IBM System/36
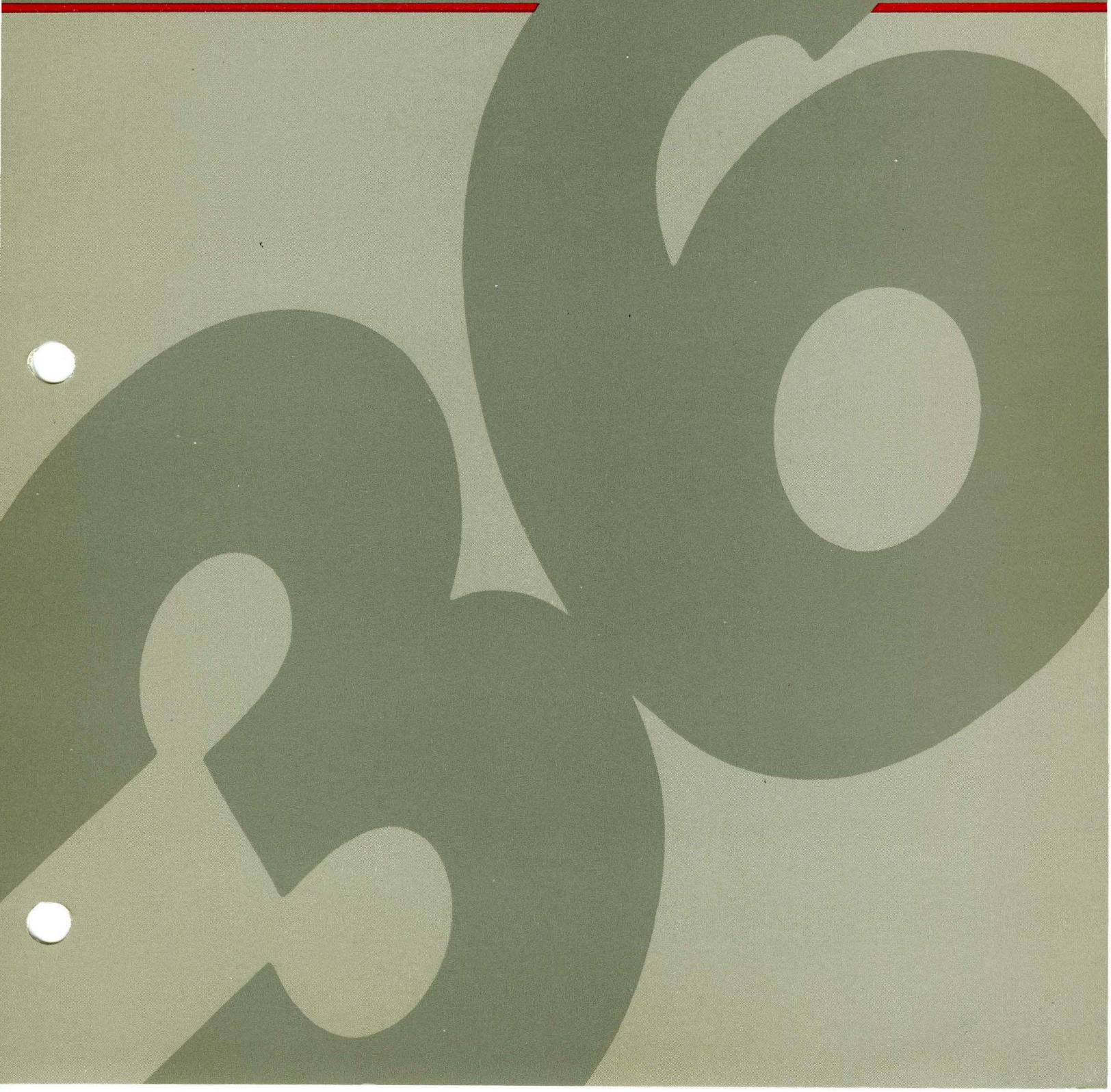
Multiple Session
Remote Job Entry
Guide

IBM   System/36

Multiple Session Remote Job Entry Guide

Program Numbers: 5727-SS1
                 5727-SS6

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Planning for New Devices and Programming Available at Release 4

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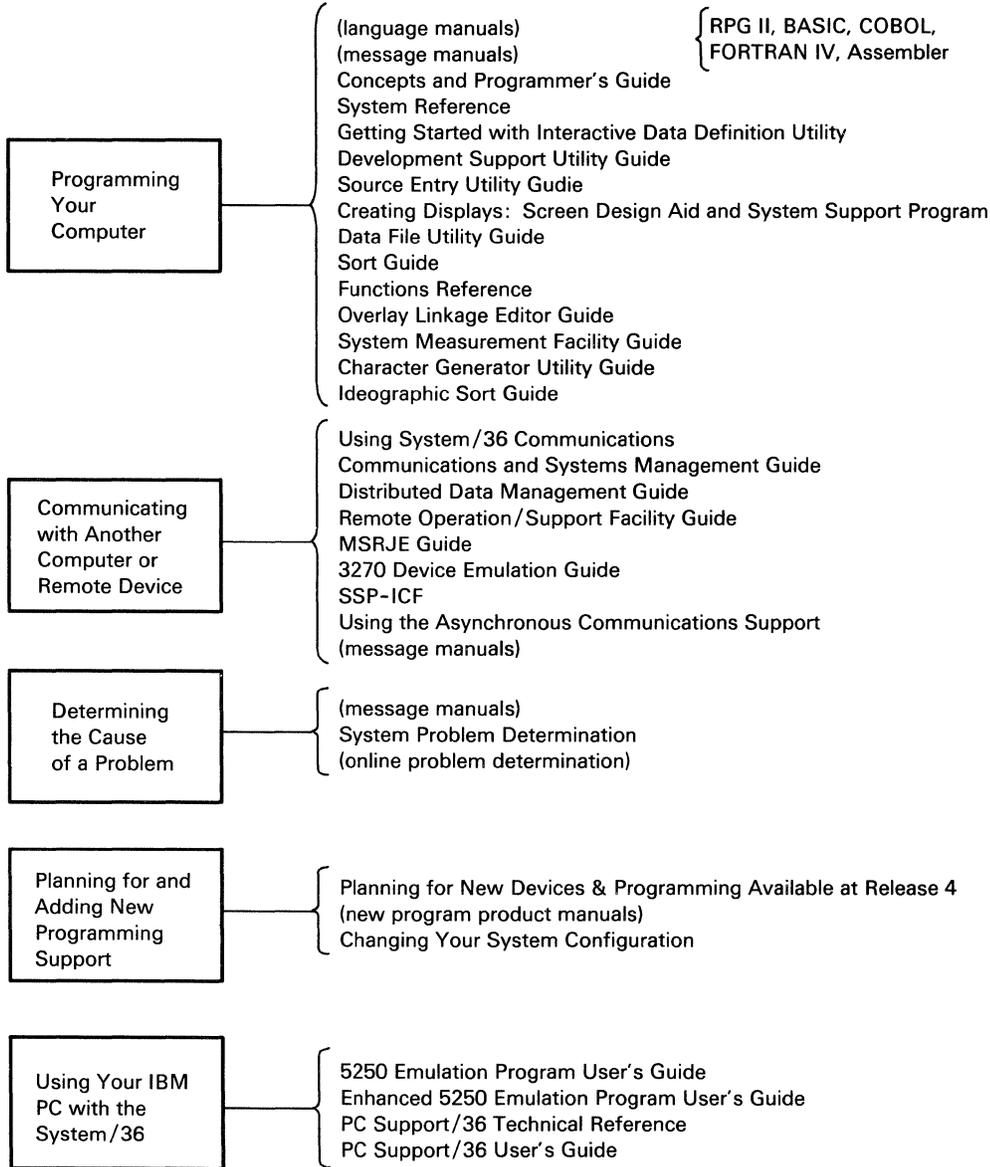Updating to a New Release

| Operating Your Computer |

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System/36 in the Office
Getting Started with Interactive Data Definition Utility
Getting Started with Query/36
Getting Started with Personal Services/36
Getting Started with DisplayWrite/36
Administering Personal Services/36 in the Office
Migrating Office Management System to Personal Services/36
Business Graphics Utilities/36 User's Guide
Online Information:
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  Personal Services/36
  DisplayWrite/36
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| Programming Your Computer | (language manuals) · { RPG II, BASIC, COBOL,
(message manuals) · FORTRAN IV, Assembler
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Development Support Utility Guide
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| Communicating with Another Computer or Remote Device | Using System/36 Communications
Communications and Systems Management Guide
Distributed Data Management Guide
Remote Operation/Support Facility Guide
MSRJE Guide
3270 Device Emulation Guide
SSP-ICF
Using the Asynchronous Communications Support
(message manuals) |

| Determining the Cause of a Problem | (message manuals)
System Problem Determination
(online problem determination) |

| Planning for and Adding New Programming Support | Planning for New Devices & Programming Available at Release 4
(new program product manuals)
Changing Your System Configuration |

| Using Your IBM PC with the System/36 | 5250 Emulation Program User's Guide
Enhanced 5250 Emulation Program User's Guide
PC Support/36 Technical Reference
PC Support/36 User's Guide |

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Contents

About This Manual

Who should use this manual . . .

This guide is intended for the System/36 work station operator who will be using the Multiple Session Remote Job Entry (MSRJE) feature and for the System/36 programmer responsible for configuring System/36 for MSRJE.

This guide should also be useful to the programmer who is responsible for adding System/36 into the host system network as a remote job entry (RJE) work station.

Using this guide, the operator can:

- Sign on a display station to MSRJE as a reader

- Sign on a display station to MSRJE as the MSRJE console

- Enter MSRJE utility control statements to control an MSRJE session

- End an MSRJE session

- Use the MSRJE disk file utility to print data that was written to disk, or to convert punch data from a compressed file to a data file

Using this guide, the System/36 programmer can:

- Configure System/36 to use MSRJE

- Write the MSRJE utility control statements to control an MSRJE session

- Generate forms control table entries to control the destination of output received from the host system

Using this guide, the host system programmer can:

- If needed, modify host system programs that support RJE to support System/36 MSRJE

- Generate the host system communications network to include System/36 as an RJE work station

How this manual is arranged . . .

Chapter 1 introduces the concept of remote job entry and provides an overview of the support provided by MSRJE.

Chapter 2 describes how the MSRJE environment is defined.

Chapter 3 provides the information necessary to run MSRJE, and describes how input to MSRJE and output from MSRJE are handled.

Chapter 4 describes the MSRJE utility control statements that are used to control an MSRJE session.

Chapter 5 describes the use of the MSRJE forms control table utility.

Chapter 6 describes the MSRJE disk file utility.

Chapter 7 discusses the aspects of the BSC host system generation applicable to System/36.

Chapter 8 discusses the aspects of the SNA host system generation applicable to System/36.

Appendix A contains work sheets that can be used to obtain information from or give information to the persons responsible for defining System/36 to a host system.

Appendix B defines the format of the SNA bind command that System/36 must receive before SNA MSRJE can be run.

Appendix C provides an example of an MSRJE session, including the configuration, utility control statements and host system JCL.

Appendix D shows the default values provided by IBM for use in forms control tables.

Appendix E provides an example of the work sheets that should be filled out to tell the operator how to establish the data link on a switched line.

Appendix F contains a problem determination procedure that can help you find the cause of an MSRJE problem.

The *Glossary* defines the data processing, data communications, and System/36 terms used in this manual.

What you should know . . .

The reader is assumed to have read the following manual or have the equivalent knowledge:

- *IBM System/36 Learning About Your Computer*, SC21-9018

- *Using System/36 Communications*, SC21-9082

The System/36 work station operator is expected to be familiar with the operation of a System/36 Work Station, and the System/36 programmer is expected to be familiar with configuring System/36 for communications.

If you want more information . . .

System/36 Publications

For a list of the available IBM publications, see:

- *Guide to Publications*, GC21-9015, for the 5360 or 5362 System Unit

- *Guide to Optional Information*, GX21-9817, for the 5364 System Unit (also known as the System/36 PC)

Note: For the 5364, problem determination information is in the manual **Operating Your Computer**. Therefore, references in this guide to **System Problem Determination** should be read as references to **Operating Your Computer**.

| General Information and Architecture

| You might be interested in the following publications, or equivalent information,
| about IBM data communications products.

General Communications

- *Data Communications Concepts*, GC21-5169

Data Link Control

- *IBM Synchronous Data Link Control General Information*, GA27-3093

- *General Information—Binary Synchronous Communications*, GA27-3004

Systems Network Architecture (SNA)

- *Systems Network Architecture Reference Summary*, GA27-3136

- *Systems Network Architecture Introduction*, GA27-3116

| - *Systems Network Architecture: Technical Overview*, GC30-3073

- *Systems Network Architecture Format and Protocol Reference Manual: Architectural Logic*, SC30-3112

- *Systems Network Architecture-Sessions Between Logical Units*, GC20-1868

Communications Controllers

- *IBM 3704 and 3705 Program Reference Handbook*, GY30-3012

- *Guide to Using the IBM 3704 Communications Controller Control Panel*, GA27-3086

- *Guide to Using the IBM 3705 Communications Controller Control Panel*, GA27-3087

- *IBM 3704 and 3705 Control Program Generation and Utilities Guide and Reference Manual*, GC30-3008

- *Introduction to the IBM 3704 and 3705 Communications Controllers*, GA27-3051

- *3725 Model 1 Communication Controller, Introduction*, GA33-0010

- *3725 Model 2 Communication Controller, Introduction*, GA33-0021

- *3725 Communication Controller, Principles of Operation*, GA33-0013

VTAM

| •   *Advanced Communications Function for VTAM (ACF/VTAM) General*
| *Information: Introduction*, GC27-0462

| •   *Advanced Communications Function for VTAM (ACF/VTAM) General*
| *Information: Concepts*, GC27-0463

| •   *Advanced Communications Function for VTAM (ACF/VTAM) System*
| *Programmer's Guide*, SC38-0258

Job Entry Subsystems (JES)

OS/VS2 JES2

| •   *OS/VS2 MVS System Programming Library: JES2 Installation, Initialization*
| *and Tuning*, SC23-0046

    •   *OS/VS2 MVS/System Product Version 1 General Information Manual*,
        GC28-1025

    •   *Operator's Library OS/VS2 Remote Terminals (JES2)*, GC38-0225

    •   *Operator's Library: JES2 Commands*, SC23-0048

    •   *OS/VS2 MVS System Programming Library: JES2*, GC23-0002

OS/VS2 JES3

    •   *Introduction to JES3*, GC28-0607

    •   *OS/VS2 MVS System Programming Library: JES3*, GC28-0608

    •   *OS/VS2 MVS System Programming Library: JES3 Debugging Guide*,
        GC28-0703

    •   *Operator's Library: OS/VS2 MVS JES3 Commands*, GC23-0008

    •   *Operator's Library: OS/VS2 Remote Terminals (JES3)*, GC38-0228

    •   *OS/VS2 MVS System Programming Library: JES3*, GC28-0608

OS/VS1 RES

    •   *OS/VS1 RES System Programmers Guide*, GC28-6878

    •   *OS/VS1 RES Workstation User's Guide*, GC28-6879

    •   *OS/VS1 Information Distribution Workstation Support General Information*,
        GC24-5193

VM/370 RSCS

- *Virtual Machine Facility/370: Remote Spooling Communications Subsystem (RSCS) User's Guide*, GC20-1801

- *IBM Virtual Machine Facility/370: Introduction*, GC20-1800

- *IBM Virtual Machine Facility/370: System Programmer's Guide*, GC20-1807

- *IBM Virtual Machine Facility/370: Remote Spooling Communications Subsystem (RSCS) User's Guide*, GC20-1816

VSE/POWER with RJE Feature Operating Under DOS/VSE

- *VSE/POWER General Information Manual*, GH12-5128

- *VSE/POWER Installation and Operations Guide*, SH12-5329

- *VSE/POWER Specifications*, GH12-5046

- *VSE/POWER RJE Users Guide*, SH12-5328

How this manual has changed . . .

The following are major changes made to this manual since the previous edition:

- MSRJE can be run from the job queue or can be evoked.

- MSRJE ignores forms control buffer images from host subsystems.

- MSRJE now supports remote files.

  - Reader can end remote files.

  - Print and punch can read remote forms control tables and create files on a remote system.

- MSRJE can send printer data to disk files that you define.

- MSRJE can support a host printer balancing function.

Chapter 1. Introducing Multiple Session Remote Job Entry

The System/36 Multiple Session Remote Job Entry (MSRJE) feature allows you to submit jobs from System/36 to a host system for processing and to obtain the output of those jobs from the host system. MSRJE allows you to use the processing power of a host system, and yet maintain your own local applications on System/36. To use MSRJE, System/36 must be attached to the host system using a data link. With MSRJE, System/36 can communicate with either BSC (binary synchronous communications) or SNA (systems network architecture) host systems.

What Is Remote Job Entry?

Host system sites generally consist of a large computer (such as an IBM System/370, IBM 303x System, or an IBM 43xx Processor) with several input and output devices. Usually, the input devices are display stations, card readers, disk units, tape units, and the system console. The output devices are display stations, card punches, disk units, tape units, the system console and printers. Data to be processed by the computer is entered through one of the input devices, the computer processes the data, and the results of the processing are directed to one or more of the output devices.

Traditionally, computer input has been in the form of punched cards. These cards are punched on a keypunch machine by an operator who uses source documents, such as orders or invoices, as input. The punched cards are then read into the computer by a card reader. Once the computer completes the processing of the data, it generates output in the form of printed reports or punched cards. The punched cards generated as output are then either manually stored in a card file or used as input to another computer job.

As companies with this type of installation grew, much of the input to the system came from remote locations, such as branch offices or regional warehouses. These remote locations generally mailed their source documents to the central site, where it was transferred to cards by a keypunch machine operator. The punched cards were then read into the computer from a card reader; the computer processed the data and generated output in the form of printed reports and punched cards. Any of the output required by the remote location was then mailed to the location. As information needs grew, it became increasingly obvious that a more timely method of submitting data to the computer and receiving output at the remote locations was required. The concept of remote job entry grew out of this need for more rapid turnaround of jobs processed by the computer.

