DATA BASE
PMOL
REV-DATE 8303

TITLE 5702-SC1 - DISK ORIENTED SYSTEM/3 MODEL 10/MODEL 8

1.0 PURPOSE
 SYSTEM/3 DISK SYSTEM MANAGEMENT PROGRAMS: The disk system management
 programs are designed to generate and maintain a disk resident system which
 facilitates the compilation, generation, and execution of programs.
 The disk resident system must reside on a 5444 Disk Storage Drive.

2.0 HIGHLIGHTS
 The management programs consist of a supervisor and a scheduler which
 provide the user with the advantages of:
 - Reduced card handling.
 - Automatic job-to-job transition.
 - Selective retrieval of programs stored in object libraries on disk.
 - Selective retrieval of programs and procedures stored in source
    libraries on disk.
 - Functional ability of expanded core storage (program overlay).
 - Support of ROLL IN/ROLL OUT capability - The ability to rollout a
    program during its execution, bring in an inquiry program to be
    executed and upon its completion, restart the original program.
    To use ROLL IN/ROLL OUT, a 5471 Printer-Keyboard is required.
 - Support of Dual Programming feature - Through the use of operations
    control and dual program loading features, an expanded version of the
    supervisor controls program initiation, execution, and termination
    asynchronously in each of two partitions. Neither the printer, 3881,
    MFCU and/or 1442 can be used by both program levels. Disk Data files
    may be shared, but only one program level may write to a shared file.
    The 5471 Printer-Keyboard may be used by both program levels for
    either object program input/output or operations control information.
    Three programs which will not run in the Dual Program mode but can
    run in a dedicated mode with the Dual Program Supervisor are the
    Basic Assembler program (5702-ASl), the Utility program for the 1255
    Magnetic Character Reader (5707-UT2), and the Library Maintenance
    program (5702-SC1).
 - Data Management and I/O support for the control of Input/Output Services.
 - Execution of programs from cataloged procedures - Operation Control
    Language Procedures can be cataloged in the Source Program Library
    and called by the scheduler at job execution time.

3.0 DESCRIPTION
 LIBRARY MAINTENANCE PROGRAM: Allows the user to produce, maintain, and
 service the system disk and the source and object program libraries.
 The libraries may reside on any 5444 Disk Storage Drive. The system residence
 must be on either the fixed or removable disk of Drive 1. The principle
 functions of the program are to add or delete the source programs,
 procedures, and object programs in the user's program libraries, to
 allocate or re-allocate disk space to the libraries, to display library
 contents, and to copy any or all of a library from one disk to another.
 DISK UTILITY PROGRAMS: These programs are provided to allow the user to
 prepare and maintain his disks. They are:
 - Disk Initialization - Performs surface analysis on the user's disk
    and formats the disk according to disk system management require-ments.
 - Alternate Track Assignment - Allows the user to assign an alternate
    track in place of a defective one and print the data content of the
    area in error.
 - Alternate Track Rebuild - Permits the user to cottect data on the
    assigned alternate track.
 - File and Volume Display - Permits the user to display the entire
    contents of the volume table of contents on any disk or individually
    by file name.
 - File Delete - Is one means for deleting temporary data files from a
    disk and the only means for the user to delete permanent data files
    from a disk.
 COPY/DUMP PROGRAM: This program supports both file-to-file copies (COPY)
 and volume-to-volume copies (DUMP).
 The file copy routines provide the user with an easy to use method of

creating a file backup on another disk, diskette, cards, tape, or printer.
Additionally, it provides an easy method of moving files from one location
to another, with both file limit modification and reorganization.
The program supports one input and one output per execution. Disk input can be
a sequential, indexed, or direct file.
A sequential file can be copied to an indexed file, and tape, card, and
diskette files are supported for input and output. When copying a file,
the printer may be specified in addition to other output. Records may be
deleted from a file by specifying a deletion code and position within each
record; these deleted records may be printed.
The volume copy function of the Copy/Dump Program copies an entire disk
volume to another disk volume for backup.
The Copy/Dump Program allows for intermediate mountings of the output disk
so that files and entire disk volumes may be copied on a one drive system.
Intermediate mounting is only permitted for the 5444 Disk Storage Drive.
1255 AND 1419 DATA MANAGEMENT: SCP subroutines are supplied to perform
device control and data management services for the 1255 and 1419 Magnetic
Character Readers. The 1255 subroutine (SUBR08) and the 1419 subroutine
(SUBR09) are used with a user-written RPG II or Assembler program, and are
functionally equivalent to the mdls 12 and 15 1255 (SUBR08) and 1419
(SUBR09) SCP support.

