Program Product are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . This Program Product will not be provided in Test Centers free of charge for customer use during testing.

Publications Support: Initial Copies of the Unlicensed Basic Program Product offering will be shipped through DAPS. Additional copies of these manuals and other support literature will be from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publications Release Letter for actual dates of availability.

OS DATA ENTRY

DATA/360-OS (5734-XS3) makes it easy for users of System/360 Operating System to enjoy the advantages of on-line data entry. For most of your customers who have eight or more keypunches and/or verifiers, DATA/360 can probably reduce data entry cost, improve management control of data entry activities and increase operator productivity.

DATA/360-OS has several significant extensions to the DOS version which are highlighted below:

- . Up to 48 2260s
- . Paging facility for insertion and deletion of records
- . User exit in edit mode for an application-oriented editing routine
- . Macro generation of the on-line program
- . Comprehensive production statistics
- . Simultaneous data entry and data extraction on any system
- . Supports 2311 or 2314 Disk Files
- . Seven formats per document
- . Twenty four fields per format

Availability . . . DATA/360-OS (without 3330 support) – March 1, 1971 . . . DATA/360-OS (with 3330 support) – concurrently with OS support of the 3330 which is planned for August 1971.

Monthly Charge . . . \$100.

Programming Service Classification . . . B.

An initial supply of the Program Product Design Objectives for DATA/360-OS (GSXX-XXXX) will be sent to each DP branch office.

No programming RPOs will be accepted at this time.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the DATA/360-OS (5734-XS3) Program Product are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . This Program Product will not be provided in Test Centers free of charge for customer use during testing.

Supporting information is on the reverse side. For additional information and guidelines for marketing DATA/360-OS, consult the DATA/360 TAP write-up, the sales manual pages for DATA/360-OS, and the DATA/360-DOS Preliminary Version – Application Description Manual (GH20-0723). The availability and form number of the DATA/360-OS Application Description Manual will be announced.

Publications Support: Initial Copies of the Unlicensed Basic Program Product offering will be shipped through DAPS. Additional copies of these manuals and other support literature will be from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publications Release Letter for actual dates of availability.

DATA/360-OS is a data entry system written in Assembler Language to operate under the System/360 Operating System (OS), MFT or MVT. It performs most of the traditional IBM 29 Card Punch and IBM 59 Card Verifier functions with new cost-reduction facilities made possible by on-line 2260s and computer program logic. Its purpose is to provide a method of entering source data by local 2260 terminals to a disk file, and verifying this data to produce input to a user's program, bypassing all unit record operations. DATA/360-OS supports from 1 to 48 2260 terminals (see Minimum Machine Configuration) and the 2311 or 2314 disk files.

Features

- . Provides support for a variable number of terminals [1 to 48 2260 Model 2 Display Stations Model 2 (240 characters) or 1 to 32 2260 Model 2 Display Stations (480 characters)]. Supports one or two 2848 Display Control Unit Models 21 or 22.
- . Macro generation of the on-line program
- . User exit in edit mode allows addition of an application-oriented editing routine
- . Extensive production statistics as follows:
 - . Production Summary
 - . Operator Summary
 - . Document Summary
 - . Log Detail
 - . Production Rate Summary
 - . Edit and Verify Error Summary
 - . Error Code Summary
 - . System Summary

- . Provides paging facility enabling insertion and deletion of data records
- . Simultaneous Data Entry and Data Extraction
- . Supports 2311, 2314 or 3330 disk files
- . Allows format control on up to 24 fields
- . Supports seven formats per document
- . Record length edit with provisions for override by use of "RELEASE" function
- . Designed for quick implementation
- . Improves management control of data entry
- . Increases throughput
- . Reduces turnaround time
- . Generalized editing allows source correction
- . Requires no change to existing entry documents
- . Improves keystroke rate
- . Each 2260 Display Station can optionally verify or enter data
- . Allows record lengths up to 117 characters
- . Provides an ordered 64-character set (see section entitled "An Ordered 64-Character Set")
- . Flexible checkpoint procedure

Minimum Machine Configuration . . . The minimum machine configuration for DATA/360 must meet the requirements of System/360 Operating System MFT or MVT. The following must be included for DATA/360: one 2040 Processing Unit Model G with Decimal Arithmetic (3237) . . . one Disk Storage Unit (2311, 2314 or 3330) . . . one Line Printer . . . one 2848 Model 21 or 22 Control Unit . . . one 2260 Model 2 Display Station . . . one Keyboard, Alphameric-Numeric Inset (4765) for 2260 Model 2 . . . one Cursor Adapter (5341) . . . one Non-Destructive Cursor (5340) . . . one Line Address Feature (4787) . . . one Display Adapter (3368 for Model 21 or 3369 for Model 22)*

In addition, the following devices are required to install and maintain the system:

- . one Card Read/Punch
- . one seven or nine track tape drive

GENERAL PURPOSE SIMULATION SYSTEM V

GPSS V provides an easy-to-use and easy-to-understand tool for modeling and examining the behavior of systems in the engineering and management science areas. This system accommodates varying model sizes in a modular fashion for System/360 and System/370 configurations with storage capacities ranging from 64K bytes upward for DOS and from 128K bytes upward for OS.

The application areas in which GPSS type simulations have been useful and profitable are many and varied:

- . general information system design
- . communication traffic flow and capacity studies
- . quality control procedure specification
- . advanced management planning
- . analysis of consumer behavior
- . inventory system design
- . job shop processing
- . studies of equipment availability
- . performance and reliability
- . transportation loading and scheduling
- . computer configuration evaluation
- . economic studies
- . capital investment and risk studies
- . analysis of alternative military strategies
- . analysis of plans for corporate growth and merger, among others.

GPSS V provides many significant advantages over GPSS/360 Version 1 (Type II programs) and GPSS/360 Version 2 (IBM Program Products). The major functions and capabilities of GPSS V are:

- . Compatibility with GPSS/360 Version 1 and 2
- . Entities on Auxiliary Storage
- . Permits Model Initialization with External Data
- . Removes Restrictions on Model Size
- . An interface capability between GPSS V and user written PL/I routines
- . Dynamic Adjustment of Equipment Entities (FACILITIES and STORAGES Availability)
- . Byte and single precision floating point save-values
- . Byte and single precision floating point matrices

- . Every transaction may have as many as 1020 parameters. A maximum of 255 halfword, 255 fullword, 255 byte and 255 single precision floating point parameters in any combination
- . Extended indirect addressing capabilities
- . An automatic cross-reference dictionary of all symbolically addressed entities included with the assembly listing
- . Descriptive error messages to supplement numeric messages
- . Free-Form coding of GPSS V statements
- . Unique data sets for the READ/SAVE feature.

The Program Product Design Objectives (XXXX-XXXX) are available from Mechanicsburg; each branch office has been sent a limited supply. Detailed information is in the sales manual.

The monthly charge for each of the GPSS V program products is \$75.

Both Programs are Assigned Programming Service Classification . . . B.

Availability . . . The planned availability of GPSS V-OS (5734-XS2) is November 4, 1970, DOS (5736-XS3) December 4, 1970.

No programming RPQs will be accepted at this time.

Publications Support: Initial Copies of the Unlicensed Basic Program Product offering are being shipped through DAPS. Additional copies of these manuals and other support literature are available from IBM Distribution Center, Mechanicsburg, Pa. Consult your weekly Publications Release Letter for actual dates of availability.

SE Skill Classifications . . . SE Services, identified with and related to the installation and use of the GPSS V-OS (5734-XS2), GPSS V-DOS (5736-XS3), Program Product are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Program Product Use During Customer Pre-Installation Testing . . . These Program Products will not be provided in Test Centers free of charge for customer use during testing.



AVAILABLE SYSTEM/360 TYPE II APPLICATION PROGRAMS TO BE SUPPORTED ON SYSTEM/370

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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
[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 references 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.
[9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
[10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

The list on the reverse side identifies Type II application programs announced as System/360 programs which will support System/370 configurations, subject to the compatibility constraints announced for System/370 (see P70-71). This support will enable current System/360 users to migrate to System/370 with a minimum of effort.



The programs listed will run on System/370 without user modification. The System/370 configurations must be compatible with those of the System/360 for which these programs were announced. Specifically, the System/370 will require the same I/O devices required to run these programs on System/360 or comparable System/370 devices used in accordance with the compatibility constraints specified for those devices. Total core requirements on System/370 could vary from those required on System/360 according to the operating system to be used.

Unless otherwise indicated, the availability of System/370 support for these programs will be concurrent with the availability of the OS or DOS releases supporting System/370. Programs that currently use coding conventions that are not compatible with System/370 will require additional time for modification and testing as noted on the reverse side.

Programs which will support the 3330 Disk Storage facility, the 2305 Fixed Head Storage facility, and/or the 3211 Printer as a compatible device to the 1403 are indicated on the back.

Additional information concerning these programs is contained in the sales manual.

These programs are available from PID without charge.