Remote job entry uses a card reader, card punch, and printer at the remote
locations. These devices are attached to a control unit, which is attached to the
central site computer through a data link. A keypunch machine is also placed at the
remote site so that source documents can be transferred to punched cards at the
remote site. Once the data link is established, the user can enter the host system
commands and data from the card reader and receive the output from the host
system at the printer or card punch. The remote location control unit and its
attached devices are referred to as a remote job entry (RJE) work station.
Figure 1-1 illustrates the relationships between the central site computer, its local
devices, and the RJE work station.

Host Input Devices   **Host Output Devices**

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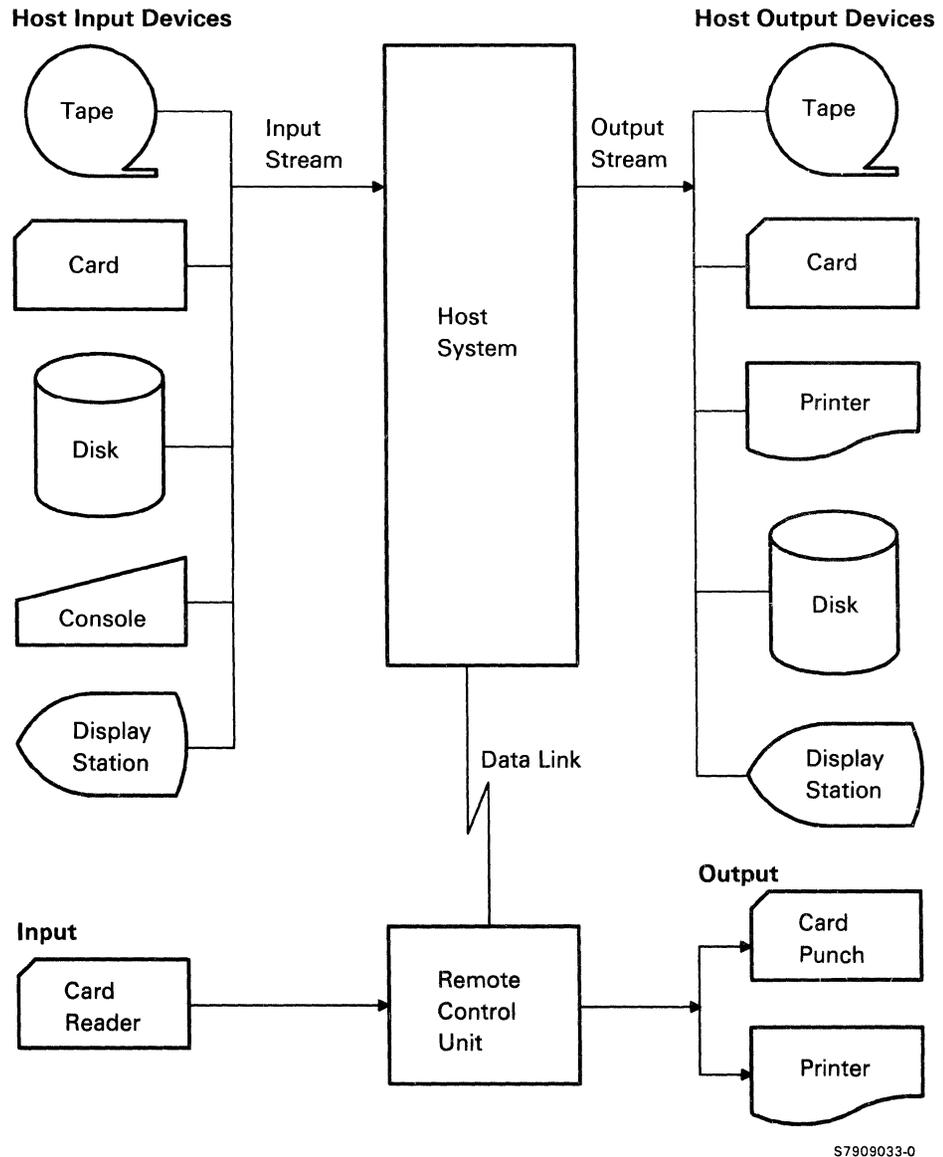
Figure   1-1.   Overview of RJE Relationship to the Host System

Any job that can be entered directly into the host system from its local input devices can also be entered from an RJE work station. When a job is submitted from an RJE work station, it is processed by the host system in the same manner as any locally submitted job. When the job has completed processing, the output can be returned to the RJE work station, directed to another RJE work station, or directed to one of the output devices locally attached to the host system.

Terms Related to Remote Job Entry

Before you continue reading about System/36 MSRJE, there are several terms whose meanings you should know. You will frequently come across these terms in this guide and in other readings about remote job entry.

- **Job Control Language (JCL).** All jobs submitted to the host system must contain job control language (JCL) statements to tell the host system what to do. JCL is the host system's version of the System/36 Operator Control Language (OCL). JCL statements tell the host system what application program to start when the job is submitted from the RJE work station, where the output is to go, and also tells the host system how much of the computer resources (such as disk and main storage) are required by the job.

- **Data stream.** A data stream is a group of records that relates to either an input or output device, or a group of records that relates to an input or output function. For example, data that is being sent to the host system is called a reader data stream because it will be viewed by the host system as card reader input. Print data that is received from the host system is called a print data stream; punch data received from the host system is called a punch data stream.

- **Host commands.** These are commands sent by the RJE work station that tell the host system to do something, such as start a print output task or cancel a print task.

- **Session.** (1) The logical connection by which programs or devices can communicate with each other. (2) The length of time that starts when an operator signs on to the system and ends when the operator signs off the system.

System/36 as a Remote Job Entry Work Station

With the MSRJE feature, you can use System/36 as an RJE work station. Because System/36 does not support cards, the card reader input stream comes from either disk or from a display station keyboard. Before sending data to the host system, MSRJE ensures that, whether the data comes from a display station keyboard or disk, it will be acceptable to the host system as reader input.

Display station input is much the same as card input because the input source documents are entered from a keyboard and converted to a format that can be read by the computer. However, instead of generating punched cards as a keypunch machine does, System/36 either stores the entered data in a disk file (that file can then become reader input to MSRJE) or submits the data directly to MSRJE, which then sends the data to the host system.

When a punch data stream is received from the host system, MSRJE stores that data in a disk file. The disk file can then be used as input to another job (either a local System/36 job or an RJE job).

When print data is received from the host system, MSRJE either prints it as it is received or writes it to a disk file for later printing by the MSRJE disk file utility (you control the destination of output received by MSRJE, as described in Chapter 3).

In addition to transmitting data, MSRJE can also send Job Control Language (JCL) statements and commands to the host system. JCL and host system commands are not checked by MSRJE; they are simply sent. You must ensure the accuracy of JCL and host system commands before using them with MSRJE.

MSRJE utility control statements control the operation of MSRJE. These statements are processed by MSRJE and are not sent to the host system. The MSRJE utility control statements are described in Chapter 4.

Use of MSRJE

To illustrate an RJE application, Figure 1-2 shows a System/36 located at a regional office in Chicago and a host system located at corporate headquarters in New York. The regional office sends weekly sales totals **1** to the host system, which processes the data and returns print data **2** to the System/36 in Chicago. This data is then printed **3** at the System/36. In addition to processing the reports for the Chicago office, the host system also updates the corporate sales files and generates weekly sales reports for corporate management **4**, giving sales figures for the entire corporation.

The System/36 in this example has communications and the MSRJE feature. An application program has been written to allow operators to enter sales invoices directly into a System/36 data file **5**. A file has also been created that contains the JCL **6** and commands needed by the host system to process the data and the utility control statements used to control the operation of MSRJE.
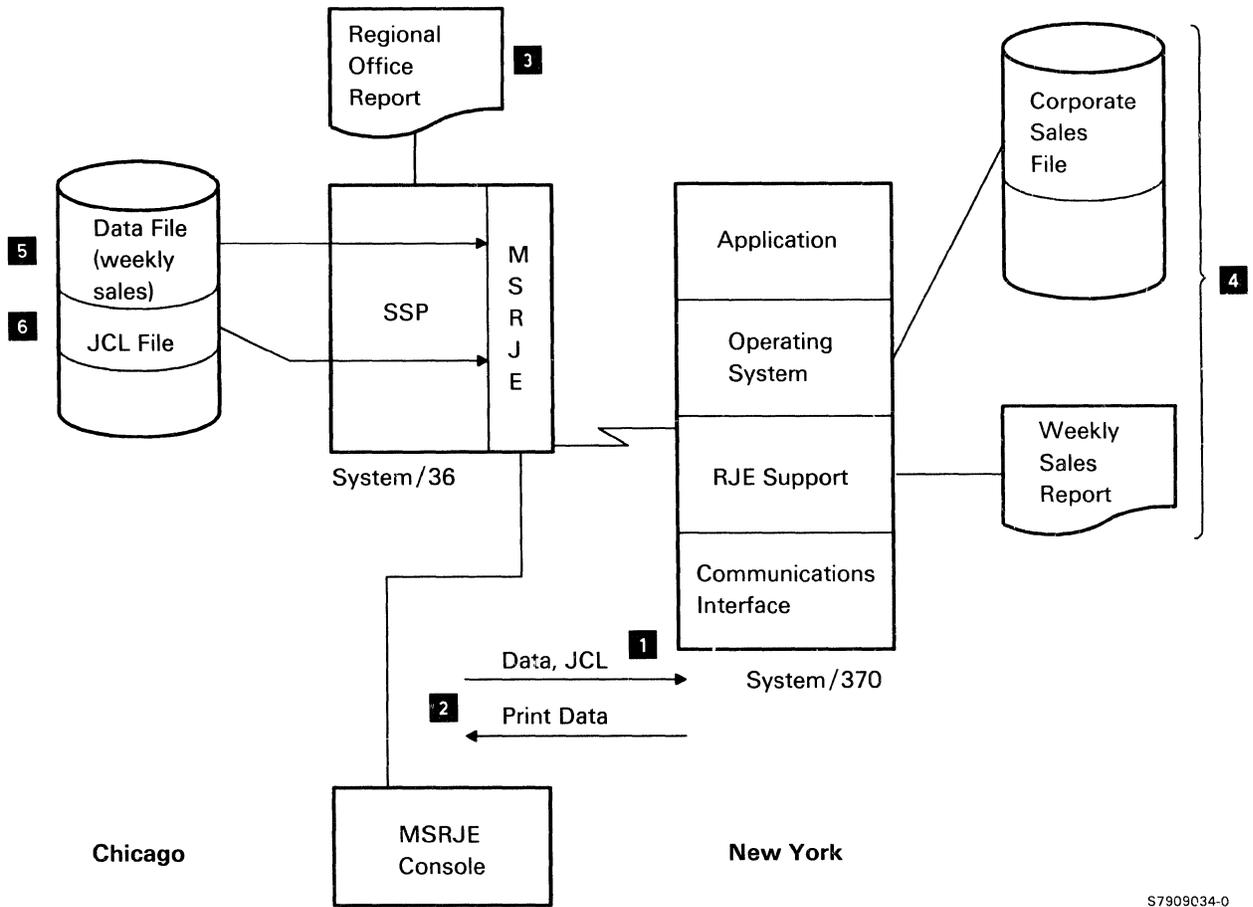
Figure 1-2. Example MSRJE Environment

From Monday through Friday, the operators in Chicago enter the sales invoices into the data file on System/36. On Friday afternoon, MSRJE is started to send the collected data to the host system for processing. Once the data link is established, MSRJE reads the file that contains the MSRJE utility control statements and the host system JCL. The JCL is sent to the host system and the appropriate application is started there to process the sales data. The data file is then read by MSRJE and sent to the host system. Once the host application has processed the data, print data is returned to System/36 and printed. When all data has been sent, processed, and received, the System/36 operator ends MSRJE.

BSC Host Subsystems Supported by MSRJE

Using MSRJE, System/36 can operate as an RJE work station when attached, through a data link on one or more System/36 lines, to the following BSC host subsystems:

- Job Entry Subsystem 2 (JES2) running under MVS

- Job Entry Subsystem 3 (JES3) running under MVS

- Remote Entry Service (RES) running under OS/VS1

- Remote Spooling Communications Subsystem (RSCS) running under VM/370

SNA Host Subsystems Supported by MSRJE

Using MSRJE, System/36 can operate as an RJE work station when attached, through a data link on one or more System/36 lines, to the following SNA host subsystems:

- Job Entry Subsystem 2 (JES2) running under MVS

- Job Entry Subsystem 3 (JES3) running under MVS

- Virtual Storage Extended/Priority Output Writers, Execution Processors, and Input Readers (VSE/POWER) running under DOS/VSE

- Remote Entry Service (RES) running under OS/VS1

When MSRJE is used to communicate with an SNA host system, MSRJE can share a System/36 communications line with the following System/36 features:

- The SSP-ICF SNA Upline Facility (SNUF) subsystem

- SNA 3270 Device Emulation

- The Distributed Systems Node Executive (DSNX) of Communications and Systems Management (C & SM)

- The Distributed Host Command Facility (DHCF) of Communications and Systems Management

- The SSP-ICF Advanced Program-to-Program Communications (APPC) subsystem

Notes:

1. *More than one active SNA subsystem can share the same line.*

2. *More than one remote location on the same line can be active to one or more hosts.*

System/36 Requirements for Supporting MSRJE

The minimum system configuration required to support MSRJE is:

- System/36 with a minimum main storage of 128K bytes

  If throughput is important, you should use at least 256K bytes of main storage. Depending on other system activity (3270 Device Emulation, OFFICE/36), 384K storage with 200 mb of disk is recommended.

- Communications adapter

- Communications equipment

  - Modem or an X.21 adapter

  - X.25 equipment

  - A switched or nonswitched communications line

  - Protective couplers for a non-FCC registered modem on a switched line (US only)

- System/36 System Support Program Product (SSP)

- System/36 Communications feature

Simultaneously, BSC MSRJE and SNA MSRJE can run on a total of eight communications lines. Separately, BSC MSRJE and SNA MSRJE can each run on up to eight communications lines.

Utilities Provided with MSRJE

In addition to the communications support provided by MSRJE, two utilities are provided with the MSRJE feature to aid you in your use of MSRJE. These utilities are the MSRJE disk file utility and the MSRJE control table utility.

MSRJE Control Table Utility

You use the MSRJE control table utility (named RJTABLE) to define how output received from the host system is to be handled during an MSRJE session. You create tables using the RJTABLE procedure command and name each entry in the table. The names you assign to the entries in the table correspond to forms names sent by the host system with output data. When a name in the table matches a received forms name, the values specified in the table are used to control the processing of the output data. If no match is found in the table, a default entry is used. You can define table entries for print data and punch data, and you can also update the print default and punch default entries.

Using the control table allows you to specify whether print data received is to be written to a disk file containing 256-character unprocessed records, sent directly to the printer, spooled, or written to a user-defined disk file. You can specify that punch data be written to either a disk file as 256-character unprocessed records or a user-defined disk file.

You can review and get a printout of the entire table or an entry in the table.

The control table utility is described in Chapter 5.

MSRJE Disk File Utility

You use the MSRJE disk file utility (named RJFILE) to convert print data and punch data to printed output or data files after the data has been:

- Received from the host system

- Written to disk files that contain 256-character records

Print data that was written to a disk file as 256-character unprocessed records (a compressed disk file) can be printed, or like punch data that was written to a compressed disk file, it can be converted to files you define. Punch data that was written to a compressed disk file can be converted to files you define, and you can use those files as input to application programs or MSRJE.

The disk file utility is described in Chapter 6.

Defining MSRJE for System/36 and the Host System

Before you can use MSRJE to communicate with a host system, you must:

- Define the System/36 communications environment

- Define the RJE environment for MSRJE to System/36

- Define the RJE environment to the host system for communicating with MSRJE

When you define the RJE environment for MSRJE to System/36, you are configuring MSRJE. When you are defining the RJE environment to the host system, you are generating the host system communications network. Some of the items defined during MSRJE configuration must match items defined during the host system generation. You may either perform the host system generation and then base the MSRJE configuration on it, or perform the MSRJE configuration and then base the host system generation on the MSRJE configuration. In either case, you will have to work with the person who will be doing the host system generation to ensure that the MSRJE configuration and the host system generation match.

Chapter 2 provides the information necessary to configure MSRJE. As you read Chapter 2, you will note that the items specified for MSRJE that must match values specified for the host system are so indicated.

Chapter 7 describes the BSC host system generations; Chapter 8 describes the SNA host system generations. Whenever a value specified at the host system must match a value specified during MSRJE configuration, the corresponding MSRJE item is indicated. Appendix A contains host subsystem work sheets to help you during MSRJE configuration or host system generation.

Converting System/34 SRJE or MRJE Applications to System/36 MSRJE

The IBM System/34 System Support Program Product (SSP) provides two separate utilities to perform remote job entry. MRJE (MULTILEAVING Remote Job Entry) supports communications with BSC host systems, and SRJE (SNA Remote Job Entry) supports communications with SNA host systems. In addition, System/34 provides utilities for defining the forms control table (DCFUP) and printing data written to a disk file (DCSUP). If you are converting from System/34 SRJE or MRJE, the manual *Converting from System/34 to System/36* contains information about converting to System/36 MSRJE. That manual also provides information about converting from DCFUP to the MSRJE control table utility, and from DCSUP to the MSRJE disk file utility.

MSRJE and System/36 Resource Security

If any of the files you intend to use with MSRJE are protected under the resource security capabilities of System/36, you must be sure that the operator who signs on to MSRJE is authorized to use those files. Security of files and libraries is based on the user ID and password.

Whenever MSRJE attempts to access a file or library and the file or library is protected, the user ID is compared to the list of authorized users for that file or library. If the user is not authorized, a message is logged, and the file is not accessed.

To ensure that MSRJE can access the forms control tables you create (as described in Chapter 5), you should authorize user MSRJE to have at least read access to the forms control table.

The *System Security Guide* contains further information on resource security.

Chapter 2. Before Running MSRJE

Before you can use MSRJE to communicate with a host system, you must:

1.   Install the MSRJE feature as a part of the system configuration

2.   Define a configuration for MSRJE

Installing MSRJE

MSRJE can be installed on System/36 during the initial system configuration, or when you change the system configuration. In either case, the CNFIGSSP procedure is used to describe your System/36 environment.