4.0   SPECIFIED OPERATING ENVIRONMENT
4.1   HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENT: The Disk System Control Programming operates
 on an IBM System/3 mdl 10 which includes as a minimum an IBM 5410
 Processing Unit mdl A13 (12K bytes), an IBM 5424 MFCU mdl Al or an IBM 1442
 Card Read Punch mdl 6, an IBM 5203 Printer or 1403 Printer and an IBM 5444
 Disk Storage Drive mdl 1.
 A minimum System/3 mdl 8 includes an IBM 5408 Processing Unit mdl A14 (16K
 bytes), an IBM 5203 Printer, an IBM 5444 Disk Storage Drive mdl A1, and
 either an IBM 3741 Data Station directly attached or an IBM 5471
Printer-Keyboard.
 Additional main storage and disk capacity will be utilized if available.
 The following configurations require at least 16K bytes of main storage:
 -   Dual Programming and IBM 5445/5448 Disk Storage Drive
 -   Dual Programming and IBM 3410/3411 Magnetic Tape Subsystem
 Certain other configurations may require a minimum system of more than 12K:
 (1) when the supervisor requirement is greater than 4K (see "Supervisor
 Sizes" at the end of the SCP writeup for mdl 10); or (2) when program
 products require it.
4.2   SOFTWARE REQUIREMENTS (None)

5.0   REMOTE JOB ENTRY STATION
                         (FEATURE #6004-#6006)
5.1   PURPOSE
 The Disk version of the RJE Program provides the user with the same
 functional capabilities as the card version. Additional function to
 support the 5444 Disk Storage Drive as an RJE I/O device is included.
 The RJE support requires a logging device. Therefore, if the dual program
 feature is to be used and the non-RJE program requires use of the printer,
 an IBM 5471 printer-keyboard is required. This program is loaded and
 executed under control of Disk System Management programs.
5.2   PERFORMANCE
 The RJE Work Station support requires a partition size of approximately
 5,120 bytes of main storage.

6.0   MACROS FEATURE
                         (FEATURE #6020-#6021)
6.1   PURPOSE
 This feature is applicable to System/3 mdl 8. The feature makes available
 to the user data management and input/output support for the control of
 input/output services through assembler languages. The I/O services are
 available to users of assembler languages through the system generation
 link processor (macro processor) in conjunction with the disk system
 input/output service macros. The keyword macro statements coded by the
 user are expanded by the macro process or using the macro prototype
 definitions. The expanded code is in a form that can be processed by an

assembler. The macro processor is included in the user's system at the
user's option.
The Macros feature (#6020-#6021) is made available to support the user who
has requirements that are unsupported in other programming support and it
is recommended that it be used only in that environment.
6.2   SPECIFIED OPERATING ENVIRONMENT
6.3   HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENTS: Same as for 5702-SC1.
6.4   SOFTWARE REQUIREMENTS: 5702-SC1.