Handwritten signature of John Fahey

John Fahey
WTC Director of DP Marketing

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

P70-72 NOT USED

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Release Date: June 30, 1970
Distribution: All Areas

TYPE II APPLICATION PROGRAMS SUPPORT ON SYSTEM/370

Program Name	Program Number	S/360 Op. Sys.	Reference	S/370* Support	Device Support**		
					3330	2305	3211
AD-APT/AUTOSPOT	360A-CN-12X	OS	P360A.18	8/71			12/71
Adv. Life Info. Sys. (ALIS)	360A-IL-09X	DOS	P360A.24				12/71
APT	360A-CN-10X	OS	P360A.17	8/71			12/71
Adm. Terminal System (ATS)	360A-CX-19X	OS	P360A.25				
Adm. Terminal System (ATS)	360A-CX-18X	DOS	P360A.29	9/71			
Bill of Material Processor	360A-ME-06X	DOS	P360A.43				12/71
Coursewriter III	360A-UX-01X	DOS	P360A.40	9/71			12/71
Inventory Control	360A-MF-04X	DOS	P360A.41				12/71
Linear Prgm. System (LPS)	360A-CO-18X	DOS	P360A.14				12/71
Medical Info. Sys. Progs. (MISP) Version 1	Controlled Release	DOS	P360A.1				12/71
Math. Prog. Sys.	360A-CO-14X	OS	P360A.30				12/71
Property & Liability Info. Sys. (PALIS)							
Basic	360A-IF-10X	DOS	P360A.24				12/71
Automobile	360A-IF-11X	DOS	P360A.24				12/71
Other Lines	360A-IF-13X	DOS	P360A.24				12/71
Project Control System	360A-CP-06X	DOS	P360A.7				12/71
Problem Language Analyzer (PLAN)	360A-CX-26X	DOS	P360A.38	1/72			1/72
Problem Language Analyzer (PLAN)	360A-CX-27X	OS	P360A.38	11/71	11/71		12/71
PLAN Graphics Support	360A-CX-34X	OS	P360A.46	11/71			12/71
Requirements Planning	360A-MF-05X	DOS	P360A.19				12/71
Retail IMPACT System							
Fashion System	360A-DR-04X	OS	P360A.8		11/71	8/71	12/71
Staple System	360A-DR-05X	OS	P360A.8		11/71	8/71	12/71
Fashion System	360A-DR-08X	DOS	P360A.8				12/71
Staple System	360A-DR-09X	DOS	P360A.8				12/71
Shared Hosp. Acctg. System (SHAS)	360A-UH-11X	DOS	P360A.47				12/71
Wholesale IMPACT	360A-DW-05X	DOS	P360A.15				
Wholesale IMPACT	360A-DW-05X	OS	P360A.15		11/71	8/71	12/71

*Notes: Unless indicated by a support date in this column, all programs listed will support compatible System/370 configurations concurrent with the availability of the OS or DOS releases supporting System/370.

** Support for the 3330, 2305, and 3211 is announced only for programs that have an availability date indicated.



BOS/360 RELEASE 19/20 AVAILABLE

BOS/360 Release 19/20, (a maintenance update), can now 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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
[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 references 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.
[9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
[10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Components with programming service classification C include corrections to APARs submitted prior to January 1, 1970. No further maintenance is planned for these programs.

Affected components are:

Table with 3 columns: Component Name, Component ID, Change Level. Includes items like Group 1 Utilities (360B-UT-300, 1-8), Group 2 Utilities (UT-301, 1-8), Basic Control Programs (CL-302, 1-J (19)), Consecutive Processing Macros (IO-303, 1-7), ISFMS Macros (IO-304, 1-E (14)), DAM Macros (IO-305, 1-6), Report Program Generator (RG-307, 1-C (12)), Sort/Merge (SM-308, 1-C (12)), Assembler (AS-309, 1-F (15)), Remote Job Entry Work Station (CQ-311, 1-2), Binary Synchronous Communications (CQ-312, 1-2).

System Release 18 of BOS/360 will remain "current" until September 26, 1970. (Three Months).

The Basic Control Program, ISFMS, BSC Macros and RJE Work Station are programming service classification A. All other components are C.

Program material and ordering instructions are on the reverse side.

Handwritten signature of John Fahey, WTC Director of DP Marketing.

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

P70-74 NOT USED

FOR IBM INTERNAL USE ONLY

Release Date: June 26, 1970
Distribution: All Areas

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 GN33-8564, 8571, <u>8608</u> , <u>8633</u>	GC24-3361-6
Programs and Assembler Operating Guide TNLs GN33-8533, 8566, 8577	GC24-3450-3
Programmer's Guide TNLs GN24-5336, 5328; GN33-8531, 8544, 8565, 8572, <u>8605</u> , <u>8634</u>	GC24-3372-6
Operating Guide, Operator Messages TNLs GN33-8537, 8563, 8578, <u>8609</u> , <u>8635</u>	GC24-5024-3
System Generation and Maintenance TNLs GN33-8532, 8545, 8567, 8579, <u>8632</u>	GC24-5060-2
Utility Programs Specifications and Operating Guide TNL GN28-2338	GC24-3409-3
1070 Process Communication Supervisor	GC26-5996-1
1070 Process Communications Supervisor, Operating Guide	GC26-3627-1
Autotest (8K Disk) Specifications TNLs GN21-5011, 5041, 5070; GN33-8583,	GC24-3378-2
Note: SRL GC24-3378-1 plus TNLs GN24-5015, GN21-5011, 5041, and 5070 may be used in lieu of the SRL GC24-3378-2 plus TNLs GN21-5011, 5041, 5070, GN33-8583.	
Report Program Generator (8K Disk) Specifications,	<u>GC24-3387-5</u>
Sort/Merge Program (8K Disk) Specifications TNL GN28-2389	GC24-3321-4
Note: SRL GC24-3321-3 plus TNLs GN21-5045 and GN28-2389 may be used in lieu of SRL GC24-3321-4 plus GN28-2389.	
Macro Definition Language 8K Disk/Tape TNL GN33- <u>8639</u>	GC24-3364-3

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		User Volume Requirement
		Type	Code	
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
Autotest	Y24-5004
Report Program Generator	Y24-5005
Sort/Merge	Y24-5001
Assembler	Y24-5000
1070 PCS	Y24-5006
RJE Work Station	Y30-2006

Program Listings: The BOS/360 listing (including the Control Program) is available on microfiche from the IBM Corporation; Microfiche Distribution, Mechanicsburg, Pennsylvania.

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 19/20 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 19/20, 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 of BOS.

Users who no longer require this program should be instructed to return the pre-printed order form to PID with a "D" in columns 14 of section 1, line 1.

Current users may also modify their profile by adding or deleting components.



TOS/360 RELEASE 14 IS AVAILABLE

TOS/360 Release 14 (a maintenance update) can now 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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
[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.
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[9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
[10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

Components with programming service classification C include corrections to APARs submitted prior to January 1, 1970. No further maintenance is planned for these programs.

Affected components are:

Table with 3 columns: Component Name, Component ID, and Change Level. Includes entries for COBOL, IOCS, System Control, FORTRAN IV, MPS Utility, Macros, and Compiler I/O Modules.

System Release 13 of TOS/360 will remain "current" until September 26, 1970. (Three Months).

Control Program, IOCS, Assembler, PL/I, Supervisors, and OLTEP are programming service classification A; all others are C.

Program material and ordering instructions are on the reverse side.

Handwritten signature of John Fahey, WTC Director of DP Marketing.

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: June 26, 1970
Distribution: All Areas

BASIC PROGRAM PACKAGE

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

Documentation - Program Material List ... Attachment I - TOS/360 Restrictions ... Attachment II - APAR Submission. SRL publications, appropriate to the component ordered, will be shipped.

System/360 Disk and Tape Operating Systems - Concepts and Facilities	<u>GC24-5030-7</u>
System/360 Tape Operating System - System Generation and Maintenance	GC24-5015-6
System/360 Tape Operating System - Performance Estimates	GC24-5020-5
System/360 Tape Operating System - Operating Guide TNL GN24-5360	GC24-5021-3
System/360 Tape Operating System - System Control and System Service Programs	GC24-5034-2 Note 1
System/360 Tape Operating System - Supervisor and Input/Output Macros TNLs GN24-5371, GN33-8645	GC24-5035-3
System/360 Tape Operating System - Data Management Concepts	GC24-3430-3
System/360 Disk and Tape Operating Systems - Assembler Specifications	<u>GC24-3414-7</u>
System/360 Disk and Tape Operating Systems - Tape Sort/Merge Program Specifications	GC24-3438-4
System/360 Tape Operating Systems - Autotest Specifications TNLs GN21-5054, 5074, 5080; GN33-8585	GC24-3441-3
System/360 Disk and Tape Operating System - Utility Program Specifications TNLs GN33-8610	<u>GC24-3465-5</u>
System/360 Disk and Tape Operating Systems - COBOL Language Specifications TNL GN28-0245	GC24-3433-5
System/360 Disk and Tape Operating Systems - COBOL Programmer's Guide GN28-0253, 0259	GC24-5025-5
System/360 Basic FORTRAN IV Language	GC28-6629-1
System/360 Disk and Tape Operating Systems - FORTRAN IV Programmer's Guide	<u>GC24-5038-3</u>
System/360 Disk and Tape Operating Systems - Report Program Generator Specifications	<u>GC26-3570-6</u>
System/360 Disk and Tape Operating Systems - Utility Macro Specifications TNL GN33-8613	<u>GC24-5042-4</u>
System/360 Disk and Tape Operating Systems PL/I Programmer's Guide TNL GN33-9067, 9078	GC24-9005-4
PL/I Subset Reference Manual TNL GN33-9066, 9085	GC28-8202-1
System/360 Disk and Tape Operating Systems, On-Line Test Executive Program Specifications and Operating Guide	GC24-5066-2

Form numbers which have changed since previous release are underlined

Note 1 SRL GC24-5034-1 plus TNLs GN24-5219, 5290 and 5348 may be used in lieu of the SRL GC24-5034-2.