MSRJE is installed during the program products definition of the SSP (System Support Program Product). The manual *Changing Your System Configuration* contains a complete description of installing the program products, including MSRJE.

Defining an MSRJE Configuration

Defining a configuration for MSRJE consists of defining a line member and a subsystem member.

Many of the values specified during MSRJE configuration must match values specified at the host system during generation of the communications network. For example, the number of readers, printers, and punches that can communicate with the host system at one time are defined during host subsystem generation. These values are also specified during MSRJE configuration.

Host system work sheets are provided in Appendix A. It is suggested that you do either of the following:

- Have the host system personnel provide you with the information for the work sheet and then use those values to configure MSRJE.

- Fill out the work sheet yourself, configure MSRJE using the values you specified on the work sheet, and then provide that information to the host system personnel. They can then use it to generate the host communications network and subsystem.

You define the System/36 line and subsystem members by entering the CNFIGICF procedure command from any command-capable display station. The command has no parameters. The CNFIGICF procedure then presents a series of displays that prompt you for the needed configuration information.

When you are running the CNFIGICF procedure, you can request help text for all the displays by pressing the Help key. You start CNFIGICF by entering the CNFIGICF procedure command, which has no parameters.

MSRJE Line Members

A line member contains the description of the physical characteristics of the communications line that will be used by MSRJE and a description of one or more remote systems (host systems) with which MSRJE will communicate. The information in the line description is needed to establish the connection with the host system; it does not describe any specifics of the host subsystem or MSRJE.

One remote system can be defined within a line member for a nonswitched line; up to 32 remote systems can be defined within a line member for a switched line. In general, the remote system definition describes the characteristics of one host system. However, that host system could contain several subsystems, such as JES2, JES3, IMS, CICS, or RES. The remote system definition in the line member describes the characteristics of the host system (the computer itself) when System/36 is communicating with any of the host subsystems.

The number of host systems you define depends entirely on your communications environment. For example, if you will be using MSRJE on a nonswitched line, or on a switched line to communicate with only one host system, you would define only that system. If you will be using MSRJE on a switched line and will be communicating with more than one host system, you would define each host system.

Note that SNA MSRJE can use the same remote system definition as is used by:

- SNA 3270 device emulation

- SSP-ICF SNA Upline Facility (SSP-ICF SNUF) for application programs

- Distributed Systems Node Executive (DSNX) of Communications and System Management (C & SM)

- SSP-ICF Advanced Program-to-Program Communications (APPC)

- Distributed Host Command Facility (DHCF) of C & SM.

The manual *Using System/36 Communications* contains information on defining line members.

MSRJE Subsystem Members

A subsystem member contains the information necessary for MSRJE to communicate with one or more remote locations. For MSRJE, a remote location definition describes the characteristics of one RJE subsystem (such as JES2 or RES) in a host system (a remote system in the line member). Actually, since the host system can have many RJE work stations defined, an MSRJE remote location describes one work station for one host system.

When you define a subsystem member, you must specify the name of the line member that is to be used by the subsystem member. You then define one or more remote locations for each of the remote systems within the line member. When defining a subsystem member, you are shown the names of the remote systems that are defined within the associated line member. You then specify the name of the remote system for which you are defining a remote location.

You specify the following during the definition of a remote location:

- The name of the remote location. This name is used on the ENABLE and MSRJE procedure commands.

  For SNA, more than one location can be specified. You can then communicate with more than one location at a single remote system on a line.

- Whether the location is to be activated when an ENABLE procedure command specifying the subsystem member, but no location name, is entered.

- The name of the host system.

- How long MSRJE is to wait before ending a session after the MSRJE console has been released and all readers, printers, and punches have ended.

- The priority assigned to MSRJE readers, printers, and punches.

- The host system logon/signon information.

- The MSRJE configuration, including:

  - The number of MSRJE readers, printers, and punches.
  - The number of readers defined for MSRJE at the host system.
  - The sequence number to be assigned to print or punch files generated by MSRJE.
  - The forms control table and forms set to use.
  - Whether text transparency can be used.
  - Default values for certain parameters on the MSRJE procedure command.
  - For SNA MSRJE, the maximum number of sessions allowed by the host system.
  - For SNA MSRJE, the minimum number of sessions allowed. (MSRJE terminates if the number of active sessions is less than this value.)

Examples of MSRJE Configurations

The following illustrations show the relationship between line members, remote systems, subsystem members, and remote locations. In all of the examples, the line and subsystem members are stored in a user library named RJELIB (a subsystem member and its associated line member must be stored in the same library).

The first illustration shows a System/36 using MSRJE on a nonswitched line (System/36 line 1) to communicate with a BSC host system running RES. A line member (named BSCLINE1) with one remote system (named BSCHOST1) and a subsystem member (named BSCSUB1) with one remote location (named BSCLOC1) have been defined. The following ENABLE command is used to activate the communications support and the remote location:

```
ENABLE   BSCSUB1,RJELIB,1,,BSCLOC1
```
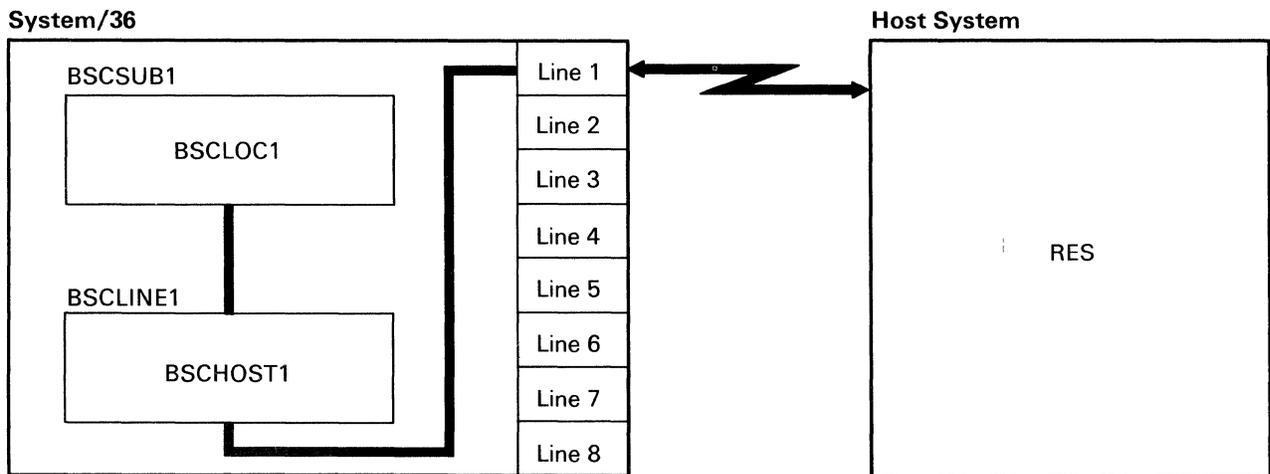

S7909002-0

The next illustration shows a System/36 using MSRJE on a switched line to communicate with two SNA host systems (one is running JES2 and the other RES). The line member is named SNASWT2, the remote systems are named SNARES and SNAJES2, the subsystem member is named SNASUB2, and the two remote locations (one for each remote system) are named JES2LOC and RESLOC.

First, the line and subsystem member are used to communicate with the JES2 subsystem:

```
ENABLE   SNASUB2,RJELIB,2,,JES2LOC
```

System/36

SNASUB2

| JES2LOC | RESLOC |

SNASWT2

| SNAJES2 | SNARES |

Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8

Host System

JES2
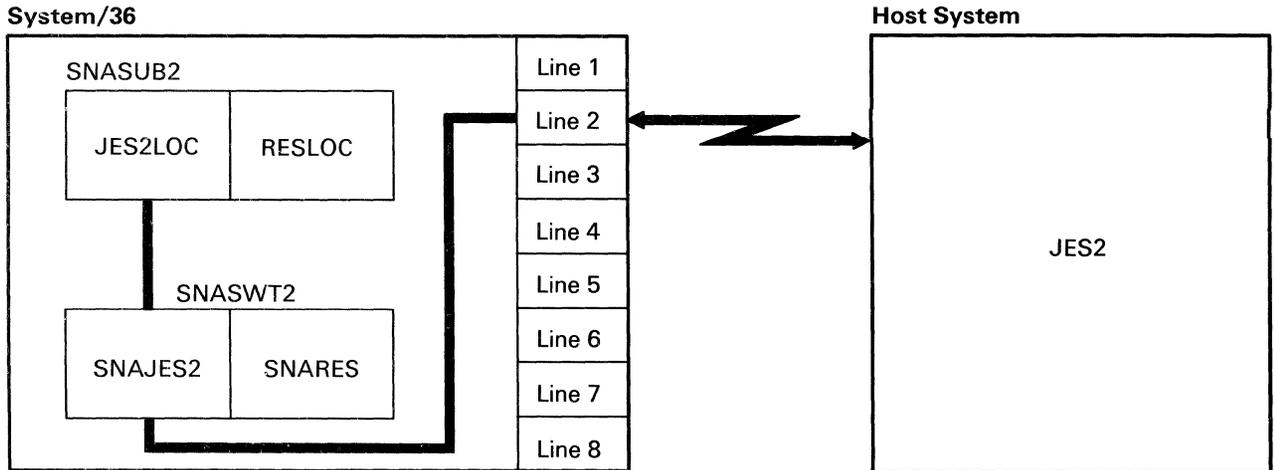
S7909003-0

Then, the same line and subsystem member are used to communicate with the RES subsystem:

```
ENABLE   SNASUB2,RJELIB,2,,RESLOC
```

System/36

SNASUB2

| JES2LOC | RESLOC |

SNASWT2

| SNAJES2 | SNARES |

Line 1
Line 2
Line 3
Line 4
Line 5
Line 6
Line 7
Line 8

Host System

RES
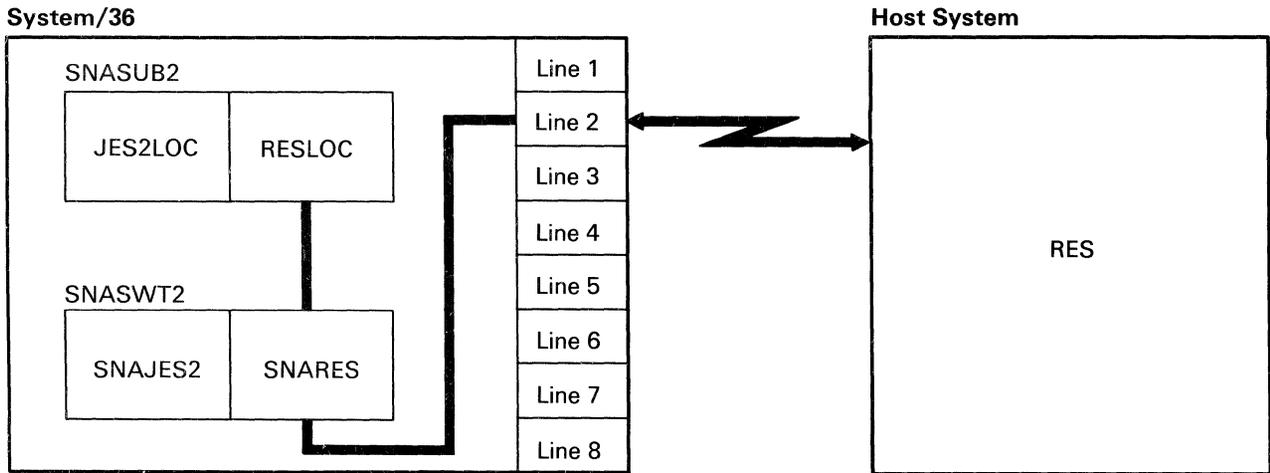
S7909004-0

Defining an MSRJE Subsystem Member Configuration for BSC

During subsystem member configuration, you describe, for each remote system specified in a line member, the local (System/36) characteristics of MSRJE. (The manual *Using System/36 Communications* contains information on defining line members.) Many local characteristics are affected by what has been specified for communicating with MSRJE by the host system.

You should refer to the host system work sheets (in Appendix A) during subsystem configuration. You will have to use the values provided on the work sheet by the host system personnel, or you will need to enter the values on the work sheet and give it to the host system personnel.

In the following example, the subsystem member is named BSCSUB1 and the remote location is named BSCLOC1. This subsystem member is associated with the line member BSCLINE1.

Display 1.0 SSP-ICF Configuration Member Definition

```
   1.0              SSP-ICF CONFIGURATION MEMBER DEFINITION                    W1


  1. Configuration member name  . . . . . . . . . . . . . . . .

  2. Library name . . . . . . . . . . . . . . . . . . . . . . .   RJELIB

  3. Select one of the following:
        1. Create new member
        2. Edit existing member
        3. Create new member from existing member
        4. Remove a member
        5. Review a member
     Option . . . . . . . . . . . . . . . . . . . . . . . . 1-5




  Cmd7-End      Cmd19-Cancel


   Help text available throughout CNFIGICF by pressing the Help key
```

Note: *On this display and on all displays that follow, you can press command key 7 to end the CNFIGICF procedure or command key 19 to cancel the CNFIGICF procedure. Command key 7 saves any valid definitions you have performed; command key 19 immediately ends CNFIGICF, and you lose any definitions you have performed but not saved.*

1.   **Configuration member name:** Specify a name for this subsystem member. The name is used to store the member in a library and is referenced by the ENABLE and DISABLE procedure commands (these commands are described in Chapter 3). In the example, BSCSUB1 is used.

2.   **Library name:** Specify the name of the library in which you want this member stored. The default library is the current user library (RJELIB in the example). It is recommended that you do not store the member in the system library (#LIBRARY) because members you store in #LIBRARY may be lost if a release update is later performed.

     The subsystem member must be stored in the same library as the line member with which it will be associated.

3.   **Select one of the following:** Specify the number (1 through 5) that corresponds to the operation you want to perform. The options are:

     1.   Create a new member allows you to specify the configuration values for a new subsystem member.

     2.   Edit existing member allows you to view and/or change the values previously specified for a subsystem member.

     3.   Create a new member from an existing member allows you to use an existing subsystem member as the basis for a new subsystem member. You need change only those values necessary. The existing member is not changed.

     4.   Remove a member allows you to remove a subsystem member from the library. Note that the definition is no longer available once it is removed.

     5.   Review a member allows you to view the values specified for a subsystem member. No changes can be made.

If you select option 3 for prompt 3, display 1.0 is updated with two additional prompts when you press the Enter key. If you select any other option, display 2.0 is presented.

Because a new subsystem member is being created in the example, the next display would be display 2.0. However, to illustrate how display 1.0 is updated if option 3 is selected for prompt 3, the next display described is the updated version of display 1.0.

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│    1.0            SSP-ICF CONFIGURATION MEMBER DEFINITION        W1   │
│                                                                       │
│   1. Configuration member name  . . . . . . . . . . . . . . . .  BSCSUB1 │
│                                                                       │
│   2. Library name . . . . . . . . . . . . . . . . . . . . . . .  RJELIB │
│                                                                       │
│   3. Select one of the following:                                     │
│         1. Create new member                                          │
│         2. Edit existing member                                       │
│         3. Create new member from existing member                     │
│         4. Remove a member                                            │
│         5. Review a member                                            │
│      Option . . . . . . . . . . . . . . . . . . . . . . . 1-5   3     │
│                                                                       │
│   4. Existing member name . . . . . . . . . . . . . . . . . . .       │
│                                                                       │
│   5. Existing member library name . . . . . . . . . . . . . . .  RJELIB │
│                                                                       │
│   Cmd7-End     Cmd19-Cancel                                           │
│                                                                       │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

4.   **Existing member name:** This prompt appears only if option 3 was selected for prompt 3. Specify the name of the existing subsystem member that you want to use as the basis for a new subsystem member.