7.0   5445 DISK STORAGE DRIVE FEATURE
                         (FEATURE #6022-#6023)
7.1 PURPOSE
 This feature is not applicable to System/3 mdl 8. The IBM 5445 Disk
 Storage Drive Feature provides support of the 5445 Disk Storage Drive as an
 input/output and data storage device. The 5445 Disk Storage Drive is not
 supported for either system or library residence.
7.2 DESCRIPTION
 In addition to the disk system management functions, the following
 facilities are provided:
 DISK UTILITY PROGRAMS: The Disk Utility Programs which are provided for
 the disk user to prepare and maintain his 5445 disks will include:
 -   Disk Initialization Utility
 -   Alternate Track Assignment Utility
 -   Alternate Track Rebuild
 -   Volume and File Display
 -   File Delete
 COPY/DUMP PROGRAM: This program provides the user with an easy-to-use
 method of copying a file or a complete disk backup on another disk.
 All features of the Copy/Dump Program for the 5445 are provided for the 5444
 user with the exception that no intermediate mountings of the output pack
 on the 5445 are allowed for the COPYPACK function.
 5445 DATA INTERCHANGE UTILITY PROGRAM: This program is used prior to
 taking a 2316 Disk Pack from System/3 to System/360 or System/370 for
 processing, or prior to using the disk pack on System/3 after returning
 from System/360 or System/370. To use a 2316 Disk Pack in an interchange
 environment, it must have been initialized on System/3, and the interchange
 files must have been allocated on System/3. System/360 or System/370 OS or
 DOS may read, update, or in OS only, OUTPUT to these files, but may not
 create or extend them since OS and DOS do not create or update the System/3
 Volume Table of Contents (VTOC).
7.3   SPECIFIED OPERATING ENVIRONMENT
7.4   HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENT: In addition to the requirement of 5702-SC1,
 this feature requires an IBM 5445 Disk Storage Drive.
7.5 SOFTWARE REQUIREMENTS: 5702-SC1.

8.0 MAGNETIC TAPE SUPPORT FEATURE
                         (FEATURE #6024-#6025)
8.1 PURPOSE
 This feature is applicable to System/3 mdl 8. The Disk SCP Magnetic Tape
 Support feature provides support for magnetic tape as a data storage device
 on System/3 mdl 10. The features provided are:
 -   Fixed and variable length records
 -   Blocked and unblocked records
 -   Physical block size from 18 bytes to 32K bytes
 -   Multi-volume files
 -   Support for unlabelled or labelled (ANSI or IBM Standard labels) tapes
 -   ASCII and EBCDIC data support
 -   Tape Error Statistics
8.2   DESCRIPTION
 TAPE INITIALIZATION PROGRAM: Allows the magnetic tape users to create
 and delete standard tape volume labels, check for unexpired labels and to
 display existing volume and data file labels.
 TAPE ERROR SUMMARY PROGRAM: Prints tape error statistics that have
 been accumulated during processing.
 DUMP/RESTORE PROGRAM: Provides capability for model 10 tape-disk
 configurations to obtain backup of disk packs. It copies an entire 5444 or

5445 or 5448 disk volume to tape and restores a disk from a tape previously
created by this program. Some of the options supported are 7- or 9-track,
EBCDIC only, one pack per tape reel but multiple reel files are supported,
and requires only minimum main storage.
8.3 SPECIFIED OPERATING ENVIRONMENT
8.4 HARDWARE REQUIREMENTS
 MINIUM SYSTEM REQUIREMENTS: In addition to the requirements of 5702-SC1,
 this feature requires the IBM 3410/3411 Magnetic Tape Subsystem.
 All available features of these tape drives are supported by this feature.
8.5 SOFTWARE REQUIREMENTS: 5702-SC1.

9.0 OVERLAY LINKAGE EDITOR AND CHECKPOINT/RESTART FEATURE
                         (FEATURE #6026-6027)
9.1 PURPOSE
 This feature is applicable to System/3 mdl 8. The Overlay Linkage Editor
 facility creates loadable programs from multiple relocatable modules.
 Output from the Overlay Linkage Editor may be cataloged in the Object
 Library and/or punched into cards. Overlay structures may be created
 automatically or as designated by the user from relocatable program modules.
 The Checkpoint facility provides the user with the ability to write
 checkpoint records when using problem programs that have Checkpoint/Restart
 capabilities. Restart provides the facility to resume the execution of
 programs from the last checkpoint rather than from the beginning, if
 processing is terminated via a machine failure or an operator-initiated
 immediate cancel.
 This feature is a prerequisite for the Basic Assembler program (5702-AS1),
 Subset ANS COBOL (5702-CBl), and Disk FORTRAN (5702-F01).
9.2 SPECIFIED OPERATING ENVIRONMENT
9.3 HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENTS: Same as for 5702-SC1.
9.4 SOFTWARE REQUIREMENTS: 5702-SC1.