Machine Readable -- Option 1 - Appropriate material delivered for 6K Supervisor and is specified by using Program Number Extension OPT 1. Option 2 - Appropriate material delivered for 8K Supervisor and is specified by using Program Number Extension OPT 2. Components are as follows:

Assembler	360M-AS-465
COBOL	CB-402
Systems Control Program	CL-405
On Line Test Executive Program	DN-418
FORTRAN IV	FO-409
Input/Output Control System	IO-404
Compiler Input/Output Modules	IO-412
Optical Character Reader	IO-417
PL/I	PL-410
Autotest	PT-407
Report Program Generator	RG-408
Sort/Merge	SM-400

Supervisor, 6K	360M-SV-413
or	or
Supervisor, 8K	SV-414
Utility Programs	UT-403
Multiprogramming support Utility Macros	UT-411

OPTIONAL PROGRAM PACKAGE

Documentation - Optional Program Material List.
Machine Readable -- Source modules are available on five individual distribution volumes each identified by a Program Extension Number as indicated below.

Program Number Extension	Program Component Name	Program Number
OPT1	System Control	360M-CL-405
	IOCS	IO-404
	Assembler	AS-465
	MPS Utility Macros	UT-411
OPT2	FORTRAN IV	FO-409
	Sort/Merge	SM-400
	Report Program Generator	RG-408
	1285 Optical Character Reader	IO-417
OPT3	COBOL	CB-402
	Autotest	PT-407
OPT4	PL/I	PL-410
	OLTEP	DN-418
OPT5	Utilities	UT-403

ORDERING INFORMATION

System Number 360M (Please specify each component desired).

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. Enter a separate Component Line for each component desired. Respecify the System Line for each different Program Number Extension.

	Program Number Extension	Distribution Medium Type	Code	User Volume Requirement
Basic	OPT1	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
	OPT2	MT 7DC/800	26	01
		MT 9/800	28	01
		MT 9/1600	29	01
Optional	OPT1 thru OPT5	MT 9/800	28	01
		MT 9/1600	29	01

ADDITIONAL PROGRAM MATERIAL

Program Logic Manuals	
TOS/360 System Control	Y24-5022
TOS/360 Logical IOCS	Y24-5018
DOS/360 and TOS/360 MPS Utility Macros	Y24-5045
TOS/360 Utilities	Y24-5019
DOS/360 and TOS/360 Tape Sort/Merge	Y24-5016
DOS/360 and TOS/360 Assembler	Y26-3642
DOS/360 and TOS/360 RPG	Y26-3701
DOS/360 and TOS/360 COBOL	Y24-5025
DOS/360 and TOS/360 FORTRAN IV	Y24-5032
DOS/360 and TOS/360 PL/I	Y33-9011
TOS/360 System Control (TNL)	Y24-5060
DOS/360 and TOS/360 Tape Sort/Merge (TNL)	Y24-5036

Program Listings: The TOS/360 listings are available on microfiche from the IBM Corporation, Microfiche Distribution Mechanicsburg, Pennsylvania. Specify Group Code 2020 when ordering. The listings are equivalent to the output listings produced by assembling the symbolic modules.

CURRENT USERS

Current users will receive a pre-printed Program Order Form and a letter announcing the availability of Release 14 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 14 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 the total replacement package is 01. The Maintenance package is available on a DTR. Users who no longer require this program should be instructed to return the pre-printed Order Form to PID with a "D" in column 14 of section 1 line 1. The maintenance package will be available for 60 days from the date of announcement.

Current users may also modify their profile by adding or deleting components.



IBM World Trade Data Processing

PROGRAM ANNOUNCEMENT

TSS

Time Sharing System/360

SIGNIFICANT ADDITIONAL FUNCTIONS PROVIDED WITH VERSION 7 OF TSS/360

PL/I Compiler Remote Job Entry

... Operating in a Virtual Memory Environment

... Available Now



Version 7 of the Time Sharing System/360 is now available -- as Type I with programming service classification A. Version 7 incorporates significant incremental and functional improvements as described below.

TSS/360 is an advanced function operating system designed to provide a virtual memory environment for both batch and terminal-oriented programs. Virtual memory, based on the dynamic address translation capability of the System/360 Model 67, nearly eliminates program size restrictions and the need for planned overlays by allowing each user to address directly more than 16 million bytes of storage.

In addition, many other advanced functions such as reentrant programming, dynamic resource management and code sharing, selective data set sharing, symbolic program control, and high performance multiprocessing with non-dedicated channels make TSS suitable for large batch jobs and interactive data base systems, as well as time sharing applications. TSS should be considered for those customers who need advanced capabilities in these application areas.

Functional Improvements ...

PL/I

PL/I F Version 5 is now available to operate in the TSS/360 environment; PL/I programs can be compiled and executed under TSS/360, making use of the system's virtual memory capabilities. Note that the PL/I compiler is available earlier than the 3Q70 availability previously announced.

Remote Job Entry

Remote Job Entry (RJE) has been added; with a 2780 Model 1 terminal users can initiate any batch or non-conversational TSS/360 job ... Output can be directed to the same or other 2780 RJE Stations or to the system high-speed printer.

Incremental Improvements ...

Performance

Many improvements made to enhance performance by reducing paging ... Dynamic loader and device management changed to improve performance ... Selective loading of particular functions at startup time now provided.

Human Factors

New commands added to enhance system use ... Improved capabilities for user to control, change, and add to messages, including Program Control System output ... System Messages improved for simplicity and clarity ... New flexibility provided for user in working with program libraries ... Password overtyping added to improve security ... Improved program library integrity ... Operator message handling augmented.

Reliability and Serviceability

Facilities added to allow creation of multivolume data sets ... new ability to control the entry of tasks when auxiliary space is limited ... improved VAM interlocking facility ... additional On-Line Tests ... a new alternate I/O path retry method added ... improved I/O outboard error recordings.

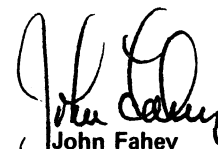
Education

For customer and IBM classes contact your Regional Manager of Education.

Action Required

Current users will receive a letter announcing the availability of Version 7. Included with this letter will be a preprinted program order form that the customer should use to order the new version through the branch office. Customers who are no longer users of this program should return the preprinted order form to PID with a D in Section 1, Line 1 of Column 14.

Details of the above, including engineering changes, basic program material, ordering information, reference material, and additional program material are on the inside pages.



John Fahey

WTC Director of DP Marketing

When recompiling or reassembling a program module, the old version can be retained until the recompilation or assembly is completed, providing improved protection for the user's program library.

Reliability and Serviceability

The installation now has the facility to permit or prevent the creation of multivolume data sets on public storage.

The system will keep a dynamic count of the total estimated amount of auxiliary space required. When this total exceeds the amount of auxiliary space specified, new tasks are not permitted to enter the system until other tasks are completed, preserving good performance for the current users. A SYSGEN parameter allows an installation to specify a greater percentage than the actual amount of auxiliary space available, for this purpose.

VAM interlocking is improved by replacing the bit interlocking facility with a single lock byte that will control access to the DSCB pages.

An alternate I/O Path Retry method is incorporated that does not require marking the channel and/or control unit as being down.

I/O outboard error recordings are improved in contents, recording criteria, and format quality. Included are the date of the error, device type, volume identification, CSW status, home address, and the physical address for the 2314 devices.

On-Line Tests are included to support the 1403, 2400, 2540, 2541, and 2703.

Maintenance

This version includes solutions to 155 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 mdl N1 with one 1416 mdl 1; one 2540 mdl 1; one 2820 mdl 1; one 2301 mdl 1; one 2314 DASF with at least five drives; 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 or one 2703 mdl 1; one 1052 mdl 7; one 2741 mdl 1 or one 1051 mdl 1 or 2 and one 1052 mdl 1 or 2; five 2316s.

See "P 360/67 Programming Pages" in the Sales Manual for additional hardware features and RPOs 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	73
2365A-12	34
2365-12	85
2365A-2	19
2365-2	65
2846	5
2860	71
2870	41
2870A	39
2167	N/A

Basic Program Material (Available from PID)

Documentation -- Program material list ... Methods of Printing the TSS System Prose. The following SRLs will be shipped:

System Generation and Maintenance*, GC28-2010-5 ... Managers and Administrators Guide, GC28-2024-3 with TNL GN28-3071** ... Operators Guide, GC28-2033-6 ... with TNL GN28-3065** ... System Messages*, GC28-2037-6 ... Independent Utilities, GC28-2038-1 with TNLS GN28-3056, GN28-3070** ... Addendum*, GC28-2043-10.

*Denotes change with this version

**New Item

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

Machine Readable -- TSS Utilities - Restorable IPL Control VOL data - Restorable Auxiliary Control VOL data -- TSS System Prose.