5.   **Existing member library name:** This prompt appears only if option 3 was selected for prompt 3. The default is the name specified for prompt 2 (RJELIB). Specify the name of the library in which the member named in prompt 4 is stored.

| Display 2.0 SSP-ICF Configuration Member Type

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│    2.0                 SSP-ICF CONFIGURATION MEMBER TYPE      BSCSUB1   W1 │
│   Select the member type from the following options:                      │
│           1. INTRA                                                         │
│           2. BSC                                                           │
│           3. SNA                                                           │
│           4. ASYNC                                                         │
│                                                                           │
│      Option . . . . . . . . . . . . . . . . . . . . . . . . . . . 1-4      │
│                                                                           │
│                                                                           │
│               .                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│    Cmd3-Previous display                       Cmd19-Cancel               │
│                                                    COPR IBM Corp. 1986     │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

Note: *On this display and all displays that follow for subsystem member
           configuration, the member name (BSCSUB1), as specified for prompt 1 on
           display 1.0, is shown in the upper right-hand corner. Pressing command key 3
           returns you to the previous display.*

Select one of the following options: Specify the type of protocol that you are
   defining. Select option 2 (BSC).

| Display 3.0 BSC Configuration Member Type

```
┌─────────────────────────────────────────────────────────────────────────┐
│                                                                           │
│    3.0                 SSP-ICF CONFIGURATION MEMBER TYPE      BSCSUB1   W1 │
│   1. BSC member type . . . . . . . . . . . . . . . . . . . . . . 1,2       │
│           1. BSC subsystem member                                         │
│           2. BSC line member                                              │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                Cmd19-Cancel               │
│                                                    COPR IBM Corp. 1986     │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

1.   **BSC member type:** Specify the type of member that you are defining. Select
      option 1 (BSC subsystem member).

Display 20.0 BSC Subsystem Member Selection

```
  20.0                 BSC SUBSYSTEM MEMBER SELECTION              BSCSUB1    W1


  1. Line member name . . . . . . . . . . . . . . . . . . . . . . .
  2. Select subsystem type from the following options:
        1. BSC CCP
        2. BSC CICS
        3. BSCEL
        4. BSC IMS/IRSS
        5. BSC 3270
        6. BSC MSRJE
     Option . . . . . . . . . . . . . . . . . . . . . . . . . 1-6




  Cmd3-Previous display                         Cmd19-Cancel
```

1. **Line member name:** Specify the name of the line member with which this
    subsystem member is to be associated. The line member name was specified
    on display 1.0 during line member configuration.

    For the example, the subsystem member is associated with the BSC line
    member named BSCLINE1.

2. **Select subsystem type from the following options:** Specify option 6 (BSC
    MSRJE).

When you complete display 20.0 and press the Enter key, you begin defining the
local characteristics of MSRJE, beginning with display 29.0.

Display 29.0 Remote Location Selection

```
   29.0                      REMOTE LOCATION SELECTION              BSCSUB1    W1
 1. Select from the following options:
      1-Create

    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
 2. Remote location name . . . . . . . . . . . . . . . . . . . . . . . :
 3. Remote system name . . . . . . . . . . . . . . . . . . . . . . . . :
 4. Existing location name . . . . . . . . . . . . . . . . . . . . . . :
 --------------------------------------------------------------------------------
 OPTION      LOCATION      REMOTE SYSTEM                        Page 1 of 1
                           BSCHOST1




            Cmd8-Reset          Cmd19-Cancel        Roll-Page
 No remote locations are configured
```

1. **Select from the following options:**

    1-Create. Define a new location.

    *Note: If no remote locations exist within the remote system, option 1,
            Create, is the only option available.*

    2-Edit. Change an existing location.

    3-Create from existing. Define a new remote location using an existing
    remote location as the base.

    4-Remove. Delete a remote location. It will no longer exist in this
    member.

    5-Review. Display an existing remote location.

2. **Remote location name:** Enter the name of the remote location that this
    subsystem communicates with. This name is used in the ENABLE, DISABLE,
    and MSRJE procedures to start or stop communications with this remote
    location. This name also appears in system messages to help the operator
    associate the message with a particular remote location. No two remote
    location names can be the same in this subsystem member.

3. **Remote system name:** Enter the name of the remote system for which this
    remote location is being defined.

4. **Existing location name:** Enter an existing location name if you are using option
    3 to create a new remote location using an existing location as the base.

On the bottom half of the display, all previously defined remote locations are listed along with the remote systems they are associated with. You may edit, remove, or review any of these remote locations by entering the correct option number in the column to the left of the remote location you want to work with. Use the Roll keys to page through the list of remote locations.

Display 30.0 Remote Location Definition

```
  30.0                    REMOTE LOCATION DEFINITION              BSCSUB1   W1

       Remote system BSCHOST1                Remote location BSCLOC1

  1. Activate location at ENABLE? . . . . . . . . . . . . . . . Y,N  Y






                                     Cmd19-Cancel

```

The name you specified for the **Remote system** prompt on the previous display is presented here (BSCHOST1 in the example).

The **Remote location name** specified here is used in the MSRJE, ENABLE, and DISABLE procedure commands when you want to communicate with this remote system. (See Chapter 3 for a description of these procedure commands.) In the example, the remote location is named BSCLOC1.

Note: The remote system name and the remote location name are presented for information only. They cannot be changed on this display.

1. **Activate location at ENABLE?:** Specify Y if you want the remote location enabled when the ENABLE procedure command (without a remote location name specified) is entered that specifies this subsystem member. If you specify N for this prompt, you must enable the remote location by specifying the **Remote location name** on an ENABLE procedure command.

The ENABLE procedure command is described in Chapter 3.

On each of the following displays, the remote system name (BSCHOST1 in the example) and the remote location name (BSCLOC1 in the example) are displayed below the display heading.

Display 34.0 MSRJE Subsystem Member Attributes

```
 34.0                  MSRJE SUBSYSTEM MEMBER ATTRIBUTES              BSCSUB1    W1


        Remote system BSCHOST1        Remote location BSCLOC1

 1. Host name  . . . . . . . . . . . . . . . . . . . . . . . . .
 2. Termination delay in minutes   . . . . . . . . .  0-99,blank
 3. Priority . . . . . . . . . . . . . . . . . . . . . . H,M,N,L  N



 6. Display informational messages?  . . . . . . . . . . . . Y,N  Y


                                          Cmd19-Cancel
```

1. **Host name:** Specify the name of the host system with which this
    configuration record is to be used to communicate. Valid entries are:

    - JES2 for JES2 under MVS

    - JES3 for JES3 under MVS

    - RES for RES under OS/VS1

    - VM370 for VM370 RSCS

    In the example, RES is used.

2. **Termination delay in minutes:** Specify the length of time, in minutes, that MSRJE will remain active after all readers, printers, and punches have finished and the MSRJE console has been released. Valid values are 00 through 99 or blank. If blank is specified, MSRJE will not terminate automatically and must be terminated by entering the MSRJE END utility control statement or the DISABLE procedure command.

3. **Priority:** Specify the priority level that is to be assigned to readers, printers, and punches activated by MSRJE. N (normal) is the default. All priority values correspond to your definitions of priority levels on the // ATTR OCL statement. The valid selections are:

   - H for high priority

   - N for normal job priority

   - M for medium priority

   - L for low priority

   The MSRJE console always has high (H) priority.

   For a description of the // ATTR OCL statement, see the manual *Procedures and Commands Summary.*

6. **Display informational messages?:** If you specify Y (Yes) for this prompt, all MSRJE informational messages are displayed on the MSRJE console. These messages inform the MSRJE operator of local MSRJE activities. This prompt does not control messages received from the remote host system.

When you complete display 34.0 and press the Enter key, display 35.0 appears to prompt you for the host system signon/logon information.

Display 35.0 MSRJE Logon Attributes

```
35.0                    MSRJE LOGON ATTRIBUTES                    BSCSUB1    W1
        Remote system BSCHOST1        Remote location BSCLOC1




3. Enter host LOGON/SIGNON command below:
   ....:...10....:...20....:...30....:...40....:...50....:...60....:...70....:....






                                            Cmd19-Cancel
```

The information specified for the logon/signon must match what the host system is expecting. The following formats are general for the supported host systems. Refer to the host system work sheet (in Appendix A), or contact the host system personnel to determine the exact format of the information.

3. **Enter host LOGON/SIGNON command below:** Specify the LOGON or SIGNON command that is required by the host system with which this configuration of MSRJE will be communicating. The formats for the supported host systems are:

   - JES2

```
/*SIGNON          ⎰REMOTEnn⎱  [password1]        [password2]
                  ⎱RMTnn   ⎰
```
S7909035-0

The command begins in position 1. The **REMOTEnn or RMTnnn** parameter begins in position 16 and specifies the terminal number of System/36 as specified by the **RMTnnn** parameter of the JES2 work station definition.

The **password1** parameter is optional and, if used, must be 1 through 8 alphameric characters beginning in position 25 and must match the password specified for the **PASSWORD** subparameter of the **LINEnnn** parameter during the definition of remote work stations for JES2 at the host system.

The **password2** parameter is optional and, if used, is 1 through 8 alphameric characters beginning in position 73 and must match the value specified for the **PASSWORD** parameter of the **RMTnnn** parameter during remote work station definition for JES2 at the host system.

- JES3

```
/*SIGNON        namex [A] password1 password2
```

The command begins in position 1. The **namex** parameter begins in position 16 and must match the value specified for the **N** parameter in the **RJPTERM** statement during JES3 generation at the host system.

The **A** is optional and, if used, must be in position 22. It identifies System/36 to the host system as being a programmable RJE work station with automatic readers.

The **password1** parameter must be 1 through 8 alphameric characters beginning in position 25. It must match the value specified for the **P** parameter in the **RJPLINE** statement at the host system.

The **password2** parameter begins in position 35. It is 1 through 8 alphameric characters and must match the value specified for the **P** parameter in the **RJPTERM** statement at the host system.

- RES

```
LOGON userid[/password]TERM(termid)[PROC(procname)]
```

$$\left[\left\{{NOTICES \atop NONOTICES}\right\}\right]\left[\left\{{MAIL \atop NOMAIL}\right\}\right]$$

S7909008-0

The command begins in position 1. The **userid** parameter identifies System/36 to the host system, and must match the value specified at the host system for the ADD subcommand of the ACCOUNT command.

The **password** parameter is optional and, if used, is 1 through 8 alphameric characters and must be separated from the **userid** by a slash (/). In addition, the value must match the entry made in the ADD subcommand for the specified user.

TERM(termid) specifies the terminal identification number and must match the value entered for the TERMID parameter for System/36 in the TERMINAL macro for the RTAM generation at the host system.

The **PROC(procname)** allows you to specify a catalogued procedure (procname) at the host system that is to be executed as a part of the logon process.

NOTICES, the default, allows you to specify that all general notices from the host system are to be listed automatically after logon. **NONOTICES** inhibits the listing of notices.

MAIL, the default, allows you to specify that all messages directed to your System/36 be automatically listed after logon. **NOMAIL** inhibits the listing of messages.

- **VM/370 RSCS**

```
/*SIGNON        REMOTEnn [password]
```

The command begins in position 1. The **REMOTEnn** parameter begins in position 16 and defines the remote terminal number of System/36 as defined in the START command at the host system.

The **password** parameter is optional and, if used, is 1 through 8 alphameric characters beginning in position 25 and must match the password specified at the host system in the START command for this terminal.

Because the example is for communicating with RES, the value entered is:

```
LOGON  USER1/PASS1TERM(21) PROC(MRJEPROC)
```

After you press the Enter key, you define the MSRJE environment by completing the information on displays 36.0 and 37.0.

Display 36.0 MSRJE Printer/Punch Attributes

```
 36.0                  MSRJE PRINTER/PUNCH ATTRIBUTES              BSCSUB1    W1


        Remote system BSCHOST1       Remote location BSCLOC1

  1. Forms control table name . . . . . . . . . . . . . . . . . .
  2. Forms set  . . . . . . . . . . . . . . . . . . . . . . 0-8  0
  3. Maximum number of printers . . . . . . . . . . . . . . 0-7  01
  4. Printer file sequence number . . . . . . . . . . . . 1-99  01
  5. Maximum number of punches  . . . . . . . . . . . . . . 0-7  01
  6. Punch file sequence number . . . . . . . . . . . . . 1-99  01


                                               Cmd19-Cancel
```

The entries on display 36.0 define the printers and punches used for MSRJE.

1. **Forms control table name:** Specify the name of the forms control table that is to be used with this MSRJE configuration to control the handling of print and punch data streams received from the host system. The forms control table is created by the MSRJE forms control table utility (see Chapter 5 for information on the forms control table utility).

   If you do not specify a name for this prompt, MSRJE handles print and punch data streams as described in the "Print Default Entry" and "Punch Default Entry" sections of Chapter 5.

2. **Forms set:** Define the use of host forms information from the forms set table. This internally maintained table contains entries for all print and punch devices supported by MSRJE. Use of the table allows MSRJE to save the forms mounted for each device from LOGOFF of one session to LOGON of another session. This is useful if the host system views System/36 as the type of device that keeps the same form mounted all the time.

   Valid entries are 0 through 8; 0 is the default. If 0 is specified, MSRJE will not maintain a forms set table for this location and, therefore, will not maintain the forms names between sessions. Because the table can contain the definitions of forms for up to eight separate host systems, the value entered here defines which set you want used when this configuration is active.

   If the same forms set (other than 0) is specified in different MSRJE configurations, unexpected results may occur.

   Note: Initially, the forms name for all devices of all forms sets is all blanks.

3. **Maximum number of printers:** Specify the maximum number of printer tasks that can be active. Enter a value from 0 through 7; the default is 01. This value must be at least as large as the number of printers specified at the host system for this MSRJE configuration.

   The value for the number of printers is specified at the host system as follows:

   - JES2, specified in the NUMPR subparameter of the RMTnnn parameter on the JES2 work station definition

   - JES3, specified in the PR subparameter of the RJPTERM parameter on the JES3 work station definition

   - RES, specified in the PTRS parameter of the TERMINAL macro for the RTAM stage 1 generation

   - VM/370 RSCS, always 0 or 1, depending on whether you expect print output

   If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter the **Maximum number of printers** on the work sheet.

   The total number of printers (specified here) and punches (specified for prompt 5) must be 8 or less.

4. **Printer file sequence number:** Specify a number from 01 through 99 to define the beginning sequence number for printer files written to disk; the default is 01. See Chapter 3 for a description of print output, and see Chapter 5 for a description of the forms control table entries that control print data written to disk.

5. **Maximum number of punches:** Specify the maximum number of punch tasks that can be active. Enter a value from 0 through 7; the default is 01. This value must be at least as large as the number of punches specified at the host system for this MSRJE configuration.

   The value for the number of punches is specified at the host system as follows:

   - JES2, specified in the NUMPU subparameter of the RMTnnn parameter on the JES2 work station definition

   - JES3, specified in the PU subparameter of the RJPTERM statement on the JES3 work station definition

   - RES, specified in the PCHS parameter of the TERMINAL macro for the RTAM stage 1 generation

   - VM/370 RSCS, always 0 or 1, depending on whether you expect punch output

If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter the **Maximum number of punches** on the work sheet.

The total number of punches (specified here) and printers (specified for prompt 3) must be 8 or less.

6. **Punch file sequence number:** Specify a number from 01 through 99 to define the beginning sequence number for punch files written to disk; the default is 01. See Chapter 3 for a description of punch output, and see Chapter 5 for a description of the forms control table entries that control punch data written to disk.

Once you press the Enter key, the last display, display 37.0, is presented.

Display 37.0 MSRJE Reader Attributes

```
37.0                    MSRJE READER ATTRIBUTES                 BSCSUB1    W1


      Remote system BSCHOST1        Remote location BSCLOC1

1. Maximum number of MSRJE readers  . . . . . . . . . . .  1-32  01

2. Maximum number of host readers . . . . . . . . . . . . . 1-7  01

3. Transparency?  . . . . . . . . . . . . . . . . . . . . . Y,N  N

4. Specify default value for TYPE . . . . . . . . . . . . P,D,S  P

5. Specify default value for CMD  . . . . . . . . . . . . . Y,N  Y

6. Specify default value for DEL  . . . . . . . . . . . . . Y,N  N



                                           Cmd19-Cancel
```

Display 37.0 allows you to define the readers used by MSRJE and defined at the
host system.

1. **Maximum number of MSRJE readers:** Specify the number, from 1 through
   32, of readers that can be active at one time for this MSRJE configuration.
   The default is 1.

   By specifying a value that is greater than the value specified for the **Maximum
   number of host readers** prompt, you can start MSRJE readers and then allow
   them to wait for a host reader to become available.

   The number of readers that you specify here depends on your RJE
   environment. For example, if several users will be signing on to MSRJE and
   sending data files to the host subsystem, you should specify as many readers
   as you expect will be needed at one time. If all the host readers (prompt 2,
   Maximum number of host readers) are in use, MSRJE will display a message
   and allow you to wait for a host reader to become available. You do not have
   to re-enter a request to start a reader.

2. **Maximum number of host readers:** Specify the maximum number of readers that can be sending data to the host system at one time. The value entered can be from 1 through 7; the default is 1. This value should not exceed the number of readers specified for the host during host system generation. The maximum number of readers is specified at the host subsystems as follows:

- JES2, specified in the NUMRD subparameter of the RMTnnn parameter on the JES2 work station definition

- JES3, specified in the RD subparameter of the RJPTERM statement on the JES3 work station definition

- RES, specified in the RDRS parameter of the TERMINAL macro for the RTAM stage 1 generation

- VM/370 RSCS, always 1

If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter the **Maximum number of host readers** on the work sheet.

3. **Transparency?:** Specify whether text transparency can be used with this MSRJE configuration. N, the default, specifies that text transparency cannot be used. Y specifies that text transparency can be used.

Transparency is normally used if you will be sending and receiving data that contains data characters, which could be handled as control characters by the BSC protocol. Normally, this occurs in object modules (load members) or binary data streams.

Whether you can use transparency depends on the value specified at the host subsystem, as follows:

- JES2, specified in the TRANSP/NOTRANSP subparameter of the LINEnnn parameter (defines whether the line supports transparency); and in the TRANSP/NOTRANSP subparameter of the RMTnnn parameter (defines whether System/36 can use transparency)

- JES3, specified in the F subparameter of the RJPTERM parameter. F=NTRS specifies no transparency. Transparency is supported if F=NTRS is not specified.

- RES, subparameter 2 of the LDESCR parameter in the LINE macro defines whether the line supports transparency; subparameter 4 of the TDESCR parameter of the TERMINAL macro determines whether System/36 can use transparency. Both macros are defined for the RTAM stage 1 generation.

- VM/370 RSCS, always sends punch data in transparent text mode and accepts transparent data.

If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter your response to the **Transparency?** prompt on the work sheet.

4. **Specify default value for TYPE:** Specifies the default value to be used for the TYPE parameter on the MSRJE procedure or in READFILE utility control statements entered when this configuration is active. Specifying a value here is useful if most MSRJE procedure or READFILE statements you use will have the same TYPE parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

    Valid entries are:

    - P for a procedure member

    - D for a disk file

    - S for a source member

5. **Specify default value for CMD:** Specify the default value to be used for the CMD parameter on the MSRJE procedure or in the READFILE MSRJE control statement for utility control statements entered when this configuration is active. Y indicates that the file contains utility control statements (utility control statements are described in Chapter 4); N indicates that the file does not contain utility control statements.

    Specifying a value here is useful if most MSRJE procedure or READFILE statements you use will have the same CMD parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

6. **Specify default value for DEL:** Specifies the default value to be used for the DEL parameter on the MSRJE procedure or in the READFILE utility control statement if no specification is made in the command for the parameter. Y specifies that deleted records in the file are to be transmitted to the host system. N specifies that deleted records in the file are not to be transmitted to the host system.

    Specifying a value here is useful if most MSRJE procedure or READFILE statements you use will have the same DEL parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

Once you have completed display 37.0, display 29.0 is again displayed, and you can then define another MSRJE configuration. To end the definition of MSRJE configurations, press command key 7. Display 1.0 is then presented, and you can either define another line or subsystem member, or end the CNFIGICF procedure by pressing command key 7.

Defining an MSRJE Subsystem Member Configuration for SNA

During subsystem member configuration, you can describe, for each remote system specified in a line member, the local (System/36) characteristics of MSRJE. (The manual *Using System/36 Communications* contains information on defining line members.) Many local characteristics are affected by what has been specified at the host system for communicating with MSRJE.

You should refer to the host system work sheets (in Appendix A) during subsystem configuration. You will have to use the values provided on the work sheet by the host system personnel, or you will need to enter the values on the work sheet and give it to the host system personnel.

In the following example, the subsystem member is named SNASUB1 and the remote location is named SNALOC1. This subsystem member is associated with the line member SNALINE1.

Display 1.0 SSP-ICF Configuration Member Definition

```
  1.0                SSP-ICF CONFIGURATION MEMBER DEFINITION                 W1

  1. Configuration member name  . . . . . . . . . . . . . . . . . .

  2. Library name . . . . . . . . . . . . . . . . . . . . . . . .  RJELIB

  3. Select one of the following:
        1. Create new member
        2. Edit existing member
        3. Create new member from existing member
        4. Remove a member
        5. Review a member
     Option . . . . . . . . . . . . . . . . . . . . . . . . . . 1-5




  Cmd7-End      Cmd19-Cancel


   Help text available throughout CNFIGICF by pressing the Help key
```

On this display and on all displays that follow, you can press command key 7 to end the CNFIGICF procedure or command key 19 to cancel the CNFIGICF command. Command key 7 saves any valid definitions you have performed; command key 19 immediately ends CNFIGICF, and you lose any definitions you have performed but not saved.

1. **Configuration member name:** Specify a name for this configuration of the subsystem. This name is used to store the member in a library and is referenced in the ENABLE and DISABLE procedure commands. In the example, the subsystem member is named SNASUB1.

2. **Library name:** Specify the name of the library in which you want this member stored. The default is the current user library (RJELIB in the example). You can use that library or specify the name of another user library. It is recommended that you do not store the member in the system library (#LIBRARY). If you store the member in #LIBRARY, it may be destroyed if a System/36 release update is performed.

    The library specified here must be the same library in which the associated line member (SNALINE1 in the example) is stored.

3. **Select one of the following:** Specify the number (1 through 5) that corresponds to the operation you want to perform. The options are:

    1. Create a new member allows you to specify the configuration values for a new subsystem member.

    2. Edit existing member allows you to view and/or change the values previously specified for a subsystem member.

    3. Create a new member from an existing member allows you to use an existing subsystem member as the basis for a new subsystem member. You need change only those values necessary. The existing subsystem member is unchanged by this option.

    4. Remove a member allows you to remove a subsystem member from the library. Note that the definition is no longer available once it is removed.

    5. Review a member allows you to view the values specified for a subsystem member. No changes can be made.

If option 3 is selected for prompt 3, this display is updated with two additional prompts when the the Enter key is pressed. If any other option is selected, display 2.0 is presented.

Because a new subsystem member is being created in the example, the next display would be display 2.0. However, to illustrate how display 1.0 is updated if option 3 is selected for prompt 3, the next display described is the updated version of display 1.0.