10.0 BSCA MULTILINE/MULTIPOINT FEATURE
                         (FEATURE #6030 OR #6031)
10.1 PURPOSE
 The BSCA Multiline/Multipoint feature provides communications support when
 used in conjunction with the System/3 Macros feature #6020 or #6021.
 Configurations supported are point-to-point nonswitched, point-to-point
 switched and multipoint leased line with the System/3 as a multi-dropped
 terminal or control station. Also provided is the capability to operate
 two BSCA lines simultaneously on one System/3. The two BSCAs may have
 different configurations.
 For a list of supported BSC devices and of the communications modes in
 which each device is supported (e.g., point-to-point, multipoint, etc.),
 see page M5408 or M5410. Support for the 3270 terminals via the Local
 Display Adapter (mdl 8 only) is also included.
 Program counters will be maintained on the disk file to accumulate
 performance information per BSC line. Counters will be logged to the file
 at close time. A utility program will be provided to display the counters.
 The BSCA IOS routines depend on the model 10 Disk System Control
 Programming (5702-SC1) for systems functions. Additional storage is
 required in the supervisor for support of BSCA. RPG II Telecommunications
 feature (5702-RGl) must not be used in the same RPG II generated program to
 which subroutines using the Multiline/Multipoint feature are linked.
10.2 SPECIFIED OPERATING ENVIRONMENT
10.3 HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENTS: The BSCA Multiline/Multipoint Feature
 requires for source program compilation the same minimum system as the
 IBM Disk model 10 System Control Programming (5702-SC1). For execution of an
 object program on the IBM 5410 Processing Unit using BSCA (#2074 or #2084)
 to control communication with multidropped terminals on a multipoint line,
 a minimum of l6K bytes of storage and a log device are required.
 For execution of an object program on an IBM 5408 Processing Unit using
 either the ICA (#4645 with #6202 or #4801 or #4802) or the BSCA (#2074) to
 control communications with multi-dropped terminals on a multipoint line,
 a minimum model 8 System and a log device are required.
10.4 SOFTWARE REQUIREMENTS
 5702-SC1, 5702-SCI feature #6020/#6021; 5702-ASI or its equivalent.

11.0 COMMUNICATIONS CONTROL PROGRAM
-                    (FEATURE #6033)
11.1 PURPOSE
 The Communications Control Program (CCP) feature provides control program
 services needed for telecommunications systems. The services are:
-   High Level language (RPG II, COBOL, FORTRAN) access to MLTA, BSCA
     (including the Integrated Communications Adapter) and Local Display
     Adapter attached terminals.
-   Program Fetch as a result of terminal operator request.
-   Resource Management to reduce contention between programs accessing
     the same files, provide access to terminals and manage storage
     available for application programs.
-   Concurrent program execution allowing multiple application programs
     within the available storage.
-   Terminal Monitoring to accept data and terminal commands.
-   Display Format Facility (DFF) which permits the support of 3270
     systems with a minimum of coding in high level languages.
11.2 DESCRIPTION
 TERMINALS AND FEATURES SUPPORTED: The following terminals may be used with
 the Communications Control Program:
-   THROUGH THE MULTIPLE LINE TERMINAL ADAPTER (MLTA) (MODEL 10 ONLY):
     -   1050 Data Communication System
         Multipoint switched
         Multipoint nonswitched
     -   2740 Communication Terminal model 1
         Basic
         Checking
         Dial
         Dial with checking
         Dial with transmit control
         Dial with transmit control and checking
         Station control
         Station control with checking
     -   2740 Communication Terminal model 2
         Station control
         Station control with checking
         Station control with buffer receive
         Station control with buffer receive and checking
     -   2741 Communication Terminal
         Basic
         Switched
     -   3767 Communications Terminal
         Treated as a 2740 Communication Terminal (model 1
         or 2) or as a 2741 Communication Terminal
     -   Communicating Magnetic Card SELECTRICR Typewriter
         (appears identical to a 2741)
         Point-to-point switched
     -   System/7 (appears identical to a 2740 model 1) Checking
         Dial with checking
         Station control with checking
         5100 Portable Computer
         (appears identical to a 2741)
     WITH THE BINARY SYNCHRONOUS COMMUNICATIONS ADAPTER (BSCA):
     -   3270 Information Display System
         Point-to-point nonswitched
         Multipoint nonswitched
         Point-to-point switched (3275 only)
     -   3735 Programmable Terminal
         Switched
         Multipoint nonswitched
     -   3741 Data Station model 2 and 3741 Programmable Workstation model 4
         Point-to-point (switched and nonswitched)
         Multipoint tributary
     -   5110 Computer (as a data mode CPU)
         Point-to-point (switched and nonswitched)
         Multipoint tributary
     -   5231 model 2 (appears as a 3741-2 or 4)