Optional Program Material

Documentation -- Program material list ... Source Volume Utilization.

Machine Readable -- Source Code is delivered in the following volumes:

Volume 1 contains: CEA - Supervisor, CEB - Independent Utilities, CEH - Time Sharing Support Systems, CEI - Auxiliary Programs, CEY - Linkage Editor, CGC - Service Routines, CHB - System Tables, and is specified by using Program Number Extension VOL1.

Volume 2 contains: CEC - Access Methods, and CFA - Command System, and is specified by using Program Number Extension VOL2.

Volume 3 contains: CEK - FORTRAN Compiler, CEV - Assembler, CHC - FORTRAN Library Subroutines, CMA - Diagnostics, and CZU - Time Shared Utilities, and is specified by using Program Number Extension VOL3.

Volume 4 contains: IEM - PL/I Compiler, and is specified by using Program Number Extension VOL4.

Volume 5 contains: IEM - PL/I Compiler, IHE - PL/I Library, and is specified by using Program Number Extension VOL5.

Ordering Information: Program Number 360GCL627

	Prg. Nbr. Ext.	Distribution Medium Type	Code	User Volume Requirement
Basic	none	MT 9/800	28	02
Optional	VOL 1	MT 9/800	28	01
	VOL 2	MT 9/800	28	01
	VOL 3	MT 9/800	28	01
	VOL 4	MT 9/800	28	01
	VOL 5	MT 9/800	28	01

Programming Service

TSS/360 Version 6, Modification Level 1 will remain "current" until September 30, 1970 (three months). TSS/360 Version 6 Modification Level 0 will remain "current" until August 28, 1970. Releases prior to Version 6, Modification Level 0 are now considered "Back-Level".

Reference Material

Assembler Language, GC28-2000-3 with TNL GN28-3118** ... Command System Users Guide, GC28-2001-6* ... Concepts and Facilities, GC28-2003-4 with TNL GN28-3126** ... Assembler User Macro Instructions, GC28-2004-4 with TNL GN28-3068** ... Linkage Editor, GC28-2005-3 with TNL GN28-3117** ... Time Sharing Support System, GC28-2006-0 with TNLs GN28-3043, GN28-3062 ... FORTRAN IV, GC28-2007-2 with TNLs GN28-3060, GN28-3061, GN28-3063** ... System Programmers Guide, GC28-2008-2 with TNL GN28-3127** ... Terminal Users Guide, GC28-2017-3 with TNLs GN28-3059, GN28-3066** ... Master Index, GC28-2023-2* ... FORTRAN Programmers Guide, GC28-2025-3 with TNL GN28-3067** ... FORTRAN IV Library Subprograms, GC28-2026-3* ... Assembler Programmers Guide, GC28-2032-4* ... MTT Programming and Operation, GC28-2034-0 with TNL GN28-3064** ... Planning for Remote Job Entry, GC28-2044-0 ... PL/I Reference Manual, GC28-2045-1* ... PL/I Library Computational Subroutines, GC28-2046-1* ... Introducing TSS/360, GC28-2048-3* ... PL/I Programmers Guide, GC28-2049-0** ... Planning for PL/I, GC28-2050-0** ... Data Management Facilities, GC28-2056-0** ... Remote Job Entry, GC28-2057-0** ... TSS/Quick Guide,

GX28-6400-1*** ... Quick Guide for System Programmers, GX28-6401-0***.

*Denotes change with this version

**New Item

***Updated Versions of these manuals will be announced in a future PRL.

Program Logic Manuals

Available from IBM Distribution Center, Mechanicsburg. System Logic Summary, GY28-2009-2* ... System Control Blocks, GY28-2011-5* ... Resident Supervisor, GY28-2012-4 with TNL GN28-3131** ... Command System, GY28-2013-5* ... Program Control System (PCS), GY28-2014-1 with TNLs GY28-3099, GY28-3114, GN28-3115** ... System Generation and Maintenance (SYSGEN), GY28-2015-5 with TNL GN28-3106** ... Access Methods, GY28-2016-3 with TNL GN28-3123** ... System Service Routines, GY28-2018-2 with TNL GN28-3124** ... FORTRAN IV GY28-2019-1 ... FORTRAN Library, GY28-2020-1* ... Assembler, GY28-2021-1 with TNLs GY28-3100, GN28-3129** ... Linkage Editor, GY28-2030-1 with TNLs GY28-3083, GY28-3098, GY28-3103, GN28-3116** ... Dynamic Loader, GY28-2031-2 with TNL GN28-3128** ... Independent Utilities, GY28-2039-3 ... Task Monitor, GY28-2041-2 with TNLs GY28-3113, GN28-3130* ... On Line Test Control Program, GY28-2042-2 ... Time Sharing Support System, GY28-2022-1 with TNL GN28-3122** ... Operator Task and Bulk I/O, GY28-2047-3* ... PL/I Compiler, GY28-2051-0** ... PL/I Library Computational Subroutines, GY28-2052-0** with TNL GN28-3132**.

*Denotes change with this version

**New Item

Program Listings

Time Sharing System/360 program listings are available on microfiche from IBM Corporation, E. Simpson Ferry Road, Mechanicsburg, Pennsylvania 17055, Attention: Microfiche Distribution.

Group Code GJD1-9030 is used to order all Time Sharing System listings. There are no 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.

Dependency Programs

There are no Dependency Programs for the operation of the Time Sharing System/360.

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IBM World Trade Data Processing

PROGRAM ANNOUNCEMENT

TSO

Time Sharing Option for OS/360

2260 AND 2265 DISPLAY TERMINALS
SUPPORTED BY TSO



OS/360 Time Sharing Option (TSO) will be extended to include terminal support for the 2260/2848 and 2265/2845 Display Terminals and Control Units. Now you can offer your customers and prospects increased flexibility to meet their time sharing requirements.

● ● ●
Highlights: Support for the 2260/2848 and 2265/2845 will be included in the TSO TCAM Message Control Program.

Screen control is provided by the system:

Data is displayed line by line including the next to the last line on the screen. The user can then signal when he is ready to erase the screen and continue at the top of the screen.

The last entry displayed on the screen is displayed at the top after the screen has been erased to assist the user in referencing his current request.

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

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TSO simulated attention functions are available to permit program interruptions.

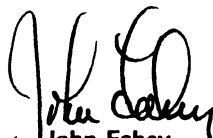
Using the TSO Command Language EDIT subcommands, a user can display a full screen of data from a data set with a single request.

A program operating in TSO does not have to be aware that the terminal with which it is interacting is a display. The TSO device-independent BSAM/QSAM interface to the terminal is maintained for the 2260/2265 to provide for ease of development and installation of terminal-oriented application programs.

Availability: June 15, 1971 with programming service classification A.

No RPOs will be accepted at this time.

See the reverse side for more information.


John Fahey
WTC Director of DP Marketing

*Announced by ITPS Memorandum to DP Branch Managers
B70-149

FOR IBM INTERNAL USE ONLY

P70-71, 78, 79, 80, 81, 82, 83 NOT USED

Release Date: June 23, 1970*
Distribution: All Areas

P70-84

Terminal Support

The TSO provided TCAM Message Control Program, which was announced (P69-125) as supporting 1050, 2741 and TELETYPE^(c) terminal 33/35 has been extended to the following:*

2260 Display Station Models 1 and 2 for operation with the 2848 Display Control Models 1, 2 or 3. They may be attached either for remote terminal control operation using the 2701 Data Adapter Unit and Terminal Adapter Type III (4656, 4657) or for local connection to S/360. by channel attachment. The Alphameric Keyboard (4766) is required for the 2260. The Non-Destructive Cursor and Adapter (5340 and 5341 for 2848) and the rapid cursor which is part of the Extended Cursor Control (3606 for 2260 and 3901 for 2848) are optional.

The TAB feature, which is part of the Extended Cursor Control, Line Addressing (4787 for 2848) and the 1053 printer attachment are not supported by TSO.

2265 Display Station Model 1 for operation with the 2845 Display Control Model 1 which is attached for remote terminal control operation using the 2701 Data Adapter Unit Terminal Adapter Type III (4656, 4657). The Alphameric Keyboard (4766) is required for the 2265s. The Destructive Cursor (3301 for 2845) is optional.

The TAB feature (7801 for 2845), Line Addressing (4801 for 2845), and the 1053 printer attachment are not supported by TSO.

Minimum System Configuration

The minimum TSO configuration with the inclusion of support for the 2260/2848 and 2265/2845 is the same as that specified in P69-125 and P70-69.

Publications

The addition of 2260/2848 and 2265/2845 to TSO will be reflected in TNLs to the following:

IBM System/360 Operating System Time Sharing Option Planning for TSO, GC28-6698.

IBM System/360 Operating System Planning for TCAM, GC30-2020.

Availability of the TNLs will be announced in a Publication Release Letter.

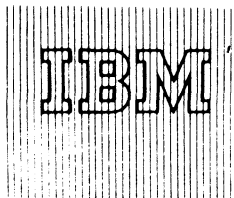
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- (5) All references made to the Program Information Department (PID) should be understood to mean the appropriate WT Program Library.
- (6) Any references made to DPD Departments (or regional) as sources of information or for manuals, etc., should 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.
- (9) World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- (10) Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

(c) Trademark of TELETYPE Corporation

* Terminals which are equivalent to those explicitly supported may also function satisfactorily. The customer is responsible for establishing equivalency. IBM assumes no responsibility for the impact that any changes to IBM supplied products or programs may have on such terminals.