```
/￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣￣\
|                                                               |
|   1.0           SSP-ICF CONFIGURATION MEMBER DEFINITION    W1 |
|                                                               |
|   1. Configuration member name  . . . . . . . . . . . . . . .  SNASUB1 |
|                                                               |
|   2. Library name . . . . . . . . . . . . . . . . . . . . . . RJELIB |
|                                                               |
|   3. Select one of the following:                             |
|         1. Create new member                                  |
|         2. Edit existing member                               |
|         3. Create new member from existing member             |
|         4. Remove a member                                    |
|         5. Review a member                                    |
|      Option . . . . . . . . . . . . . . . . . . . . . . 1-5  3 |
|                                                               |
|   4. Existing member name . . . . . . . . . . . . . . . . . . |
|                                                               |
|   5. Existing member library name . . . . . . . . . . . . . .  RJELIB |
|                                                               |
|                                                               |
|   Cmd7-End     Cmd19-Cancel                                   |
|                                                               |
_____/
```

4.   **Existing member name:** This prompt appears only if option 3 was selected for prompt 3. Specify the name of the existing subsystem member that you want to use as the basis for the new subsystem member.

5.   **Existing member library name:** This prompt appears only if option 3 was selected for prompt 3. Specify the name of the library in which the member named in prompt 4 is stored. The default is the value specified for prompt 2 (RJELIB in the example).

| Display 2.0 SSP-ICF Configuration Member Type

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│    2.0                 SSP-ICF CONFIGURATION MEMBER TYPE          SNASUB1   W1 │
│   Select the member type from the following options:                          │
│          1. INTRA                                                             │
│          2. BSC                                                               │
│          3. SNA                                                              │
│          4. ASYNC                                                             │
│                                                                               │
│      Option . . . . . . . . . . . . . . . . . . . . . . . . . . 1-4           │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│    Cmd3-Previous display                       Cmd19-Cancel                   │
│                                                     COPR IBM Corp. 1986       │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

Note: *On this display and all displays that follow for subsystem member configuration, the member name (SNASUB1), as specified for prompt 1 on display 1.0, is shown in the upper right-hand corner. Pressing command key 3 returns you to the previous display.*

Select the member type from the following options: Specify the type of protocol that you are defining. Select option 3 (SNA).

| Display 4.0 BSC Configuration Member Type

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│    4.0                  SNA CONFIGURATION MEMBER TYPE             SNASUB1   W1 │
│   1. SNA member type . . . . . . . . . . . . . . . . . . . . . 1,2,3          │
│          1. SNA subsystem member                                              │
│          2. SNA/SDLC line member                                              │
│          3. SNA/X.25 line member                                              │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                                               │
│                                                Cmd19-Cancel                   │
│                                                     COPR IBM Corp. 1986       │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

1.   **SNA member type:** Specify the type of member that you are defining. Select option 1 (SNA subsystem member).

Display 21.0 SNA Subsystem Member Selection

```
┌─────────────────────────────────────────────────────────────────────────┐
│ 21.0                 SNA SUBSYSTEM MEMBER SELECTION           SNASUB1  W1 │
│                                                                           │
│                                                                           │
│  1. Line member name . . . . . . . . . . . . . . . . . . . . . . . .      │
│                                                                           │
│  2. Select subsystem type:                                                │
│        1. Peer                                                            │
│        2. SNA Upline                                                      │
│        3. SNA 3270                                                        │
│        4. Finance                                                         │
│        5. SNA MSRJE                                                       │
│        6. APPC                                                            │
│     Option . . . . . . . . . . . . . . . . . . . . . . . . . . 1-6        │
│                                                                           │
│                                                                           │
│                                                                           │
│                                                                           │
│  Cmd3-Previous display                             Cmd19-Cancel           │
│                                                                           │
│                                                                           │
└─────────────────────────────────────────────────────────────────────────┘
```

1. **Line member name:** Specify the name of the line member with which this
    subsystem member is to be associated. The line member name was specified
    on display 1.0 during line member configuration.

    For the example, the subsystem member is associated with the SNA line
    member named SNALINE1.

2. **Select subsystem type:** Specify option 5 (SNA MSRJE).

When you complete display 21.0 and press the Enter key, you begin defining the
local characteristics of MSRJE, beginning with display 29.0.

Display 29.0 Remote Location Selection

```
   29.0                        REMOTE LOCATION SELECTION            SNASUB1     W1
   1. Select from the following options:
         1-Create

      Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
   2. Remote location name . . . . . . . . . . . . . . . . . . . . . .
   3. Remote system name . . . . . . . . . . . . . . . . . . . . . .
   -------------------------------------------------------------------------------
   OPTION     LOCATION     REMOTE SYSTEM                         Page 1 of 1
                           SNAHOST1




                    Cmd8-Reset         Cmd19-Cancel       Roll-Page
       No remote locations are configured
```

1. **Select from the following options:**

   1-Create. Define a new location.

   Note: *If no remote locations exist within the remote system, option 1,*
   Create, is the only option available.

   2-Edit. Change an existing location.

   3-Create from existing. Define a new remote location using an existing
   remote location as the base.

   4-Remove. Delete a remote location. It will no longer exist in this
   member.

   5-Review. Display an existing remote location.

2. **Remote location name:** Enter the name of the remote location that this
   subsystem communicates with. This name is used in the ENABLE, DISABLE,
   and MSRJE procedures to start or stop communications with this remote
   location. This name also appears in system messages to help the operator
   associate the message with a particular remote location. No two remote
   location names can be the same in this subsystem member.

3. **Remote system name:** Enter the name of the remote system for which this
   remote location is being defined.

On the bottom half of the display, all previously defined remote locations are listed
along with the remote systems they are associated with. You may edit, remove, or
review any of these remote locations by entering the correct option number in the
column to the left of the remote location you want to work with. Use the Roll keys
to page through the list of remote locations.

Display 30.0 Remote Location Definition

```
┌─────────────────────────────────────────────────────────────────────────┐
│   30.0                  REMOTE LOCATION DEFINITION            SNASUB1    W1 │
│        Remote system SNAHOST1                 Remote location SNALOC1       │
│   1. Activate location at ENABLE? . . . . . . . . . . . . . . Y,N   Y       │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                   Cmd19-Cancel                              │
│                                                                             │
│                                                                             │
└─────────────────────────────────────────────────────────────────────────┘
```

The name you specified for the **Remote system** prompt on display 29.0 is presented here (SNAHOST1 in the example).

The **Remote location name** specified here is used in the MSRJE, ENABLE, and DISABLE procedure commands when you want to communicate with this remote system. (See Chapter 3 for a description of these procedure commands.) In the example, the remote location is named SNALOC1.

Note: *The remote system name and the remote location name are presented for information only. They cannot be changed on this display.*

1.   **Activate location at ENABLE?:** Specify Y if you want the remote location enabled when the ENABLE procedure command (without a remote location name specified) is entered that specifies this subsystem member. If you specify N for this prompt, you must enable the remote location by specifying the **Remote location name** on an ENABLE procedure command.

The ENABLE procedure command is described in Chapter 3.

More than one remote location can be active on the same line for SNA MSRJE. This means that you can have more than one RJE terminal active to one or more remote locations at one remote (host) system.

On each of the following displays, the remote system name (SNAHOST1 in the example) and the remote location name (SNALOC1 in the example) are displayed below the display heading.

Display 34.0 MSRJE Subsystem Member Attributes

```
34.0                   MSRJE SUBSYSTEM MEMBER ATTRIBUTES              SNASUB1    W1


        Remote system SNAHOST1       Remote location SNALOC1

  1. Host name  . . . . . . . . . . . . . . . . . . . . . . . . . .
  2. Termination delay in minutes   . . . . . . . . .  0-99,blank
  3. Priority . . . . . . . . . . . . . . . . . . . . . H,M,N,L  N
  4. Maximum number of sessions . . . . . . . . . . . . .  1-46  01
  5. Minimum number of sessions . . . . . . . . . . . . .  1-46  01
  6. Display informational messages?  . . . . . . . . . . . Y,N  Y



                                              Cmd19-Cancel
```

1. **Host name:** This entry is optional. You use it to specify the name of the host system for this remote location. If you do not specify a name, MSRJE accepts any application name when MSRJE is started. If you specify a name, MSRJE is started only if the name you specify matches the application name received from the host system.

    The name you specify must match:

    *   The APPLID parameter (if used) in the LOGON command

    *   The label on the VTAM APPL definition statement of the VTAM application definition

    *   The following, based on the subsystem:

        -   For JES2, the APPLID subparameter of the LOGON1 initialization parameters
        -   For JES3, the APPLID parameter of the COMMDEFN macro
        -   For RES, the APPLID parameter of the RTAM macro
        -   For VSE/POWER, the third positional subparameter of the SNA parameter of the POWER macro

2. **Termination delay in minutes:** Specify the length of time, in minutes, that MSRJE will remain active after all readers, printers, and punches have finished and the MSRJE console has been released. Valid values are 00 through 99 or blank. If blank is specified, MSRJE will not terminate automatically and must be terminated by entering the MSRJE END utility control statement or using the DISABLE procedure command.

    Note: Command key 7 ends the MSRJE console or reader at the display station, but the subsystem remains active.

3. **Priority:** Specify the priority level that is to be assigned to tasks activated by MSRJE. N (normal) is the default. All priority values correspond to your definitions of priority levels on the // ATTR OCL statement. The valid selections are:

   - H for high priority

   - N for normal job priority

   - M for medium priority

   - L for low priority

   The MSRJE console always has high (H) priority.

   For a description of the // ATTR OCL statement, see the manual *Procedures and Commands Summary.*

4. **Maximum number of sessions:** Specify the maximum number of logical unit sessions that can be active at one time with the host system defined for this MSRJE configuration. The number of sessions specified cannot exceed the number of logical units selected for MSRJE on display 14.0 during line member definition for this remote system. (The manual *Using System/36 Communications* contains more information.)

   The default is 01, and the maximum is 46.

5. **Minimum number of sessions:** Specify the minimum number of LU sessions that should be active with the host system defined for this MSRJE configuration. If the number of active sessions drops below this number, an END utility control statement is simulated by MSRJE. Any MSRJE functions then active are allowed to terminate normally. If this number of sessions cannot be activated when MSRJE is started, MSRJE will not start.

   The default is 01, and the maximum is 46.

6. **Display informational messages?:** If you specify Y (Yes) for this prompt, all MSRJE informational messages are displayed on the MSRJE console. These messages inform the MSRJE operator of local MSRJE activities. This prompt does not control messages received from the remote host system.

Once you press the Enter key, display 35.0, which allows you to define the host system logon/signon information, is displayed.

Display 35.0 MSRJE Logon Attributes

```
  35.0                 MSRJE LOGON ATTRIBUTES                SNASUB1    W1
          Remote system SNAHOST1      Remote location SNALOC1

   1. Is LOGON formatted?  . . . . . . . . . . . . . . . . . Y,N  N

   2. Should MSRJE send first LOGON? . . . . . . . . . . . . Y,N  Y

   3. Enter host LOGON/SIGNON command below:
   ....:...10....:...20....:...30....:...40....:...50....:...60....:...70....:....




                                        Cmd19-Cancel

```

1.   **Is LOGON formatted?:** Use of a formatted logon causes an SNA INITIATE-SELF command to be sent to the host system and enables MSRJE to more accurately recognize logon failures.

     Specifying an N for this prompt indicates that you will enter the LOGON command for prompt 3. If you specify Y, prompts 4 through 6 are displayed after you press the Enter key.

2.   **Should MSRJE send first LOGON?:** This parameter is dependent on whether the host system is generated to require that System/36 send the first logon or whether the host system will send the first logon.

     If you specify Y, MSRJE will send the logon to the host system when the data link is established. If you specify N, MSRJE will wait for the host system to send the first logon.

     If you specify N for this prompt, you may still have to enter the logon information for prompt 3 (unformatted logon) or prompts 4 through 6 (formatted logon).

     •   If you specify Y here, you must enter the logon information

     •   If you specify N here, then:

         —   If you specified a value greater than 1 for prompt 4 on display 34.0, you must enter logon information.

         —   If you specified 1 for prompt 4 on display 34.0, you do not have to specify the logon information.

The host system determines whether to receive or send the first logon as follows:

- For JES2, the host system:

  — Receives the first logon if you specified A=N on a $T RMTnnn command entered at the host system before using MSRJE. You should specify Y for prompt 2 on display 35.0.

  — Sends the first logon if you specified A=Y on a $T RMTnnn command entered at the host system before using MSRJE. You should specify N for prompt 2 on display 35.0.

  Note: *You can enter a $T RMTnnn command at the System/36 MSRJE console. It will take effect the next time you begin communicating with the host system.*

- For JES3, the host system:

  — Receives the first logon if you specified N for the AUTO parameter of the RJPWS statement on the JES3 work station definition. You should specify Y for prompt 2 on display 35.0.

  — Sends the first logon if you specified Y for the AUTO parameter of the RJPWS statement on the JES3 work station definition. You should specify N for prompt 2 on display 35.0.

- For RES, the host system:

  — Receives the first logon if you specified 0 for the PLGN parameter on the TERMINAL macro during RTAM generation. You should specify Y for prompt 2 on display 35.0.

  — Sends the first logon if you specified 1 for the PLGN parameter on the TERMINAL macro for the RTAM generation. You should specify N for prompt 2 on display 35.0.

- For VSE/POWER, the host system always receives the first LOGON command. You should specify Y for prompt 2 on display 35.0.

3. **Enter host LOGON/SIGNON command below:** Specify the LOGON or SIGNON command that is required by the host system with which this MSRJE configuration will be communicating. Refer to the host system work sheet or contact the host system personnel for the exact logon or signon requirements. While the host system may define a special format for the logon, the general format of the logon is:

```
LOGON APPLID(application name)[LOGMODE(modename)]
[DATA(any data)]
```

The value for the APPLID parameter is normally specified as follows:

- For JES2, use JES2

- For JES3, use JES3

- For RES, use RTAM

- For VSE/POWER, use POWER

The value entered for the **LOGMODE** parameter, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. You should obtain the name of the LOGMODE entry from the host system work sheet or from the host system personnel. The table that contains the entry specified is selected by the MODETAB parameter of the PU macro during NCP/VTAM generation at the host system. The table itself is defined using the MODEENT macro.

The value entered for the DATA parameter is based on the type of host system, as follows.

- JES2

  ```
  DATA(RMTnnn [,password1] [,password2])
  ```

  The **RMTnnn** parameter specifies the terminal number of System/36 as specified in the **RMTnnn** parameter of the host system's remote terminal description.

  password1 parameter is optional and, if specified, is 1 through 8 alphameric characters and must match the password specified for the **PASSWORD** subparameter of the **LINEnnn** parameter during the definition of a remote work station for JES2 at the host system.

  The **password2** parameter is optional and, if used, is 1 through 8 alphameric characters and must match the value specified for the **PASSWORD** parameter of the **RMTnnn** parameter during remote work station definition for JES2 at the host system.

- **JES3**

```
DATA(wsname,password)
```

The **wsname** parameter must match the value specified for the **N** parameter in the **RJPWS** statement during JES3 generation at the host system.

The **password** parameter must match the value specified for the **P** parameter in the **RJPWS** statement at the host system.

- **RES**

```
)ATA('userid[/password]TERM(termid)[PROC(procname)]
```

$$\left[\left\{\begin{matrix}\text{NOTICES}\\\text{NONOTICES}\end{matrix}\right\}\right]\left[\left\{\begin{matrix}\text{MAIL}\\\text{NOMAIL}\end{matrix}\right\}\right]')$$

S7909009-0

The **userid** parameter identifies System/36 to the host system, and must match the value specified at the host system for the ADD subcommand of the ACCOUNT command.

The **password** parameter is optional and, if used, must be 1 through 8 alphameric characters and must be separated from the **userid** parameter by a slash (/). In addition, the value must match the entry made in the ADD subcommand for the specified user ID.

The **TERM(termid)** or **T(termid)** parameter specifies the terminal identification number and must match the value entered for the TERMID parameter for System/36 in the TERMINAL macro for the RTAM generation at the host system.

The **PROC(procname)** parameter allows you to specify a catalogued procedure (procname) at the host system that is to be executed as a part of the logon process.

The **NOTICES** parameter, the default, allows you to specify that all general notices from the host system are to be listed automatically after logon. **NONOTICES** inhibits the listing of notices.

The **MAIL** parameter, the default, allows you to specify that all messages directed to your terminal be automatically listed after logon. **NOMAIL** inhibits the listing of messages.

- VSE/POWER

```
DATA('remid[,password][,user information]')
```

The **remid** parameter identifies the remote ID assigned to System/36 during VSE/POWER generation at the host system. It must match the value specified for the **REMOTE** parameter in the **PRMT** statement during VSE/POWER generation.

The **password** parameter, if used, is 1 through 8 alphameric characters and must match the value specified for the **PSWRD** parameter of the **PRMT** statement.

The **user information,** if used, can be up to 16 bytes of data. Ask the host system personnel whether this information is needed.

Note: *The host system may have specified a different logon format than those given here. Contact host system personnel to determine the correct format of the logon.*

Because the example is for communicating with RES, the value entered is:

```
LOGON  APPLID(RTAM) LOGMODE(S36MSRJE) DATA('A0 T(5) PROC(FSPROC)')
```

If you specified Y for prompt 1, display 35.0 is updated to include three more prompts.