          Point-to-point (switched and nonswitched)
          Multipoint tributary
     -    5280 Distributed Data System
          Point-to-point (switched and nonswitched)
          Multipoint tributary
     -    Series/l
          Switched
          Nonswitched point-to-point
     -    System/3
          Switched
          Nonswitched point-to-point
          Multipoint control station
          Multipoint tributary
     -    System/7
          Switched
          Nonswitched point-to-point
     -    Multipoint (System/3 is control station) System/32
          Switched
          Nonswitched point-to-point
          Multipoint (System/3 is tributary)
     -    System/34
          Switched
          Nonswitched point-to-point
          Multipoint (System/3 is control station)
     -    System/360, System/370
          Switched
          Nonswitched point-to-point
          Multipoint (System/3 is tributary)
-    WITH THE LOCAL DISPLAY ADAPTER (MODEL 8 ONLY)
     -    3270 terminals only
          3277 Display Station (model 1 or 2)
          3284 Printers (model 1 or 2)
          3286 Printers (model 1 or 2)
          3288 Printer (model 2)
In addition to controlling terminals, the System/3 can operate as a
tributary terminal (BSCA only) to a host System/360 or System/370. In this
configuration, the System/3 is a sub-host controlling terminals, and is
itself a terminal to another system.
11.3   SPECIFIED OPERATING ENVIRONMENT
11.4   HARDWARE REQUIREMENTS
HARDWARE REQUIREMENTS - IBM MODEL 10: The following is the minimum
hardware necessary for a communications-based information system using the
Communications Control Program:
-    IBM 5410 model A15 Processing Unit (24,576 bytes of main storage)
-    IBM 5410 model A16 Processing Unit (32,768 bytes of main storage) if
     DFF is used to support an IBM 3270 Information Display System
-    One IBM 5444 model 2 Disk Storage Drive
-    IBM 5471 Printer-Keyboard
-    IBM 5424 Multi-Function Card Unit (MFCU) or IBM 1442 Card Read/Punch
     (required during CCP generation, but not required for operation)
-    IBM 5203 or 1403 Printer (required during CCP generation, but not
     required for operation)
-    Multiple Line Terminal Adapter RPQ (RPQs S40028 through S40033) or
     one Binary Synchronous Communications Adapter
     At least one communications terminal of a type listed under
     "Terminals and Features Supported".
With the above configuration, no more than one application program may be
executing at a time. The minimum main storage size in which concurrent
execution of more than one program is supported is 32,768 bytes (IBM 5410
model A16) and is 49,152 bytes (IBM 5410 model A17) if DFF is used to
support the IBM 3270 Information Display System.
ADDITIONAL HARDWARE SUPPORTED - MODEL 10:   The following additional
hardware facilities are supported by the Communications Control Program:
-    Up to 49,152 bytes of main storage (65,536 bytes by RPQ)
-    IBM 5444 Disk Storage Drive model 2, 3, AOl, A02, A03
-    One or two IBM 5445 Disk Storage Drives (for data files only)
-    IBM 5448 Disk Storage Drive model Al (for data files only)
-    Both 5424 MFCU and 1442 Card Read/Punch (by RPQ)

- One directly attached 3741 Data Station/Programmable Workstation
- Two Binary Synchronous Communications Adapters and one Multiple-Line Terminal Adapter with up to eight lines
- Dual Program Feature (see Note)

NOTE: The Communications Control Program does not require the dual program feature to allow more than one program to be executed at a time. Use of the dual program feature is not prohibited during execution of the CCP, but any program executed in the other program level does not run under control of the CCP. The Communications Control Program cannot be run in both program levels concurrently.