1130 DISK MONITOR SYSTEM VERSION 2 MODIFICATION 8 IS AVAILABLE

1130 Disk Monitor System, Version 2 Modification Level 8 can now be ordered. This level expands Version 2 to include:

- . Macro Assembler Capabilities
- . Added Disk Utility functions
- . Added Supervisor functions



Current users on previous modification levels should be advised of the features incorporated in this level.

Modification 8 includes the following new facilities:

Macro Assembler Capability

This new macro capability is a direct extension of the 1130 DM2 Assembler and is entirely compatible in syntax and language usage. The 1130 Macro Assembler replaces the current DM2 Assembler; the macro features are available at 8K and above only.

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.
- . Enables your customer to create a language suitable to his own unique environment.
- . Language compatible with the 1800 MPX Macro Assembler.

Features

- Macro Definition (8K and above)
- Conditional Assembly (4K and above)
- Symbol Redefinition (4K and above)
- Library Purging (8K and above)
- Cross Reference Capability (8K and above)

Added Disk Utility Functions

- Macro Update Facility (8K and above)
- File definition (4K and above)
- Suppress Core Load MAP (4K and above)

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

Added Supervisor Functions

- Greater Equate Subroutines Ability
- Restore Control Record Printing

The macro capability of the 1130 Macro Assembler restricts the number of in-core symbols to approximately 250 less than the number supported by the current Disk Monitor Version 2 Assembler. This restriction applies only to systems with 8K core or above; the 4K core user is not affected. For all users, overflow sectors in disk working storage for programs with large symbol tables may still be specified.

Publications ...

1130 Assembler Language	GC26-5927
1130 Disk Monitor System, Version 2, Programming and Operator's Guide	GC26-3717
1130/1800 Macro Assembler Programming	GC26-3733
1130 Subroutine Library	GC26-5929...TNL GN33-8081

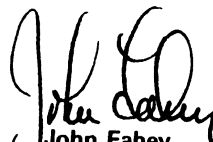
Classification ... Type I program with programming service classification of "A".

For programming service purposes, Modification Level 7 will be considered current until October 30, 1970 (three months).

Current users will receive a letter announcing the availability of Modification Level 8. Included with this letter will be a preprinted order form that the customer should use to order the new modification through the IBM branch office. Current users of the system should take advantage of the improved Disk Monitor System Version 2 by ordering the Maintenance Deck, available on cards, or by submitting a disk cartridge to PID for the complete replacement as soon as possible. Paper tape users will automatically receive update paper tapes.

Customers who are no longer using this program should return the preprinted order form to PID with a "D" in section 1, line 1, column 14.

Ordering information is on the back.


John Fahey
WTC Director of DP Marketing

SEE REVERSE SIDE FOR
"NOTE TO WORLD
TRADE READERS"

FOR IBM INTERNAL USE ONLY

Basic Program Package ...

Documentation -- Program Material List, attachment to users, SRL Publications (GC26-5927-5, GC26-3733-0, GC26-3717-6 and TNL GN33-8081).

Machine Readable -- Object code and sample programs.

Optional Program Package ...

Documentation -- Program Material List, attachment to users and Operating Instructions.

Machine Readable -- Symbolic source codes.

Ordering Information ... Program Number 11300S005.

	<u>Prgm. No. Extension</u>	<u>Distribution Medium Type</u>	<u>Code</u>	<u>User Volume Requirement</u>
Basic	none	2315	58	01
Optional	none	MT 9/800	28	01
		MT 9/1600	29	01

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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
- [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 references 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.**
- [9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- [10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.



NEW RELEASE OF BPS/360 AVAILABLE

Release 4 of the System/360 Basic Programming Support can now 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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
[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 references 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.
[9] World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
[10] Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

The Basic Tape System (AS-091), Initialize Disk (UT-213), Dump/Restore (UT-214), and Recover/Replace (UT-215) are programming service classification A. All other components are C.

Components with programming service classification C include corrections to APARs submitted prior to January 1, 1970. No further maintenance is planned for these programs.

Affected components are:

Table with 3 columns: Component Name, Part Number, and Change Level. Includes items like Fortran IV (360P-FO-031), Card-to-Tape Utility (UT-051), Tape-to-Tape Utility (UT-054), Storage Print Utility (UT-056), Copy/Restore Disk/Disk Utility (UT-072), Basic Tape System (8K) (AS-091), Report Program Generator (card) (RG-200), Report Program Generator (8K tape) (RG-201), FORTRAN IV (16K card) (FO-205), Remote Job Entry Work Station Program (CQ-218).

System Release 3 of BPS/360 will remain current until October 31, 1970 (three months).

Program material and ordering information are on the reverse side.

Handwritten signature of John Fahey, WTC Director of DP Marketing.

Published by DP Publications Services, WTHQ
1 North Broadway
White Plains, New York 10601

FOR IBM INTERNAL USE ONLY

Release Date: July 31, 1970
Distribution: All Areas

Basic Program Package

Documentation: The following SRL publications and documents appropriate only to the components ordered are shipped by PID with each initial BPS/360 order. The Volume numbers listed below correspond to machine readable VOL numbers.

————— Volume 1 —————

BPS/360 Programmer's Guide - 8K Tape (360P-AS-091) **GC24-3354-7**
 TNLs GN33-8569, 8596
 Note 1

BPS/360 Assembler with Input/Output Macros - 8K Tape (360P-AS-091) **GC24-3355-7**

BOS/BPS/360 Macro Definition Language - 8K Disk/Tape (360P-AS-091) **GC24-3364-3**
 TNL GN33-8639

BPS/360 Operating Guide - Basic Tape System - 8K (360P-AS-091; RG-201) **GC24-3391-4**
 TNLs GN33-8562, 8573, 8600
 Note 2

BPS/360 System Generation and Maintenance - Basic Tape System (360P-AS-091) **GC24-5061-4**
 TNL GN33-8636

BPS/360 Specifications - Report Program Generator (360P-RG-201) **GC24-3418-3**
 Note 3

————— Volume 2 —————

S/360 Basic FORTRAN IV Language (360P-F0-031) **GC28-6629-2**

BPS/360 FORTRAN IV Programmer's Guide (360P-F0-031) **GC28-6583-2**
 TNL GN28-0230

————— Volume 3 —————

BPS/360 Modular File Maintenance Program Specifications and Operating Guide (360P-UT-219) **GC24-5069-0**
 TNLs GN33-8590, 8607, 8662

BPS/360 Sort/Merge Program Specifications (360P-SM-043, 044) **GC24-3320-7**
 Note 4

BPS/360 Sort/Merge Program Operating Guide (360P-SM-043, 044) **GC24-3413-3**
 Note 5

BPS/360 Autotest Specifications 8K Tape (360P-PT-045) **GC24-3343-2**
 TNLs GN21-5025, 5068; GN33-8582, 8637

BPS/360 Operating Guide Autotest 8K Tape (360P-PT-045) **GC24-3417-2**
 TNLs GN21-5026, 5069; GN33-8642

————— Volumes 3 and 4 —————

BPS/360 Specifications - Card and Tape Utility Programs (360P-UT-050, 057, 202) **GC24-5026-2**
 TNL GN28-2340
 Note 6

BPS/360 Operating Guide - Card and Tape Utility Programs (360P-UT-050, 057, 202) **GC24-5027-4**
 TNL GN33-8658

BPS/360 Operating Guide Universal Character Set Utility Program (360P-UT-048) **GC24-3396-3**
 TNL GN28-2339

————— Volume 4 —————

BPS/360 DASD Utility Programs - Specifications (360P-UT-061, 069, 071, 072, 073, 098, 203, 204, 206, 207, 212) **GC24-3363-6**
 TNL GN33-8638

BPS/360 DASD Utility Programs - Operating Guide (360P-UT-061, 069, 071, 072, 073, 098, 203, 204, 206, 207, 212) **GC24-3392-8**
 TNL GN33-8641

BPS/360 Distribution Program Specifications and Operating Guide (360P-UT-208) **GC21-5001-1**

————— Volume 5 —————

BPS/360 Basic Assembler and Basic Utility Programs (Card) Specifications and Operating Guide (360P-UT-017, 018, 019, 020) (360P-AS-021) **GC28-6503-7**
 TNLs GN33-8697, 8659
 Note 7

BPS/360 Specifications - Report Program Generator - Card (360P-RG-200) **GC24-3374-2**
 Note 8

BPS/360 Operating Guide- Report Program Generator - Card (360P-RG-200) **GC24-3464-2**
 TNL GN21-5106
 Note 9

BPS/360 Support Programmer's Guide FORTRAN IV (360P-UT-208) **GC21-5000-1**
 TNL GN28-0219

BPS/360 Specifications - FORTRAN IV - 16K Card (360P-F0-205) **GC21-9040-1**
 TNL GN28-0223
 Note 10

————— Volume 6 —————

BPS/360 Input/Output 1412/1419 Specifications and Operating Guide (360P-IO-958) **GC24-3398-4**
 TNLs GN24-5228; GN33-8574

BPS/360 Input/Output 1418/1428 Specifications and Operating Guide (360P-IO-059) **GC24-3437-2**
 TNLs GN24-5350; GN33-8576

BPS/360 Input/Output 1231 (360P-IO-060) **GC24-3408-2**
 TNL GN33-8575

Form numbers which have changed since previous release are underlined.