```
  35.0                   MSRJE LOGON ATTRIBUTES                  SNASUB1    W1

        Remote system SNAHOST1      Remote location SNALOC1

  1. Is LOGON formatted?  . . . . . . . . . . . . . . . . . . . Y,N  Y

  2. Should MSRJE send first LOGON? . . . . . . . . . . . . . . Y,N  Y



  4. Application ID . . . . . . . . . . . . . . . . . . . . . . .

  5. Mode name  . . . . . . . . . . . . . . . . . . . . . . . . .

  6. Data

                                                   Cmd19-Cancel
```

4. **Application ID:** Normally specified as follows:

    - For JES2, use JES2

    - For JES3, use JES3

    - For RES, use RTAM

    - For VSE/POWER, use POWER

    You should refer to the host system work sheet or contact the host system personnel to verify the entry you should make here.

5. **Mode Name:** The value entered for this prompt, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. The table that contains the entry specified is specified by the MODETAB parameter of the PU macro during NCP/VTAM generation at the host system. The table itself is generated using the MODEENT macro.

6. **Data:** Allows you to specify up to 60 characters of data that is to be submitted with the logon.

    See the description of the **DATA** parameter in prompt 3 for a description of the valid entries.

After you press the Enter key, you define the MSRJE environment by completing the information on the next two displays.

Display 36.0 MSRJE Printer/Punch Attributes

```
 36.0              MSRJE PRINTER/PUNCH ATTRIBUTES              SNASUB1     W1

        Remote system SNAHOST1      Remote location SNALOC1

 1. Forms control table name . . . . . . . . . . . . . . . . . . .
 2. Forms set  . . . . . . . . . . . . . . . . . . . . . . . . 0-8   0
 3. Maximum number of printers . . . . . . . . . . . . . .  0-15  01
 4. Printer file sequence number . . . . . . . . . . . .  1-99  01
 5. Maximum number of punches  . . . . . . . . . . . . . .  0-15  01
 6. Punch file sequence number . . . . . . . . . . . . .  1-99  01
 7. Keep host data sets together . . . . . . . . . . . . . Y,N   Y

                                           Cmd19-Cancel
```

The entries on display 36.0 define the printers and punches used for MSRJE.

1. **Forms control table name:** Specify the name of the forms control table that is to be used with this MSRJE configuration to control the handling of print and punch data streams received from the host system. The forms control table is created by the MSRJE forms control table utility (see Chapter 5 for information on the forms control table utility).

    If you do not specify a name for this prompt, MSRJE handles print and punch data streams as described in the "Print Default Entry" and "Punch Default Entry" sections of Chapter 5.

2. **Forms set:** Define the use of the internally maintained forms set table. The table contains entries for all print and punch devices supported by MSRJE. Use of the table allows MSRJE to remember the forms mounted for each device from LOGOFF of one session to LOGON of another session. This is useful if the host system views System/36 as the type of device that keeps the same form mounted all the time.

    Valid entries are 0 through 8; 0 is the default. If 0 is specified, MSRJE will not maintain a forms set table for this location and, therefore, will not maintain the forms names between sessions. Because the table can contain the definitions of forms for up to eight separate host systems, the value entered here defines which set you want used when this configuration is active.

    If the same forms set (other than 0) is specified in different MSRJE configurations, unexpected results may occur.

    Note: Initially, the forms name for all devices of all forms sets is all blanks.

    If the host system is generated to use Peripheral Data Information Records (PDIRs), specify 0 because the host system will always send forms names.

3. **Maximum number of printers:** Specify the maximum number of printer tasks that can be active. Enter a value from 0 through 15; the default is 01. This value should be at least as large as the number of printers specified at the host system for this MSRJE configuration.

    The value for the number of printers is specified at the host system as follows:

    *   JES2, specified in the NUMPR subparameter of the RMTnnn parameter on the JES2 work station definition

    *   JES3, specified in the PR subparameter of the RJPWS parameter on the JES3 work station definition

    *   RES, specified in the PTRS parameter of the TERMINAL macro for the RTAM stage 1 generation

    *   VSE/POWER, 0 through 3, depending on whether you expect print output

    If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter the **Maximum number of printers** on the work sheet.

4. **Printer file sequence number:** Specify a number from 01 through 99 to define the beginning sequence number for print files written to disk. See Chapter 3 for a description of print output, and see Chapter 5 for a description of the forms control table entries that control print data written to disk.

5. **Maximum number of punches:** Specify the maximum number of punch tasks that can be active. Enter a value from 0 through 15; the default is 01. This value must be at least as large as the number of punches specified at the host system for this MSRJE configuration.

    The value for the number of punches is specified at the host system as follows:

    *   JES2, specified in the NUMPU subparameter of the RMTnnn parameter on the JES2 work station definition

    *   JES3, specified in the PU subparameter of the RJPWS work station definition parameter

    *   RES, specified in the PCHS parameter of the TERMINAL macro for the RTAM stage 1 generation

    *   VSE/POWER, always 0 or 1, depending on whether you expect punch output

    If the host system work sheet has been filled out, refer to it for the correct value. If you are configuring MSRJE before the host system is generated, enter the **Maximum number of punches** on the work sheet.

6.   **Punch file sequence number:** Specify a number from 01 through 99 to define the beginning sequence number for punch files written to disk. See Chapter 3 for a description of punch output, and see Chapter 5 for a description of the forms control table entries that control punch data written to disk.

7.   **Keep host data sets together:** Specify Y to have MSRJE attempt to write each print or punch data set of a job to the same spool file or disk file. However, if a received data set has a different forms name or number of copies than the previously received data set of the job, MSRJE will begin a new spool file or disk file.

Specify N to have each print or punch data set of a job received by MSRJE written to a new spool file or disk file.

Some hosts send a peripheral data set information record (PDIR) before every data set. Other hosts send PDIRs only if the following data set has setup changes. Hosts which fully support PDIRs (send one for each data set) are:

- JES2

- JES3 if PDIR=ALL is specified on the device statement for the SNA work station definition.

If your host does not fully support PDIRs, specifying yes or no for this prompt may have no effect. The results may be unpredictable.

Once you press the Enter key, the last display, display 37.0, is presented.

Display 37.0 MSRJE Reader Attributes

```
┌──────────────────────────────────────────────────────────────────────┐
│  37.0                 MSRJE READER ATTRIBUTES              SNASUB1   W1 │
│                                                                        │
│        Remote system SNAHOST1       Remote location SNALOC1            │
│                                                                        │
│   1. Maximum number of MSRJE readers  . . . . . . . . . . .  1-32  01  │
│                                                                        │
│   2. Maximum number of host readers . . . . . . . . . . . .  1-15  01  │
│                                                                        │
│   3. Transparency?  . . . . . . . . . . . . . . . . . . . . . Y,N  N   │
│                                                                        │
│   4. Specify default value for TYPE . . . . . . . . . . . . P,D,S  P   │
│                                                                        │
│   5. Specify default value for CMD  . . . . . . . . . . . . . Y,N  Y   │
│                                                                        │
│   6. Specify default value for DEL  . . . . . . . . . . . . . Y,N  N   │
│                                                                        │
│                                                                        │
│                                             Cmd19-Cancel               │
│                                                                        │
└──────────────────────────────────────────────────────────────────────┘
```

Display 37.0 allows you to define the readers used by MSRJE and defined at the host system.

1. **Maximum number of MSRJE readers:** Specify the number, from 1 through 32, of readers that can be active at one time for this MSRJE configuration. The default is 1.

   By specifying a value that is greater than the value specified for the **Maximum number of host readers** prompt, you can start MSRJE readers and then allow them to wait for a host reader to become available.

   The number of readers that you specify here depends on your RJE environment. For example, if several users will be signing on to MSRJE and sending data files to the host subsystem, you would want to specify as many readers as you expect users to be signed on at one time. If all the host readers (prompt 2, **Maximum number of host readers**) are in use, MSRJE will hold additional reader requests and start a reader when a host reader becomes available. The user does not have to wait and then re-enter a request to start a reader.

2. **Maximum number of host readers:** Specify the maximum number of readers that can be sending data to the host system at one time. The value entered can be from 1 through 15; the default is 01. This value should not exceed the number of readers specified for the host during host system configuration. The maximum number of readers is specified at the host subsystems as follows:

- JES2, specified in the NUMRD subparameter of the RMTnnn parameter on the JES2 work station definition

- JES3, specified in the RD subparameter of the RJPWS statement for the JES3 work station definition

- RES, specified in the RDRS parameter of the TERMINAL macro for the RTAM stage 1 generation

- VSE/POWER, always 1

3. **Transparency?:** Specify whether text transparency can be used with this MSRJE configuration. N, the default, specifies that text transparency cannot be used. Y specifies that text transparency can be used.

Transparency is normally used if you will be sending and receiving data that contains data characters which could be handled as SNA Character String (SCS) control characters. Normally, this occurs in object modules or binary data streams.

4. **Specify default value for TYPE:** Specify the default value to be used for the TYPE parameter on the MSRJE procedure or in READFILE utility control statements entered when this configuration is active. Specifying a value here is useful if most MSRJE procedure statements or READFILE utility control statements you use will have the same TYPE parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

Valid entries are:

- P for a procedure member

- D for a disk file

- S for a source member

5. **Specify default value for CMD:** Specify the default value to be used for the CMD parameter on the MSRJE procedure or in READFILE utility control statements entered when this configuration is active. Y indicates that the file contains utility control statements; N indicates that the file does not contain utility control statements.

   Specifying a value here is useful if most MSRJE procedure statements or READFILE utility control statements you use will have the same CMD parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

6. **Specify default value for DEL:** Specify the default value to be used for the DEL parameter on the MSRJE procedure or in READFILE utility control statements entered when this configuration is active. Y specifies that deleted records in the file are to be transmitted to the host system. N specifies that deleted records in the file are not to be transmitted to the host system.

   Specifying a value here is useful if most MSRJE procedure statements or READFILE utility control statements you use will have the same DEL parameter value. Refer to "Starting an MSRJE Session" in Chapter 3 or "READFILE Utility Control Statement" in Chapter 4 for a complete description.

Once you have completed display 37.0, display 29.0 is again displayed, and you can then define another MSRJE configuration. To end the definition of MSRJE configurations, press command key 7. Display 1.0 is then presented, and you can either define another line or subsystem member, or end the CNFIGICF procedure by pressing command key 7.

Chapter 3. Running an MSRJE Session

Enabling a Location for MSRJE

Before you can run an MSRJE session, you must enable the desired MSRJE configuration. You defined the MSRJE configuration using the CNFIGICF procedure, as described in Chapter 2. A configuration consists of the subsystem member and the line member referenced in the subsystem member. To activate an MSRJE configuration, enter the ENABLE procedure command from any command-capable display station. MSRJE may also be started from the job queue or may be evoked by the EVOKE OCL statement from the command line or from a procedure. The ENABLE procedure uses the information in the specified subsystem member, and its associated line member, to load and initialize the proper communications support (BSC or SNA) and to allocate the needed areas in storage. Once the ENABLE procedure has been run for an MSRJE configuration, MSRJE sessions can be started that use that configuration.

The format of the ENABLE procedure is:

```
ENABLE    subsystem configuration name,⎡library name      ⎤,⎡line number⎤,
                                        ⎣current library   ⎦ ⎣           ⎦

          ⎡NOSHOW⎤,⎡location name⎤
          ⎣SHOW  ⎦ ⎣            ⎦
```

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name: Specify the name of the MSRJE subsystem member that is to be enabled. You assigned this name on display 1.0 during the MSRJE subsystem configuration process. This parameter is required.

For the examples in Chapter 2, the subsystem member name would be BSCSUB1 for the BSC MSRJE example, or SNASUB1 for the SNA MSRJE example.

library name: Specify the name of the library in which the configuration member specified for the **name** parameter is stored. If no entry is made, the current library is assumed.

For both the BSC and SNA MSRJE examples in Chapter 2, the library is RJELIB.

line number: Specify the communications line to be used by this configuration. Note that if the line definition within the line member does not match the physical characteristics of the line, a message is displayed giving you the option of canceling the enable request or using the line definition within the line member. This parameter is required.

SHOW/NOSHOW: Specify whether you want to view the values set for the configuration. **SHOW** specifies that you do want to see the values. **NOSHOW** specifies that you do not want to see the values.

location: Specify the name of the remote location that is to be enabled. This name must have been specified as a remote location name on display 30.0 during MSRJE subsystem configuration.

If you specify a remote location in the ENABLE procedure command, only that location is enabled. If no location is specified, all locations for which **Activate at ENABLE** is specified (defined on display 30.0 during subsystem member configuration) are enabled.

If N was specified for the prompt **Activate location at ENABLE** on display 30.0 during subsystem member configuration, the ENABLE procedure command used for the BSC example shown in Chapter 2, would be:

```
ENABLE  BSCSUB1,RJELIB,1,,BSCLOC1
```

If Y was specified for the prompt **Activate location at ENABLE** on display 30.0 during subsystem member configuration, the ENABLE procedure command used for the SNA example in Chapter 2 would be:

```
ENABLE  SNASUB1,RJELIB,2
```

Starting an MSRJE Session

You can start (sign on to) an MSRJE session from any command-capable display station by entering the MSRJE procedure command. You can sign on to MSRJE and specify that a library member or disk file be automatically read once the data link is established; you can sign on as the MSRJE console, or you can sign on to MSRJE as a reader. In addition, you can sign on to MSRJE and immediately release the display station, which allows MSRJE to receive output from the host system.

MSRJE can also be run without a display station or an RJE operator. MSRJE may be started from the JOBQ or from an SSP-ICF session or evoked by using the EVOKE OCL statement from the command line or from a procedure.

The format of the procedure command for signing on and specifying a library member to be automatically read is:

```
MSRJE   location name,[member name],[library name  ],[PROC  ],
                                    [current library] [(P)   ]
                                                      [SOURCE]
                                                      [(S)   ]


        [COMMAND],[DELETE],[NOREL  ]
        [DATA   ] [NODEL ] [RELEASE]
                           [CONSOLE]
```

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The format of the procedure command for signing on and specifying a disk file to be automatically read is:

```
MSRJE   location name,[file name],[mmddyy],[DISK],
                                  [ddmmyy] [(D) ]
                                  [yymmdd]


        [COMMAND],[DELETE],[NOREL  ]
        [DATA   ] [NODEL ] [RELEASE]
                           [CONSOLE]
```

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If you want to sign on to MSRJE as the MSRJE console and not specify a file or member to be read, simply enter:

```
MSRJE location,,,,,,CONSOLE
```

If you want to sign a display station on to MSRJE and do not want it to be the console, enter:

```
MSRJE location
```

The first parameter lets you specify the host subsystem (remote location) with which you want to communicate.

location: Specify the name of the remote location with which you want to communicate using this MSRJE session. You must have assigned this name during MSRJE configuration on display 30.0, and the specified remote location must have been previously enabled. If the named remote location has not been both configured and enabled, a message is displayed, and the session will not be started.

The next five parameters allow you to specify a disk file or library member that is to be automatically read when the MSRJE session is started. The file or member can contain a host job stream and/or MSRJE utility control statements.

read-file-name: Specify the name of the disk file or library member that is to be read by an MSRJE reader once the session is started. If no value is specified, MSRJE assumes that input, if any, will come from the keyboard.

library-name: Specify the name of the library that is to be searched for the member specified by the **read-file-name** parameter. If a library name is entered, only that library is searched for the member specified in the **read-file-name** parameter. If no **library-name** is entered and a library member was specified for the **read-file-name** parameter, the current library is searched for the member and, if the member is not found, the system library is searched.

If the member cannot be found, a message is presented and you must enter the MSRJE procedure command again using the correct **read-file-name** and correct **library-name** values.

This parameter applies only if parameter 4 is **PROC, P, SOURCE, or S,** or if parameter 4 is not specified and prompt 4 on display 37.0 (**Specify default value for TYPE**) was specified as **P** or **S.**

date: Specify the creation date of the disk file specified for the **read-file-name** parameter that is to be read by MSRJE. If no date is specified, the named file with the latest creation date is read. The format of the date entry must be the same as the format of the system date.

This parameter applies only if parameter 4 is **DISK** or **D,** or if parameter 4 is not specified and prompt 4 on display 37.0 (**Specify default value for TYPE**) was specified as **D.**

PROC or P: Specify that the **read-file-name** parameter is a procedure member. If no entry is made for this parameter, the default value specified for prompt 4, **Specify default value for TYPE,** on display 37.0 during configuration of the subsystem member is used.

SOURCE or S: Specify that the **read-file-name** parameter is a source member. If no entry is made for this parameter, the default value specified for prompt 4, **Specify default value for TYPE,** on display 37.0 during configuration of the subsystem member is used.

DISK or D: Specify that the **read-file-name** parameter is a disk file. If no entry is made for this parameter, the default value specified for prompt 4, **Specify default value for TYPE,** on display 37.0 during configuration of the subsystem member is used.

COMMAND: Specify that the **read-file-name** disk file or member contains MSRJE utility control statements that are to be processed by MSRJE.

If COMMAND is specified and transparency was selected during MSRJE configuration (prompt 3, **Transparency?** on display 37.0 during subsystem member configuration) for the **location,** unpredictable results may occur. If you are going to use transparency with a file or member specified as COMMAND, you should be certain that there are no data streams within the file or member that match the binary representation of the characters .. (period period blank). If that sequence appears at the beginning of a record in a file or member specified as COMMAND, MSRJE attempts to process that record as a utility control statement.

If no entry is made for this parameter, the default value specified for prompt 5, **Specify default value for CMD,** on display 37.0 during configuration of the subsystem member is used.

If COMMAND is specified, or if it is not specified and prompt 5 on display 37.0 is specified as Y (Y indicates command; N indicates data), all records within the file or member must be 80 characters long.

DATA: Specify that the file or member specified by the **read-file-name** parameter contains only data and JCL to be sent to the host system. If any MSRJE utility control statements are in a file or member specified as DATA, they are sent to the host system without being processed by MSRJE.

If no entry is made for this parameter, the default value specified for prompt 5, **Specify default value for CMD,** on display 37.0 during configuration of the subsystem member is used.

DELETE: Specify that records marked as being deleted in direct or sequential files will be sent to the host system.

This parameter applies only if the file is delete-capable and if parameter 4 is **DISK** or **D**, or if parameter 4 is not specified and prompt 4 on display 37.0 **(Specify default value for TYPE)** was specified as **D**.

If no entry is made for this parameter, the default value specified for prompt 6, **Specify default value for DEL** on display 37.0 during configuration of the subsystem member is used (Y indicates delete-capable, N indicates not delete-capable).

NODEL: Specify that records marked as deleted in direct and sequential files are not to be sent to the host system.

This parameter applies only if the file is delete-capable and if parameter 4 is **DISK** or **D**, or if parameter 4 is not specified and prompt 4 on display 37.0 **(Specify default value for TYPE)** was specified as **D**.

If no entry is made for this parameter, the default value specified for prompt 6, **Specify default value for DEL** on display 37.0 during configuration of the subsystem member is used (Y indicates delete-capable, N indicates not delete-capable).

The following parameter allows you to designate the display station as the MSRJE console, or to release the display station from MSRJE once the session is started.

If MSRJE is being run from the JOBQ or is being evoked by using an EVOKE OCL statement, the following parameter is ignored, and the display station will not be used by MSRJE.

RELEASE: Specify that the display station entering the MSRJE procedure is to be released (returned to System/36 as command-capable) after MSRJE has started.

Specifying

```
MSRJE location,,,,,,RELEASE
```

provides you with a means of starting MSRJE without a reader or the MSRJE console so that print or punch data can be received from the host system.

NOREL: Specify that the display station entering the MSRJE procedure is to remain attached to MSRJE. This is the default value.

CONSOLE: Specify that the display station entering the MSRJE procedure will be the MSRJE console. If no other display station is signed on to MSRJE as the console, this display station becomes the console. If another display station is currently signed on as the console, then a message is displayed, and the program ends.

If you are using the MSRJE procedure within another procedure, you should consider how this last parameter affects when the MSRJE procedure ends. The MSRJE procedure ends:

- If you specify RELEASE, when MSRJE starts

- If you specify NOREL, when the reader terminates

- If you specify CONSOLE, when the session with the host ends or when you release the console

Once you have entered the MSRJE procedure command, the following display is presented if you signed on as the MSRJE console (by specifying the CONSOLE parameter in the MSRJE procedure command).

```
MSRJE Console
------------------------------------------------------------------------------




                                                                                



                                                                                



------------------------------------------------------------------------------
Startup in progress
```
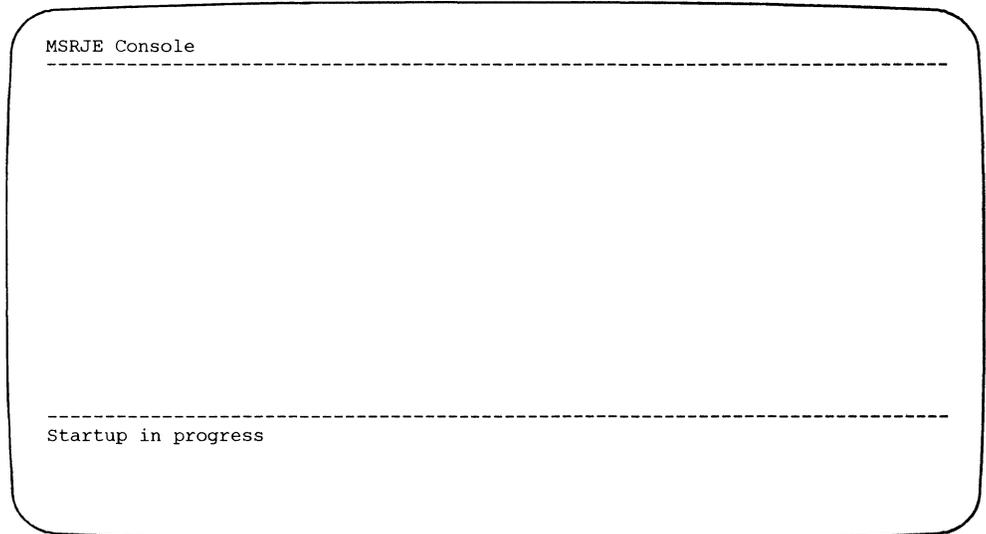
Once the startup has been completed, the MSRJE Console Input display is presented. If you signed on to MSRJE as the MSRJE console and specified a **read-file-name** value, then the Readfile in Progress display is presented once the startup has been completed. If MSRJE cannot be started or if there is an error in the MSRJE procedure command, a message is presented.

If you signed on as a reader (that is, you did not specify CONSOLE in the MSRJE procedure command), the following display is presented:

```
 MSRJE Reader
 -------------------------------------------------------------------------------




 


 
 


 -------------------------------------------------------------------------------
 Startup in progress

```
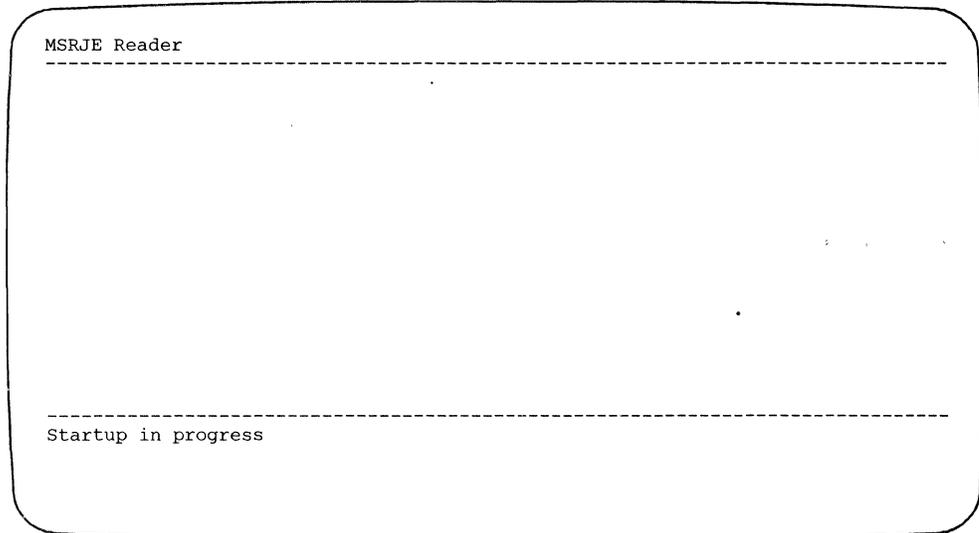
If the startup is successful, the Reader Input display is presented if you signed on to MSRJE without specifying a **read-file-name** and without specifying **CONSOLE**. If you specified a **read-file-name** on the MSRJE procedure command, the Readfile in Progress display is presented. If the **RELEASE** parameter was specified on the MSRJE procedure command, the display station becomes command-capable. If an error occurs or if the session cannot be started, a message is displayed.

If you press command key 19 while the Startup in Progress display is present, the display station is released, and the System/36 command display is presented. If the connection with the host system has not been completed when you press command key 19, the connection will not be made. If the connection has been established and a **read-file-name** parameter was specified on the MSRJE procedure command, that file or member is not read by MSRJE, and the display station is released. Command key 19 always terminates MSRJE. You can also press the Help key while the Startup in Progress display is present.

Input to an MSRJE Session

Input to MSRJE is of two types: console input and reader input.

Console input allows you to act as a host system operator; that is, you can enter host system commands to display and control the jobs submitted through MSRJE. You can also enter MSRJE utility control statements, which are processed by MSRJE. See "Console Input" later in this chapter for more information.

Reader input is the means by which you can send jobs to the host system. MSRJE sends job statements, either from a display station keyboard as you enter records or from a disk file or member that you have specified. MSRJE utility control statements can also be entered as reader input. See "Reader Input" later in this chapter for more information.

Console Input

You can enter console input only from the display station you signed on as the MSRJE console. You do that by specifying the **CONSOLE** parameter in the MSRJE procedure. If no other station is signed on as the console, your display station becomes the MSRJE console.

Console input is allowed only when the MSRJE Console Input display is present. The Console Input display appears as follows:

```
MSRJE Console
-----------------------------------------------------------------------------




                                    .






-----------------------------------------------------------------------------
MSRJE Console Input
```
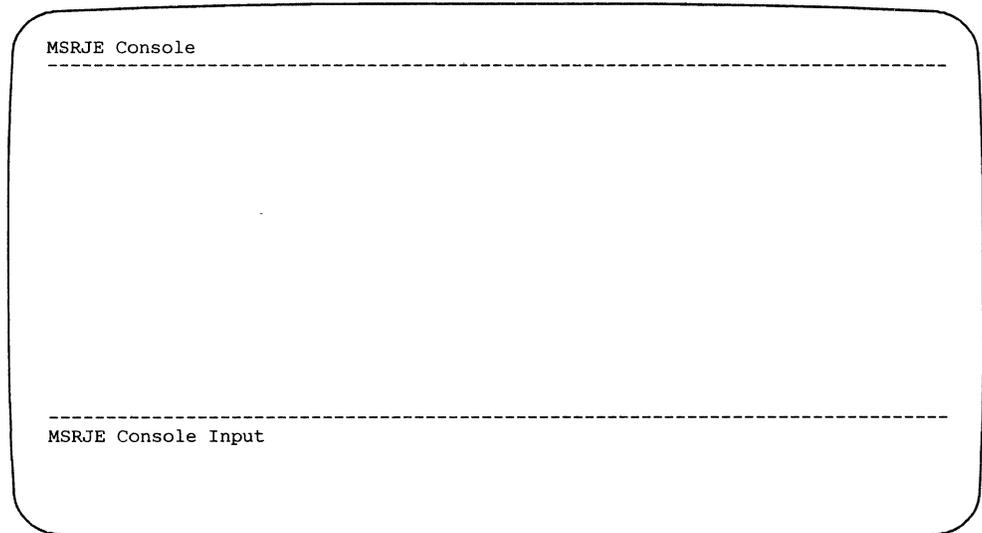
The space between the two dashed lines on the Console Input display is used to display messages received from the host system and messages generated by MSRJE. You cannot enter data into that area. All console input is logged to the history file. Records consisting of all blanks are ignored when the Console Input display is present. To indicate the end of a record, press the Enter key after you have typed the record.

Console input is entered on lines 22 and 23 of the display, and each record entered can be up to 120 characters (a record ends when you press the Enter key). Console input can be MSRJE utility control statements or host system commands. The MSRJE utility control statements that can be entered are:

- READFILE

- LIBRARY

- SETFORM

- CANCEL

- END

See Chapter 4 for a description of the utility control statements.

Entering a READFILE Utility Control Statement as Console Input

If a READFILE utility control statement is entered as console input, the keyboard is locked (the Input Inhibited light is on) and you cannot enter data. If the READFILE statement is correct and a reader can be acquired, the keyboard is unlocked. You can then enter console input, change to reader mode, or release the console. When the reader begins sending data, the message 'RDxx Started' is displayed in the message area. If MSRJE is waiting for a host reader to become available, no message is displayed until the reader actually sends data. If the reader needed could not be acquired or if the READFILE statement is in error, the appropriate message is displayed, and the keyboard unlocked.

Once a reader is started from the console by the READFILE utility control statement, it is no longer associated with the console. When the reader completes processing, a message is displayed at the console indicating that the reader has ended.

Command Keys from the MSRJE Console

When the Console Input display is present, the following command keys are available:

- Command key 7 causes the System/36 command display to be presented

- Command key 19 causes the System/36 command display to be presented

- Command key 1 requests that a reader be started for the console (the Reader Input display is presented)

The Help, Print, ATTN, and Dup keys can also be used while the Console Input display is present.

Using the Dup Key

You can use the Dup key to copy the last line of data you enter.

You need only press the Dup key once to make a line (80 characters) of copied characters appear, but you must press it a second time to make an additional 40 copied characters appear on the second input line. When you have the desired number of characters, press the Enter key to restore the data you last entered, whether it was 80 or 120 characters. Make any necessary changes. Then press the Enter key to process the data. Any data you enter is saved, unless you enter all blanks.

If you press the Dup key followed by the Help key, the Help display appears. When you exit Help, the copied characters appear once again. If you press the Dup key followed by command key 1, the copied characters remain on the display.

MSRJE can store up to 120 characters each time you press the Enter key if you enter the data as console input. MSRJE can store up to 80 characters if you enter the data as reader input.

Note: *You can enter more than 80 characters as console input, press command key 1 to get the Reader Input display, and then enter reader input. However, when you try to recall your last line of console input from the Console Input display, the 80 characters of reader input appears along with 40 blank characters. You get the last data you entered, whether it was reader or console input.*

Reader Input

An MSRJE reader starts when you enter the MSRJE procedure command from a display station without specifying **CONSOLE** or when a **read-file-name** is specified on the procedure command. You can also activate a reader from the MSRJE console by pressing command key 1.

If no MSRJE reader is available (the number specified by the **Maximum number of MSRJE readers** prompt on display 37.0 during subsystem configuration has been exceeded), a message is displayed telling you that a reader cannot be started. If the request for a reader was made from a display station other than the MSRJE console, the program ends, and the display station is released. If the request for a reader was made from the MSRJE console, you can return to the MSRJE Console Input display by selecting option 0 in response to the message.

If no active session is available (the **Maximum number of sessions** value specified on display 34.0 during configuration of a subsystem for SNA MSRJE has been exceeded) or if no host reader is available (the value specified for the **Maximum number of host readers** prompt on display 37.0 during subsystem configuration has been exceeded), a message is displayed telling you that all sessions or host readers are in use.

If MSRJE determines that there are no host readers available (a negative response from the SNA host system for all configured host readers; no response within 60-seconds from a BSC host system for all configured host readers), a message is sent to the console (if active) to inform you that a START command may need to be sent to the host system. You should select option 0 in response to the message, and then send the command(s) to start the host readers.

If you select option 1 in response to the displayed message that tells you all sessions or host readers are in use, MSRJE will keep your request for a reader active and wait for one to become available. The following display is presented:
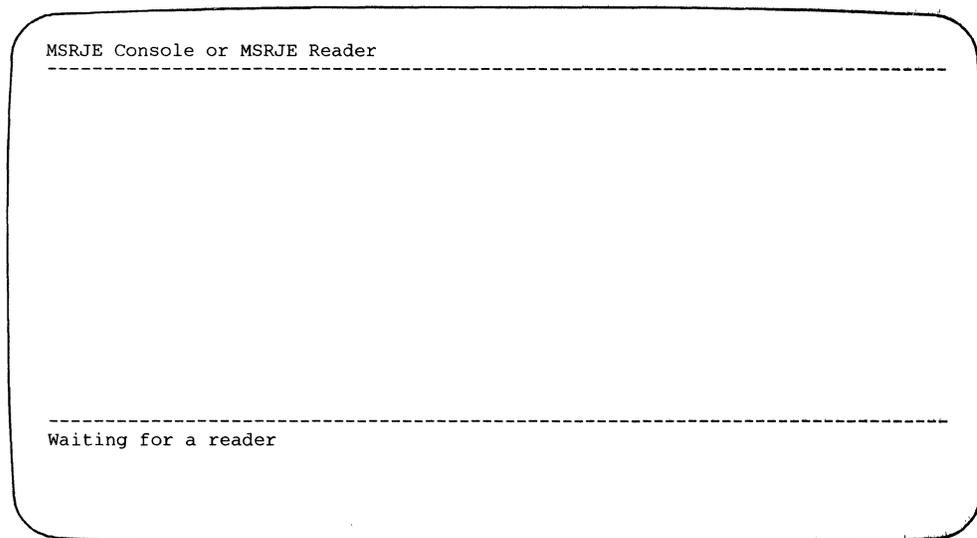
```
MSRJE Console or MSRJE Reader
---------------------------------------------------------------------------------




                              