HARDWARE REQUIREMENTS - MODEL 8: The following is the minimum hardware necessary for a Model 8 CCP System.
- IBM 5408 model A16 (32K bytes)
- One IBM 5444 model A2 Disk Storage System
- IBM 5203 Printer (required during CCP generation, but not required for operation)
- IBM 5471 Printer-Keyboard
- Integrated Communications Adapter (#4645) and local/remote interface, or the Local Display Adapter
- At least one Communications terminal of a type listed under Terminals and Features Supported
- The minimum main storage size in which concurrent execution of more than one program is supported is 48K (IBM 5408 model A17) if DFF is used to support the IBM 3270 Information Display System.

ADDITIONAL HARDWARE SUPPORTED - MODEL 8: The following additional facilities are supported by CCP on a model 8.
- Up to 64K bytes of Main Storage
- IBM 5444 Disk Storage Drive model A3 or a second model A2
- IBM 5448 Disk Storage Drive model Al (for data files only)
- One Binary Synchronous Communications Adapter
- Dual Program feature (see note above under "Additional Hardware Supported - Model 10")
- One directly-attached IBM 3741 Data Station/Programmable Workstation

NOTE: MLTA and MLTA IOCS are not available for the model 8. Local Display Adapter is not available for the model 10.

11.5 SOFTWARE REQUIREMENTS
Execution of the Communications Control Program requires Disk System Management, including all modules for the appropriate IOCS.
A generation of the Communications Control Program requires Disk System Management, including:
- Macros feature (5702-SC1, feature #6020/#6021)
- Overlay Linkage Editor and Checkpoint/Restart feature (5702-SC1, feature #6026/#6027)
- The appropriate communications IOCS (program number 5799-WAU for MLTA and/or program number 5702-SC1, feature #6030/#6031, for the BSCA ML/MP feature)

No special programming systems requirements exist for the running of system assignments.
For the preparation of application programs, an applicable compiler or assembler is required.
PROGRAM PREREQUISITES: 5702-SC1; 5702-SC1, feature #6020/#6021; 5702-SC1, feature #6026/#6027; 5799-WAU and/or 5702-SC1, feature #6030/#6031.

12.0 3881 OPTICAL MARK READER FEATURE
                    (FEATURE #6034-#6035)
12.1 PURPOSE
Provides the user with system subroutines for data management and input control of the optical mark reader attached to System/3 mdl 10. These subroutines are used with the SPECIAL exit function of RPG II or with the Basic Assembler program.
12.2 SPECIFIED OPERATING ENVIRONMENT
12.3 HARDWARE REQUIREMENTS
MINIMUM SYSTEM REQUIREMENTS: In addition to the requirements for 5702-SC1, this feature requires an IBM 3881 Optical Mark Reader. This feature operates on a minimum IBM System/3 mdl 10 Disk System with l2K bytes of main storage and with the SIOC Feature. This feature is applicable to IBM System/3 mdl 8 and requires a minimum system and the SIOC.
12.4 SOFTWARE REQUIREMENTS

5702-SC1; 5702-RGl or 5702-ASl.

13.0   MULTI-LEAVING REMOTE JOB ENTRY WORKSTATION PROGRAM
                     (FEATURE #6036-#6037)
13.1   PURPOSE
 Permits a System/3 Disk System equipped with a Binary Synchronous
 Communications Adapter with EBCDIC (Text Transparency optional) to function
 as a Multi-leaving Remote Job Entry Workstation communicating over a
 point-to-point (switched or nonswitched) line to a System/370 operating
 under control of one of the following:
 -   HASP II (Version 3.1 or 4.0)
 -   ASP (Version 2.6 or 3.0)
 -   Remote Entry Services (RES) of JES under OS/VSl Release 2
 -   Multi-leaving Workstation facilities of JES2/JES3 under OS/VS2 Release 2
 -   RSCS of VM/370
13.2   DESCRIPTION
 Any job which can be entered into the central system from locally-attached
 similarly-functioned I/O devices can be entered from the System/3 MRJE
 workstation. Workstation input may be read from any of the devices
 indicated below. Operator messages and output data sets may be directed to
 any of the devices shown below. Output may be returned to the submitting
 workstation or routed to another workstation or directed to local central
 system I/O devices. (Not all of these devices are available for System/3 mdl 8)