- NOTE 1 SRL GC24-3354-6 plus TNLs GN24-5327, 5339, GN33-8541, 8569 and 8596 may be used in lieu of SRL GC24-3354-7 plus TNLs GN33-8569 and 8596.
- NOTE 2 SRL GC24-3391-3 plus TNLs GN24-5322, 5353, GN33-8539, 8562, 8573 and 8640 may be used in lieu of SRL GC24-3391-4 plus TNLs GN33-8562, 8573 and 8640.
- NOTE 3 SRL GC24-3418-1 plus TNLs GN24-5056, 5160, 5176, 5200, GN21-5059, 5087, 5094, 5097 and 5098 or SRL GC24-3418-2 plus TNLs GN21-5059, 5087, 5094, 5097 and 5098 may be used in lieu of SRL GC24-3418-3.
- NOTE 4 SRL GC24-3320-5 plus TNLs GN21-5028, 5052, and GN28-2346 or SRL GC24-3320-6 plus TNL GN28-2346 may be used in lieu of SRL GC24-3320-7.
- NOTE 5 SRL GC24-3413-1 plus TNLs GN21-5008, 5020, 5029, 5046, GN24-5027, GN28-2244 or SRL GC24-3413-2 plus TNLs GN21-5046 and GN28-2244 may be used in lieu of SRL GC24-3413-3.
- NOTE 6 SRL GC24-5026-1 plus TNLs GN21-5030 and GN28-2340 may be used in lieu of SRL GC24-5026-2 plus TNL GN28-2340.
- NOTE 7 SRL GC28-6503-6 plus TNLs GN33-8581, 8597 and 8659 may be used in lieu of SRL GC28-6503-7 plus TNLs GN33-8597 and 8659.
- NOTE 8 SRL GC24-3374-1 plus TNLs GN21-5065 and GN24-5052 may be used in lieu of SRL GC24-3374-2.
- NOTE 9 SRL GC24-3464-1 plus TNLs GN21-5066, GN24-5171 and GN21-5106 may be used in lieu of SRL GC24-3464-2 plus TNL GN21-5106.
- NOTE 10 SRL GC21-9040-0 plus TNLs GN21-5007 and GN28-0223 may be used in lieu of SRL GC21-9040-1 plus TNL GN23-0223.

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 - Machine Readable material for all 360P programs is contained on six (6) functional volumes. The machine readable for VOLS 1-5 is in object form. The machine readable for VOL 6 is in source form. See packaging chart.

Basic machine readable material for some 360P programs (see packaging chart) can be obtained in card form. If cards are preferred, specify each program desired in columns 4-12 and specify medium code 15 in columns 21-22 of the Program Order Form.

Current users for all the BPS programs will receive the following materials.

Documentation: Memo to user and attachments; Program Material List.

Publications will be distributed to affected current users for the programs they are registered for.

Machine Readable Material† - Machine readable material will be distributed to affected current users for the programs they are registered for.

† All maintenance machine readable material will be supplied on either one, two or three Distribution Tape Reel(s) or for customers requiring card, in card form. The DTR(s) will be 9-track 800 or 1600 GPI or 7-track 800 CPI (Data Conversion feature required) as specified in their original request for the programs.

Optional Program Package:

Documentation: Program Material List and appropriate Attachment.

Machine Readable: Optional machine readable material (source code) is contained on five functional volumes which contain the same program numbers per volume as the five basic volumes, numbers 1-5. (See packaging chart.)

Ordering Information: System Number 360P

Note: Both the 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. 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	VOL 1	MT 9/800	28	01
	VOL 2 thru VOL 6	DTR 7DC/800	26	none
		DTR 9/800	28	none
Optional	VOL 1	MT 9/1600	29	01
	VOL 2 thru VOL 5	MT 9/800	28	01
		MT 7DC/800	26	01
		MT 9/800	28	01

Additional Program Material:

Program Logic Manuals

BPS/360 Basic Assembler	GY24-5014 with TNL GN33-8653
BPS/360 Basic Utilities	GY24-5015 with TNL GN33-8654
BPS/360 FORTRAN IV (16K Card)	GY21-0001
BPS/360 Basic Tape System (8K) - System Control and IOCS	GY24-5010
BPS/360 Basic Tape System (8K) - Tape Assembler Program	GY24-5012 with TNL GN33-8651
BPS/360 Report Program Generator (8K Tape)	GY24-5028
BPS/360 FORTRAN IV (Tape)	GY28-6620
BPS/360 Sort/Merge (8K Tape, 1 & 2 Channel)	GY24-5008
BPS/360 Autotest (Tape)	GY24-5011 with TNL GN33-8650
BPS/360 Paper Document Support	GY24-5007 with TNL GN33-8649
BPS/360 Universal Character Set Utility	GY24-5013 with TNL GN33-8652
BPS/360 Modular File Maintenance Program	GY24-5096 with TNL GN33-8655

There are no Program Logic Manuals for Report Program Generator (Card), Card and Tape Utility Programs, and DASD Utility Programs.

Program Listings: A listing of all BPS/360 programs are available on microfiche from the IBM Corporation, Microfiche Distribution, Mechanicsburg ... Individual program listings are not available. Specify Group Code 2000. The listings are equivalent to the output listings produced by assembling the symbolic module(s) for the applicable BPS/360 program.

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

BPS/360 BASIC AND OPTIONAL PROGRAM MATERIAL PACKAGING

	Program Number Extension	Program Number Extension		Available on Cards
		Basic	Optional	
Basic Tape System (8K) RPG (8K Tape)	360P-AS-091* RG-201*	VOL1	VOL1	no no
FORTRAN IV (Tape)	360P-FO-031*	VOL2	VOL2	no
Card to Printer and/or Punch	360P-UT-060	VOL3	VOL3	yes
Card to Tape	UT-051			no
Tape to Printer	UT-052			no
Tape to Card	UT-053			no
Tape to Tape	UT-054			no
Multiple Utility	UT-055			no
Storage Print	UT-056		**	yes
Initialize Tape	UT-057			no
Sort/Merge (8K Tape) 1 Channel	SM-043			no
2 Channel	SM-044			no
Universal Character Set Utility	UT-048			yes
Autotest (Tape)	PT-045			no
Tape Compare	UT-202			no
Modular File Maintenance	UT-219			no
Copy Disk to Tape, Restore Tape to Disk	360P-UT-061	VOL4	VOL4	no
Copy Disk to Card, Restore Card to Disk	UT-062			yes
Storage Print	UT-056		**	yes
Initialize Tape	UT-057			no
Universal Character Set Utility	UT-048			yes
Card to Disk	UT-063			yes
Disk to Card	UT-064			yes
Disk to Tape	UT-065			no
Tape to Disk	UT-066			no
Disk to Disk	UT-067			yes
Clear Disk	UT-068			yes
Initialize Disk (2311)	UT-069			yes
Copy Data Cell to Tape, Restore Tape to Data Cell	UT-071			no
Copy Disk to Disk	UT-072			yes
Disk to Printer	UT-073			yes
Alternate Track Assignment	UT-086			yes
Multiple Disk to Printer	UT-203			yes
Initialize Data Cell	UT-204			yes
18K Initialize Disk (2311/2314)	UT-205			yes
18K Alternate Track Assignment (2311/2314)	UT-207			yes
Distribution Program	UT-208			no
Alternate Track Assignment (2321)	UT-212			yes
Basic Assembler	360P-AS-021	VOL5	VOL5	yes
Absolute Loader	UT-017			yes
Input/Output Support Package	UT-018		**	yes
Dump Program	UT-019			yes
Relocating Loader	UT-020			yes
Report Program Generator (Card)	RG-200			yes
FORTRAN IV (18K Card)	FO-205		**	yes
Input/Output 1412/1419	360P-IO-058	VOL6	***	yes
Input/Output 1418/1428	IO-059		***	yes
Input/Output 1231 N1	IO-080		***	yes

*These programs are directly tape loadable. Therefore, the file maintenance program is not present on Basic Volumes 1 and 2.

**Not optional material.

***Optional material not required as basic material is distributed in symbolic form.



**1130 COBOL SUBSET COMPILER
5711-CB1 IS ANNOUNCED**

A widely accepted language, COBOL now brings to 1130 customers and prospects a more extensive range of programming language support. 1130 COBOL implements a high level language designed according to specifications of the American National Standards Institute.

Highlights ... Operating under IBM's 1130 Disk Monitor System Version 2, 1130 COBOL is specifically designed for:

- . High speed compilation
- . Fast execution
- . Users requiring free form and unstructured programming
- . Users desiring highly definitive syntax editing of source programs.

The market for this language includes:

- . Educational Institutions - special error diagnostics have been provided for teaching assistance.
- . Engineering and Scientific firms with commercial applications.
- . Manufacturing, Distribution, Service and Process Industries
- . Other industries with programs and applications adaptable to the COBOL language.

The compiler requires an 1130 system with a minimum of 8K words of core, a card reader, one disk drive and a line printer. The compiler will make use of, and provides user program support for, core sizes of 16K or 32K words, up to a total of five disk drives, plus low and high speed card readers, punches, and line printers.

The 1130 American National Standard COBOL Subset uses the COBOL language as approved August 23, 1968 (American National Standard X3.23-1968 COBOL) in addition to incorporating certain IBM extensions. The language complies with the first draft International Standards Organization (ISO) Recommendation for COBOL.

The 1130 COBOL subset compiler supports the following levels of functional modules defined by American National Standards Institute:

- . 1 NUC 1,2 Nucleus
- . 1 SEQ 1,2 Sequential Access
- . 2 TBL 1,3 Table Handling

- . 1 RAC 0,2 Random Access
- . 1 LIB 0,2 Library

The American National Standard COBOL language is the result of a standardization effort of the American National Standards Institute (formerly known as the United States of America Standards Institute) using the CODASYL publication "COBOL, Edition 1965" as a base.

For details, see the reverse side. The Program Product Design Objectives (GH20-4062) are available from Mechanicsburg. An initial supply has been sent to each branch office.

Planned Availability ... February 26, 1971

Monthly Charge ... \$75.

Programming Service Classification ... A

No RPOs will be accepted at this time.

SE Skill Classification

SE Services, identified with and related to the installation and use of the IBM 1130 COBOL Subset Compiler (5711-CB1) Program Product, are available for a charge at the applicable skill classification rate as determined by the host system or its system operations environment. (See Sales Manual SE Section 2 for details.)

Program Product use during Customer Pre-Installation Testing-This Program Product will not be provided in Test Centers free of charge for customer use during testing.

John Fahey
WTS Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: July 1, 1970

Distribution: Australia, Canada, New Zealand, Selected European Countries, South Africa

COBOL (5711-CB1): 1130 COBOL implements a high level business language designed according to specifications of the American National Standards Institute. It operates under IBM 1130

Disk Monitor System Version 2.

Special Sales Information: The following is a comparison of 1130 COBOL to the currently available System/360 COBOL D, 360N-CB-452:

IDENTIFICATION DIVISION

DATE COMPILED is not included

ENVIRONMENT DIVISION

CONFIGURATION SECTION

SOURCE-COMPUTER

COPY is included

OBJECT-COMPUTER

COPY is included

MEMORY SIZE is included

Special Names

COPY is included

Implementor-name IS mnemonic-name is included

ON STATUS is included

OFF STATUS is included

Implementor-name series is included

CURRENCY SIGN is included

INPUT-OUTPUT SECTION

FILE-CONTROL

ASSIGN TO Implementor-name series is included

MULTIPLE UNIT is included

FILE-LIMIT is included

DATA DIVISION

Spanned Records are included

Variable length records are not included

OCCURS

3 levels of indexing are included

Indexed by index-name

index-name series is included

DEPENDING UPON is not included

USAGE IS INDEX is included

VALUE OF is included

SYNCRHONIZED is included

Abbreviations PIC, JUST, COMP, SYNC are included

Alphameric Items: A X 9 in same PICTURE are included

Alphameric Edited Items: A X 9 Q B are included

PROCEDURE DIVISION

Switch-Status Condition is included

ACCEPT (expanded use)

FROM mnemonic-name is included

DISPLAY (expanded use)

UPON mnemonic-name is included

DIVIDE

BY identifier is included

IF

Nesting is not included

SEEK is included

SET

Index-name identifier is included

Index-name series is included

UP BY is included

DOWN BY is included

USE

Declaratives are not included

WRITE

BEFORE ADVANCING is included

Mnemonic-name is included

CONTINUATION OF LINES

Continuation of Words and Numeric Literals is included

1130 COBOL will not include several IBM extensions currently available on System/360 COBOL D, 360N-CB-452. These exclusions are as follows:

- Indexed Sequential
- Packed Decimal
- Floating Point
- The TRANSFORM Verb

Customer Responsibilities: The user of 1130 COBOL must have installed and be familiar with the IBM 1130 Disk Monitor System Version 2 (1130-OS-005) ... meet minimum machine configuration (described below) ... train system analysts, programmers, and operators ... maintain a Source Library if one is desirable ... generate 1130 COBOL ... design COBOL application programs.

Programming Systems: The 1130 COBOL Compiler is written in 1130 Assembler Language and operates under control of the IBM 1130 Disk Monitor System Version 2 (Program 1130-OS-005). The COBOL Compiler requires that the COBOL Source statements be in card form. The user should note that statements can be stored in the Source Library on disk and COPYd into a program when required.

Minimum Machine Configuration: An 1130 Model 2B (8K words, 1 disk) CPU with feature #3616 (1132 attachment), #3854 (Expansion Adapter), #4454 (1442 Model 6 or 7 attachment) ... 1132, Model 1 Printer ... 1442, Model 6 Card Read Punch.

FOR IBM INTERNAL USE ONLY

Basic Program Product Offering:

Unlicensed Documentation: One copy each of Operations Manual,* Programmer's Guide.*

Licensed Machine Readable Material: One copy of Machine Readable Materials containing the 1130 COBOL Compiler Object Code.

To order the basic package use the following specify number:

Specify Number	Description
9015	cards

Charge:

Type	Program and DPMO Number	Programming Service Classification	Monthly Charge
5711	CB1	A	\$75

Optional Support Package (no charge):

Licensed Documentation: One copy of Program Logic Manual (Feature #8011).

Licensed Machine Readable Material: One reel of Magnetic Tape containing the 1130 COBOL Source Code for punching on S/360.

To order the optional package select one of the following feature numbers:

Customer Supplied	Feature Number	Order From IBM	Track/Density	Description	Quantity
7028		7128	9/800	2400' MT	1 reel
		7030	9/1600	DTR	None

Related Documentation: General Information Manual, Language Specifications (availability will be announced in a Publications Release Letter) ... Program Product Design Objectives (GH20-4062).

*Prices and form numbers (feature number) for copies of documentation will be announced when the program is available.

Note to World Trade Readers

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- (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 this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarters, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
- (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 references 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.
- (9) World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- (10) Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

IBM World Trade Data Processing

Program Product Announcement

**OS/360 REQUIREMENTS PLANNING
READY FOR SHIPMENT**● **Program Product 5734-M51****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.

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- (2) Advance copies of the form numbered publications mentioned in this letter either have been distributed through the DP Automatic Publications Service (DAPS) to country headquarter, branch office and support center locations, or will be distributed when available. Requisition additional copies from the Supply source indicated when availability is announced in the weekly DP Marketing Publications Release letter distributed weekly to local DP Literature Coordinators. Customers enrolled in the Systems Libraries Subscription Service (SL/SS) for the system configuration involved will receive their copies by direct mail.
- (3) When a new version of a program is announced, current users must order it; they will not receive it automatically nor will they necessarily receive a prepunched request card in their Area.
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- (6) Any references 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).
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- (9) World Trade now identifies certain current programs with a Programming Service Classification of A, B, or C. Programming services to WT customers remain unchanged for programs classified A or B and for programs available only in World Trade. After January 1, 1970, Programming services for programs classified C will not include centralized Authorized Program Analysis Report (APAR) programming service or automatic distribution of corrections.
- (10) Availability of machines or features not described in the World Trade Sales Manual should be verified with local Special Equipment Engineering.

OS/360 Requirements Planning, now ready for shipment, offers a large segment of the manufacturing industry a mechanized approach to detailed requirements planning.

It enables determination of the net requirements for finished and component parts, establishment of planned orders based on the predetermined order policy, and offset of planned orders with respect to lead time.

Demand projections, safety stock levels, allocations, shrinkage factors and a wide range of other planning functions are features of this versatile program product. (For details, see page PPA 360.26 in the Program Product section of your sales manual.)

Program Product Specifications (GH20-4005) are available from Mechanicsburg; each branch office has been sent a limited supply.

No RPOs will be accepted at this time.

See the reverse side for ordering instructions.

SE Skill Classification ...

SE Services, identified with and related to the installation and use of the IBM OS/360 Requirements Planning (5734-M51) Program Product, are available for a charge at the applicable skill classification rate as determined by the host System or its System Operating Environment (see Sales Manual SE Section 2 for details).

Monthly Charge ... \$200.00

Programming Service Classification ... B

Program Product use during Customer Pre-Installation Testing ... This Program Product will not be provided in Test Centers free of charge for customer use during testing.

John Fahey
WTS Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: July 1, 1970
Distribution: Australia, Canada, New Zealand, Selected European Countries, South Africa

P70-90B

Basic Material:

Unlicensed Documentation: One copy each of the Program Description Manual (SH20-0777) ... Operations Manual (SH20-0782) ... Program Product Specifications (GH20-4005).

Licensed Machine Readable Material: One copy of machine readable material consisting of source code plus a sample problem.

To order the basic material, select one of the following specify numbers:

Specify Number		Track/Density	Description	Qty.
2311 User	2314 User			
Customer Supplied				
9026	9226	7 DC/800	2400'MT	1 reel
9028	9228	9/800	2400'MT	1 reel
9029	9229	9/1600	2400'MT	1 reel
Order from IBM				
9126	9326	7 DC/800	2400'MT	1 reel
9128	9328	9/800	2400'MT	1 reel
9129	9329	9/1600	2400'MT	1 reel

Charge:

Type	Program & DPMO Number	Programming Svce. Classification	Monthly Charge
5734	M51	B	\$200

Related Optional Material (no additional charge): To order, specify feature 7040.