	INPUT*	MESSAGES	OUTPUT
5424 MFCU	x		
1442 Card Read Punch	x		
3741 directly attached	x		
5471 Printer-Keyboard	x	x	
5203 Printer	x	x	
1403 Printer	x	x	
5444 Disk Storage Drive	x	x	
5445 Disk Storage	x	x	
5448 Disk Storage	x	x	
3410/3411 Mag. Tape	x	x	

* Input may be from a combination of these devices.

 All disk files created by the workstation program are standard System/3
 consecutive files and may be accessed by any of the following programs:
 MRJE/WS
 Print Utility, SCP Copy/Dump program, or user-written RPG II, COBOL,
 FORTRAN, or Assembler programs.
 When using the Workstation program, the following restrictions apply:
 -   Column binary is not supported.
 -   Reading and punching OS object decks requires the BSCA Text
     Transparency feature and a 1442 Card Read Punch.
     For unit record devices (including the 3741), input record lengths
     can be 80 or 96 bytes; however, only the first 80 bytes of the input
     records will be processed by the Workstation program.
 -   Files processed with the READFILE command can contain records of
     other thsn 80 or 96 bytes. The file will be transmitted to the host
     central as 80-byte records. (Regrouping the data is the user's
     responsibility.)
 -   Print records which exceed the line length of the System/3 Printer
     will be truncated.
 -   The Workstation program requires a logging device.

 The 5471 Printer-Keyboard is required only if MRJE is an 'Inquiry' program.
13.3   SPECIFIED OPERATING ENVIRONMENT
13.4   HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENTS: In addition to the minimum requirements for
 5702-SC1, this feature requires the BSCA (#2074) with EBCDIC. A minimum
 program level size of 8.5K bytes is required for execution.
 This feature is applicable to System/3 model 8 and can use the Integrated
 Communications Adapter (#4645 & #6202) or BSCA (#2074).
13.5   SOFTWARE REQUIREMENTS
 5702-SC1; 5702-SC1 feature #6026/#6027.

14.0   IBM 3741 DATA STATION FEATURE

                    (FEATURE #6066-#6067)
14.1 PURPOSE
 This feature provides support for the 3741 Data Station (mdl 1 or 2) and
 Programmable Workstation (mdl 3 or 4) as an input/output device directly
 attached to a System/3. For 3741 mdls 3 and 4, System/3 does not support
 the Application Control Language (ACL).
14.2 SPECIFIED OPERATING ENVIRONMENT
14.3 HARDWARE REQUIREMENTS>
 MINIMUM SYSTEM REQUIREMENTS: In addition to the requirement for 5702-SC1,
 this feature requires a 3741 directly attached.
14.4 SOFTWARE REQUIREMENTS: 5702-SC1.

15.0 5448 DISK STORAGE DRIVE FEATURE
                    (FEATURE #6074)
15.1 PURPOSE
 The 5448 Disk Storage Drive on the System/3 mdls 8 and 10 is supported by
 the SCP as an input/output and data storage device. The 5448 is not
 supported for either system or library residence. Except for split
 cylinder files and offline multivolume files, the 5448 file organizations
 (sequential, indexed, and direct) and access methods are the same as for
 the 5445.
 NOTE: To access files on the 5448, the RPG II compiler requires the Disk
 RPG II 5445 Disk Storage Drive feature (5702-RGl, feature #6014), and the
 Disk Sort program requires the Disk Sort 5445 Disk Storage feature
 (5702-SMl, feature #6010).
 DISK UTILITY PROGRAMS: The Disk Utility Programs used to prepare and
 maintain the 5448 include the following:
15.2 DESCRIPTION
     $INIT   Disk Initialization
     $ALT   Alternate Track Assignment
     $BUILD   Alternate Track Rebuild
     $LABEL   File and Volume Label Display
     $DELET   File Delete Program
     $COPY   Copy/Dump Program
     $DCOPY   Dump/Restore Program
     $PCOPY   Disk Pack Backup/Restore Program
 COPY/DUMP PROGRAMS: By using unit codes D1 and D2, $COPY can be used to
 copy files or entire volumes. For the COPYFILE function, all the features
 for 5444 and 5445 copies are supported. Using the COPYPACK function, a
 volume can be copied as follows: 5444 to 5444 ... 5448 to 5448.
 DUMP/RESTORE PROGRAM: By using the unit code D1 or D2, the $DCOPY program
 can be used to dump a 5448 volume to magnetic tape for backup, or to
 restore a 5448 volume from a tape created by this program. It is not
 possible to restore a 5444 or 5445 tape to a 5448, nor is it possible to
 restore a 5448 tape to a 5444 or 5445.
 DISK PACK BACKUP/RESTORE PROGRAM: The Disk Pack Backup/Restore Program
 ($PCOPY) provides a method to backup a 5448 volume (D1 or D2) onto two 5440
 disk cartridges and to restore a 5448 volume from two 5440 disk cartridges
 created by this program. When the 5440 disk cartridges contain a 5448
 backup, they are protected and may only be accessed by $PCOPY or $INIT
 (using TYPE-CLEAR).
15.3 SPECIFIED OPERATING ENVIRONMENT
15.4 HARDWARE REQUIREMENTS
 MINIMUM SYSTEM REQUIREMENTS: An IBM System/3 model 8 includes: IBM 5408
 Processing Unit model A14 (16K bytes) ... IBM 5444 Disk Storage Drive
 model A2 ... IBM 5448 Disk Storage Drive model A1 ... plus other devices
 required for a model 8.
 A System/3 model 10 includes: IBM 5410 Processing Unit model A13 (12K
 bytes) ... IBM 5444 Disk Storage Drive model 2 or A2 ... IBM 5448 Disk
 Storage Drive model A1 ... plus other devices required for a model 10 Disk
 System.
15.5 SOFTWARE REQUIREMENTS: 5702-SC1.

16.0 SYSTEM/3 MODEL 10 DISK AND MODEL 8 SYSTEM
                    SUPERVISOR SIZES
 The size of the Disk System supervisor varies depending on the configura-tion.
 The following table can be used for planning purposes.

DISK DRIVES**	DEDICATED SYSTEM		DUAL PROGRAMMING	
	W/ CONSOLE	W/O CONSOLE	W/ CONSOLE	W/O CONSOLE
R1,F1	3.00K	2.75K	3.75K*	3.50K*
R1,F1,R2	3.25K	3.00K	4.00K	4.00K
R1,F1,R2,F2	3.25K	3.00K	4.00K	4.00K
R1,F1,D1 (5445)	3.75K	3.75K*	4.75K	4.50K
R1,F1,D1,D2 (5445)	4.00K	3.75K	4.75K	4.50K
R1,F1,D1,D2 (5448)	4.75K	4.50K	5.50K	5.50K
R1,F1,R2,F2,D1 (5445)	4.00K	3.75K	4.75K	4.50K
R1,F1,R2,F2,D1,D2 (5445)	4.00K	3.75K	4.75K	4.50K
R1,F1,R2,F2,D1,D2 (5448)	4.75K	4.50K	5.75K	5.50K

**NOTES:
```
K        = 1024 bytes (decimal)
R1,F1    = 5444 drive 1
R2/R2,F2 = 5444 drive 2
D1       = 5445 drive 1
D1,D2    = 5448/5445 drive 1 and drive 2
```

For TAPE SUPPORT, add 0.50K to the above numbers.
For configurations indicated with an asterisk, add 0.75K instead of 0.50K.
For BSCA SUPPORT (with LINE 1 and LINE 2, ICA, local display adapter or ML/MP), add 0.25K to the above numbers. ICA and display adapter are supported on the model 8 only. BSCA support is not required if only running MRJE, since MRJE supplies its own BSCA support.
For 3741 DIRECTLY ATTACHED, add 0.75K to the above numbers.
MULTIPLE PROGRAM REQUESTS: System/3 Program Products and System Control Programming of program type 5702 which are ordered from EPL for shipment at the same time may be shipped to the user stacked on a 5440 disk cartridge.

==//==