Licensed Documentation: One copy of System Manual.

Charges for Additional Copies of Documentation:

Licensed Documentation:

Feature/Form Number	Single Charge/Copy
System Manual 8010 (LY20-0543)*	\$29.00

Unlicensed Documentation:

	Selling Price/Copy
Program Description Manual (SH20-0777)**	\$13.50
Operations Manual (SH20-0782)**	1.70

General Documentation (available only from Mechanicsburg): Application Description Manual (GH20-0751).

*For customer, order by feature number from Area Program Library and bill customer; for IBM internal use, order by form number from Mechanicsburg.

**Order from Mechanicsburg.



**DOS/360 SUBSET OF AMERICAN NATIONAL
STANDARD COBOL COMPILER
ANNOUNCED**

● Program Product 5736-CB1

Today, IBM offers a new Standard COBOL subset compiler for DOS/360 users ... **DOS/360 subset of the American National Standard COBOL.** It significantly extends the range of language function and facilities available to DOS customers with 32K systems. This new program product (5736-CB1) is a subset of the Full DOS Standard COBOL currently available.

Major new features available in the DOS/360 Standard COBOL Subset Compiler and not in COBOL D are:

- . Segmentation
- . Table handling
- . Write before advancing
- . Corresponding option for MOVE, ADD and SUBTRACT
- . Comments in the Data Division
- . Cross Reference Listing
- . Condensed procedure Map Listing

The Type I Language Conversion Program 360N-CV-489 is currently available to reduce the cost and time to convert existing COBOL D Programs to Standard COBOL.

The availability of COBOL D and its programming service classification A are not affected by this announcement. No further enhancements will be made to COBOL D.

Sales Information ... Since this program product executes in a 20K byte background partition, DOS customers with 32K or larger systems are prime candidates. This product provides significant functional enhancements over COBOL D and is also upward compatible to the Full DOS American National Standard COBOL Compiler.

Planned Availability ... June 1971

Monthly Charge ... \$150.

Program Service Classification ... A

An initial supply of the Program Product Design Objectives for the Standard COBOL Subset (GC28-6401) has been sent to each DP branch office librarian.

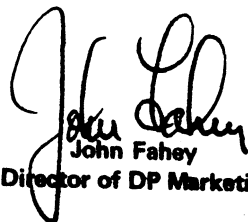
RPOs are not accepted at this time.

The reverse side contains the full sales manual text.

SE Skill Classification

SE Services, identified with and related to the installation and use of the IBM Standard COBOL subset compiler (5736-CB1) Program Product, are available for a charge at the applicable skill classification rate as determined by the host system or its system operations environment. (See Sales Manual SE Section 2 for details.)

Program Product use during Customer Pre-Installation Testing—This Program Product will not be provided in Test Centers free of charge for customer use during testing.


John Fahey
WTC Director of DP Marketing

FOR IBM INTERNAL USE ONLY

Release Date: July 1, 1970

Distribution: Australia, Canada, New Zealand, Selected European Countries, South Africa

P70-90C

**DOS/360 American National Standard Subset
COBOL Compiler and Library 5736-CB1:**

This compiler translates programs written in a subset of the American National Standard COBOL language

into object modules that can be linkage edited under the Disk Operating System. IBM extensions to the American National Standard language are also provided. The Library contains subroutines that are linkage edited into the object programs as a result of using various features of the language.

The following new features, available in the American National Standard Full COBOL compiler, 360N-CB-482, but not in COBOL D, 360N-CB-452, are available in the Subset.

- . Segmentation
- . Table Handling
- . Write Before Advancing
- . Corresponding Option for MOVE, ADD, SUBTRACT
- . Comments in Data Division
- . Cross Reference Listing
- . Condensed Procedure Map List

Programming System

The compiler and its object programs execute under the IBM 360 Disk Operating System.

Minimum Machine Configuration

For Compilation

System/360 Model 25, 30, 40, 50, 65, 67 (in 65 mode), or 75. Included must be the Standard Instruction Set and the Decimal Arithmetic Feature #3237. The Floating Point Arithmetic Feature #4427 is also required if floating point literals, data items, or non-integer exponents are used. 32K bytes of Main Storage are required, of which 20K bytes are required for the compiler ... One disk storage device for system and compiler residence ... One printer ... One card reader ... One console typewriter.

Sufficient on-line storage, which may be either tape or disk, must be provided to contain the three compiler work files if they cannot be contained on the system residence device. For link-editing, sufficient on-line disk storage must be available to contain the Subroutine Library and the Link Editor Work Files.

For Object Program Execution

The object program requires System/360, model 25, 30, 40, 50, 65, 67 (in 65 mode) or 75 with a core storage area capable of containing the DOS System Control Program and the object program. If the programmer makes use of the new segmentation feature, the core storage requirement will be reduced to the total of the Control Program, the fixed portion of the object program, and the largest independent (overlayable) segment. The standard instruction and decimal arithmetic sets are required, and the floating point option is needed if the program uses non-integer exponents, floating point literals, or floating point data items. Support for object files corresponds to the present support for COBOL D programs. This includes support for the following devices: 1403 Printer ... 1404 Printer ... 1442 Card Reader Punch (Model N1) ... 1442 Card Punch (Model N2) ... 1443 Printer ... 1445 Printer ... 2311 Disk Storage Drive ... 2314 Direct Access Storage Facility ... 2321 Data Call Device ... 2400 Series Magnetic Tape Unit ... 2501 Card Reader ... 2520 Card Reader Punch (Model B1) ... 2520 Card Punch (Model B2 and B3) ... 2540 Card Read Punch.

American National Standard COBOL Considerations

The American National Standards Institute approved the American National Standards Institute Standard COBOL (ANSI STANDARD X3.23-1968-COBOL) on August 23, 1968. The following functional processing modules of the American National Standards Institute standard are included in the Subset Compiler:

- 2 Nucleus 1, 2
- 2 Sequential Access 1, 2
- 2 Random Access 0, 2
- 1 Library 0, 2
- 2 Table Handling 1, 3
- 1 Segmentation 0, 2

The first digit above represents the level of the modules included in the compiler; the second digit represents the lowest level in the American National Standards Institute Standard (0 implies that the module may be completely missing from some standard compilers); the third digit represents the highest level of the American National Standards Institute standard.

IBM implementation of the American National Standard COBOL complies with the first draft International Organization for Standards (ISO) recommendation for COBOL.

Compatibility

The subset compiler is laterally compatible with the COBOL D compiler only to the extent that the subset compiler provides all functions currently available in COBOL D, with one exception.

This exception occurs in the option of the COPY statement which has the following form:

01 data-name COPY library-name

In a COBOL D compilation, data-name replaces not only the corresponding data-name in the library, but also any occurrence of the data-name as a qualifier of the object of an OCCURS clause with the DEPENDING ON option. The subset compiler does not replace these qualifiers.

Basic Program Product Offering

Unlicensed Documentation: One copy each of IBM System/360 Disk Operating System American National Standard Subset COBOL SRL, GC28-6403;

IBM System/360 Disk Operating System American National Standard Subset COBOL Compiler General Information Manual GC28-6402;

IBM System/360 Disk Operating System American National Standard Subset COBOL Programmer's Guide*.

Licensed Machine Readable Material: One copy of the machine readable materials containing the Subset COBOL Compiler and Library.

To order, specify one of the following numbers:

	Specify Number	Track/Density	Description	Quantity
	9025	7DC/800	DTR	--
	9027	9/800	DTR	--
	9030	9/1600	DTR	--
Order from IBM:	9152	--	1316 Disk Pack	1
Customer Supplied:	9052	--	1316 Disk Pack	1

Charge:

Type	Program & DPMO Number	Programming Service Classification	Monthly Charge
5736	CB1	A	\$ 150

Optional Support Package

Licensed Documentation: One copy of IBM System/360 Disk Operating System American National Standard Subset COBOL Program Logic Manual (Feature #8025).*

Licensed Machine Readable Material: One copy of machine readable materials containing the source code for the Subset COBOL Compiler and Library.

*Prices for the Programmer's Guide and the PLM will be announced when the program is available.

	Feature Number	Track/Density	Description	Quantity
Customer Supplied:	7028	9/800	2400 ⁰ MT	1
	7029	9/1600	2400 ⁰ MT	1
	7026	7DC/800	2400 ⁰ MT	1
Order from IBM:	7128	9/800	2400 ⁰ MT	1
	7129	9/1600	2400 ⁰ MT	1
	7126	7DC/800	2400 ⁰ MT	1

Charge for Additional Copies of Documentation:

Unlicensed Documentation: (Order from Mechanicsburg, customer will be billed by Mechanicsburg through AOO):

	Selling Price/Copy
DOS/360 American National Standard Subset COBOL GC28-6403	\$ 9.40
DOS/360 American National Standard Subset COBOL Compiler General Information Manual GC28-6402	.40

RPOs are not accepted at this time.

Reference Publications:

IBM System/360 COBOL Differences: American National Standard COBOL Conversion, C28-6395.

IBM System/360 Conversion AIDS: COBOL-to-American National Standard COBOL Language Conversion Program, C28-6400.

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