---------------------------------------------------------------------------------
Waiting for a reader

```

If you choose any other option in response to the displayed message, MSRJE takes one of the following actions:

- Option 0 (only if you requested a reader from the MSRJE console): Return to the Console Input display. The request for a reader is terminated.

- Option 2: Return to the System/36 command display. The request for a reader is terminated.

While the Waiting for a reader display is present, the following command keys are valid:

- Command key 1 return to console input, if your display station is the MSRJE console.

- Command key 7 return to the System/36 command display. If you specified a **read-file-name** on either the MSRJE procedure command or on a READFILE utility control statement, MSRJE sends that file when a reader becomes available.

- Command key 19 return to the System/36 command display. The request for a reader is terminated, and no data is sent.

The Help, ATTN, and Print keys can also be used while this display is present.

A reader terminates at a display station when you enter an EOF utility control statement, or when an EOF utility control statement is processed in a file or member that you specified as containing MSRJE utility control statements (using the **COMMAND** parameter on the MSRJE procedure command or by specifying **CMD-Y** on a READFILE utility control statement).

If you terminate the reader at a display station, the MSRJE session is terminated, and you can enter commands at the display station. If you terminate a reader at the MSRJE console, the Console Input display appears.

The MSRJE Reader Input display is presented if an MSRJE reader, an LU session (SNA MSRJE only), and a host reader are available when you press command key 1 at the MSRJE console or when you enter an MSRJE procedure command without specifying a **read-file-name** , **CONSOLE**, or **RELEASE**. The Reader Input display appears as follows:

```
MSRJE Console or MSRJE Reader
--------------------------------------------------------------------------------




    

         


         

    --------------------------------------------------------------------------------
MSRJE Reader Input

```

The space between the dashed lines on the display is used as a display area for reader messages. Input to a reader can only be entered on line 22 of the display.

You can enter data, JCL statements, and certain utility control statements (READFILE, SETFORM, LIBRARY, EOF, and END) to MSRJE from the display station. The records you enter can be up to 80 characters in length. End each record by pressing the Enter key. Utility control statements entered are logged to the history file.

If your display station is the MSRJE console, pressing command key 1 returns you to the MSRJE Console Input display with the message Reader Active displayed.

Pressing command key 7 while the Reader Input display is present returns the display station to the System/36 command display.

Pressing command key 19 while the Reader Input display is present returns the display station to the System/36 command display.

The Help, Print, ATTN, and Dup keys can also be used.

Using the Dup Key

You can use the Dup key to copy the last line of data you enter.

Simply press the Dup key, then the Enter key to make your last line of data appear in the input area. Make any necessary changes. Then press the Enter key a second time to process the data. Any data you enter is saved, unless you enter all blanks.

If you press the Dup key followed by the Help key, the Help display appears. When you exit Help, the copied characters appear once again. If you press the Dup key followed by command key 1, the copied characters remain on the display.

Note: *If you enter data as console input, you can press command key 1 to get the Reader Input display. If you press the Dup key and then the Enter key, the first 80 characters of your console input appears. You always get the last input you entered, whether it was reader or console input.*

Disk Input to a Reader

You request disk input to an MSRJE reader by specifying the **read-file-name** parameter on the MSRJE procedure command when you start MSRJE or by using the READFILE utility control statement. When the disk is to be used for input, you can specify:

- The name of the file or library member to be read

- Whether the file or library member contains MSRJE utility control statements

- Whether the input is from a disk file, procedure member, or source member

- The creation date of a disk file

- The name of the library to be searched for a procedure or source member

- Whether deleted records are to be transmitted to the host system from a direct or sequential disk file

Note: *All disk files are read sequentially. Therefore, the same data is sent to the host system whether you specify the name of a parent file or of an alternative index file as the **read-file-name**.*

For a more complete description of disk specifications, see "READFILE Utility Control Statement" in Chapter 4, or see "Starting an MSRJE Session" earlier in this chapter for a discussion of the MSRJE procedure command.

If you enter a READFILE utility control statement from the display station or specify the **read-file-name** parameter on the MSRJE procedure control statement, the reader begins processing the file or member specified. You cannot enter data until the reader completes processing the file or member. While the reader is processing the file or member, the following display is presented:

```
MSRJE Reader or MSRJE Console
--------------------------------------------------------------------------------




















--------------------------------------------------------------------------------
MSRJE READFILE in progress
```
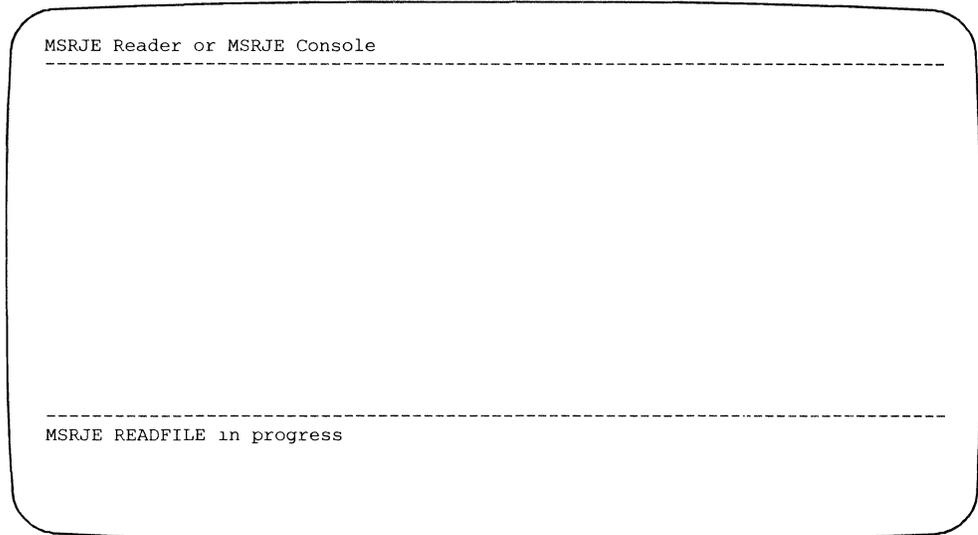
The area between the dashed lines is to display reader or console messages or to display messages generated by MSRJE or the host system. The only keys permitted are:

• The ATTN key (to suspend the reader).

• If your display station is the MSRJE console, pressing command key 1 returns you to the Console Input display with the message Reader Active displayed.

• Command key 7, which causes the System/36 command display to be presented (the reader continues reading the file or member).

• Command key 19, which terminates the reader and causes the System/36 command display to be presented.

• Help and Print keys.

Once processing of the file has completed, a message is displayed at the display station indicating that processing of the file has completed and that the reader is available for input from the display station.

Files or library members used as input to MSRJE can contain only data to be sent to the host system, or they can contain data for the host system and utility control statements. (The utility control statements are processed by MSRJE and not sent to the host system.) The data sent to the host system can be JCL and data. The utility control statements that can be in a file are READFILE, SETFORM, LIBRARY, END, and EOF. If the file you specify as input to MSRJE contains utility control statements, you must define it as such to MSRJE by specifying one of the following:

- **COMMAND** on the MSRJE procedure command (only if you specify a **read-file-name** on the command).

- **CMD-Y** on the READFILE utility control statement.

- **Y** for the **Specify default for CMD** prompt on display 37.0 during subsystem configuration and then not specifying either the **CMD** parameter on a READFILE utility control statement or the MSRJE COMMAND parameter on the MSRJE procedure command.

All records sent to the host system by an MSRJE reader are sent as 80-character records, regardless of the actual length of the records within the file or member. For example, a file containing four 60-character records is sent to the host system as three 80-character records. A file containing four 120-character records is sent to the host system as six 80-character records. If necessary, the application program that is to process the data at the host system must return the received records to their original length. Note, however, that files or members specified as containing utility control statements must have a record length of 80 characters.

Output from MSRJE

Output from an MSRJE session can consist of one, all, or any combination of the following:

- Print data from the host system

- Punch data from the host system

- Operator messages from the host system

- Operator messages generated by MSRJE

Note: You cannot use OCL statements to produce MSRJE output.

Print Data from the Host System

When print data is received from the host system, MSRJE can do any of the following:

- Write the print data to a System/36 printer.

- Print up to 198 positions when you are using a forms control table with a CPI=15 or a print wheel ID, which has a CPI=15.

- Write the print data to the System/36 spool file.

- Create a new sequential file and write the print data to the file as 256-character unprocessed records.

- Add the print data to an existing sequential file of 256-character unprocessed records (this file can contain both print and punch data).

- Create and write print data to decompressed disk files with or without carriage information.

The destination of print output received from the host system is controlled by a forms control table. When you configured MSRJE for the location specified in the MSRJE procedure command, you may have specified the name of a forms control table that is to control print output received from the host system. The forms control table name is specified on display 36.0 during MSRJE subsystem configuration. You can create forms control tables by using the RJTABLE procedure command, as described in Chapter 5. If you do not create any forms control tables, IBM-supplied default values for print output will be used. These default values are supplied with MSRJE and are shown in Appendix D.

While MSRJE is being initialized (after the MSRJE procedure has been entered), a check is made to determine whether the forms control table specified (on display 36.0 during subsystem member configuration) is usable. If the table cannot be found or is not usable, a message is displayed giving you the option of terminating MSRJE or of continuing and using the IBM-supplied default values for print output.

When print output is received from the host system, it is usually preceded by a host forms name. When MSRJE receives that host forms name, it searches the specified forms control table, if any, for an entry with the same name. If a matching entry is found, the information in that table entry is used to control forms and print operations, or to control creating and writing of disk files. If no matching entry is found, the default print output entry in the specified table is used. If no host forms name is received with the data, MSRJE uses the name from the previous output. If no forms control table was specified on display 36.0 during configuration, the IBM-supplied print output default values are used. The forms control table and the forms control table utility are described in Chapter 5. The IBM-supplied default values are shown in Appendix D.

If print output is written to the System/36 spool file, the spool file PRINTER name will be one of the following:

- The host job name, if one is sent by the host subsystem and the name is nonblank

- The host forms name, if one is sent by the host subsystem and the name is nonblank

- The local forms name, if nonblank

- MSRJE

Print output written to disk is written to a compressed file (a file with 256-character unprocessed records—unprocessed records are written exactly as they are received or sent to a decompressed disk file with or without carriage information). The RJFILE procedure command can be used to print these files.

Print output written to a disk file is labeled by MSRJE using the print file sequence number (as defined on display 36.0 during MSRJE configuration) and the file label from the matching forms control table entry. If there is no matching entry in the forms control table, the print default entry is used. If there is no forms control table, the IBM-supplied print default values are used. The format of the label created by MSRJE is:

    xxxxxxnn

where

    xxxxxx   is the file label from the control table entry or MSRJE

    nn   is the printer file sequence number if ADD-NO is specified in the control table.

         or

    nn   is 00 when ADD-YES is specified in the control table entry.

Note: *ADD-YES specifies that the received print data is to be written to an existing file (the new data is written after any data already in the file). If **ADD-YES** is specified and a file named xxxxxx00 does not exist, MSRJE creates that file and then writes the received print data to it. ADD-NO specifies that the data is to be written to a new file that is created when needed by MSRJE.*

Whenever a file is created using the print file sequence number, the number is increased by 1 for all files except the first file created. For example, if you had specified 10 for the print file sequence number on display 36.0 during configuration, the first file would be xxxxxx10, and the next file would be xxxxxx11.

The maximum value for the sequence number is 99. If the last file created were xxxxxx99, the next file created would be xxxxxx01.

To take full advantage of the forms control table functions, you should note the following:

- For SNA MSRJE, the host system should send Peripheral Data Information Records (PDIR) and forms names should be specified in the JCL. The sending of PDIRs by the host system is specified at the host during system generation.

- For BSC MSRJE, the host system should send forms mount messages, and forms name should be specified in the JCL.

If forms mount messages or PDIRs are not sent by the host system, MSRJE uses the last forms name received by the printer or the forms name that was saved in the forms set member for the printer.

Punch Data from the Host System

When punch data is received from the host system, MSRJE can do any of the following:

- Create a new disk file and write the punch data to it.

- Add the punch data to an existing file.

- Create a new sequential file and write the punch data to disk as 256-character unprocessed records.

- Add the punch data to an existing sequential file of 256-character unprocessed records (this file can contain both print and punch data).

The destination of punch output received from the host subsystem is controlled by a forms control table. When you configured MSRJE for the location specified in the MSRJE procedure command, you may have specified the name of a forms control table that is to control output received from the host system. The forms control table name is specified on display 36.0 during MSRJE subsystem configuration. You can create forms control tables by using the RJTABLE procedure command, as described in Chapter 5. If you do not specify a forms control name during subsystem member configuration (on display 36.0), the IBM-supplied default values for punch output are used. These default values are shown in Appendix D.

When punch output is received from the host system, it is usually preceded by a host forms name. If MSRJE receives that name, it searches the specified forms control table, if any, for an entry with the same name. If a matching entry is found, the information in that table entry is used to control creating and writing of disk files. If no matching entry is found, the default punch output entry in the specified table is used. If no host forms name is received with the data, MSRJE uses the name from the previous output. If no forms control table was specified on display 36.0 during configuration, MSRJE uses the IBM-supplied punch output default values. The forms control table and the forms control table utility are described in Chapter 5. The IBM-supplied default values are shown in Appendix D.

Punch output directed to a disk file or to a compressed disk file is labeled by MSRJE using the punch file sequence number (as defined on display 36.0 during MSRJE configuration) and the file label from the matching forms control table entry. If there is no matching entry in the table, the punch default entry is used. If there is no forms control table, the IBM-supplied defaults for punch data, as shown in Appendix D, are used. The format of the label created by MSRJE is:

xxxxxxnn

where

xxxxxx   is the file label from the control table entry or MSRJE

nn   is the punch file sequence number if ADD-NO is specified in the control table.

             or

nn   is 00 when ADD-YES is specified in the control table entry.

Note: *ADD-YES specifies that received punch data is to be written to an existing file (the new data is written after any data already in the file). If **ADD-YES** is specified and file xxxxxx00 does not exist, MSRJE creates that file and then writes the punch data to it. ADD-NO specifies that the data is to be written to a new file that is created when needed by MSRJE.*

Whenever a file is created using the punch file sequence number, the number is increased by 1 for all files except the first file created. For example, if you had specified 10 for the punch file sequence number on display 36.0 during configuration, the first file would be xxxxxx10, and the next file would be xxxxxx11.

The maximum value for the sequence number is 99. If the last file created were xxxxxx99, the next file would be xxxxxx01.

To take full advantage of the forms control table functions, you should be aware of the following:

- For SNA MSRJE, the host system should send Peripheral Data Information Records (PDIR), and forms names should be specified in the host system JCL. The sending of PDIRs by the host is specified at the host system during system generation.

- For BSC MSRJE, the host system should send forms mount messages, and forms name should be specified in the host system JCL.

If forms mount messages or PDIRs are not sent by the host system, MSRJE uses the last forms name received by the punch, or the forms name that was saved in the forms set member for the punch.

Operator Messages from the Host System

Operator messages from the host system received by MSRJE are written to the history file. If the MSRJE console is active when a message is received from the host system, the message is also displayed at the console.

Operator Messages from MSRJE

Messages to the operator from MSRJE are handled as follows:

- All messages are logged to the history file.

- Reader messages are displayed at the display station that started the reader, unless the display station has been released, MSRJE has been started from the JOBQ, or MSRJE has been evoked.

- Readers started from the MSRJE console while in console input mode display only those messages that indicate the reader has started or ended.

- Messages from MSRJE relating to console input are displayed at the MSRJE console.

- Printer and punch messages are displayed at the MSRJE console if the console is active.

MSRJE supports the System/36 // NOHALT capability. If a halt message is directed to a display station, it is automatically responded to, but not displayed, if the system NOHALT criteria are met. The *System Reference* manual describes the NOHALT capability.

If a halt message is directed to a display station that has been released from MSRJE, the message is logged to the history file, and the default response is always taken.

You can modify the default responses for MSRJE messages in the same manner as you can modify the default responses for other system messages. MSRJE messages are stored in the system message member (##MSG1). The *System Reference* manual contains more information.

Ending an MSRJE Session

You can end (sign off) MSRJE at your display station and yet leave the MSRJE connection with the host system intact. To end MSRJE for your display station, use one of the following methods:

*   Press command key 7 to release the display station from MSRJE. If the Readfile in Progress display is present, MSRJE continues to process that file. If the Waiting for a reader display is present when you press command key 7, the display station is released, but MSRJE continues to wait for a reader to become available if you have entered a READFILE utility control statement or specified a read-file-name on the MSRJE procedure command.

*   Press command key 19 to release the display station from MSRJE and to immediately end the processing of any reader input for your display station.

*   Specify option 2 for any reader or console message; this option has the same effect as pressing command key 19. Note that specifying option 2 for a print or punch message has no effect on the display station.

*   A CANCEL utility control statement entered from the MSRJE console that specifies the reader active at your display station has the same effect as pressing command key 19 unless your display station is signed on as the MSRJE console.

*   A system operator cancel command that references the job active for your display station has the same effect as pressing command key 19.

*   Enter an EOF utility control statement when the Reader Input display is present.

None of the preceding methods has any effect on the MSRJE connection with the host system.

If you are running MSRJE using BSC and if MSRJE determines that the link should be dropped, a message appears at the MSRJE console or at the system console. This message occurs when the disconnect sequence is not received from the host within one minute after MSRJE sends a logoff or when MSRJE waits one minute to get a reader to send logoff and no logoff is available. Message RJE-4626 alerts you to the error condition.

Ending the MSRJE Connection with the Host System

The connection with the host system is normally terminated when an END utility control statement is processed. After an END statement has been entered, no new readers can be started. Once all readers, printers, and punches have completed processing, if a delay value has been specified, MSRJE waits the specified length of time. If the time elapses, normal shutdown begins. If a printer or punch is started before the time elapses, MSRJE remains active. Once the printer or punch has completed processing, MSRJE will again begin waiting for the specified length of time. If the DELAY value specified on the END utility control statement is 0 or if no delay value has been specified, MSRJE begins shutdown as soon as all readers, printers, and punches have completed. The connection can also be ended by any of the following:

*   Specify a termination delay value (on display 34.0 during subsystem member configuration). This value is similar to the delay value on an END utility control statement, except that it does not take effect until all readers, printers, and punches are inactive, and the MSRJE console has been released.

*   Enter a DISABLE procedure command that specifies the active MSRJE subsystem. DISABLE can be entered from a command line or from the JOBQ, or evoked by using an EVOKE OCL statement.

*   Stop or restart the communications line at the host system (BSC only).

*   Vary inactive the line, physical unit, or logical units at the host system (SNA only).

Disabling an MSRJE Remote Location

The subsystem used by MSRJE is terminated when you enter a DISABLE procedure that specifies the subsystem configuration member name. The format of the DISABLE procedure is:

```
DISABLE   subsystem configuration name, [location name]
```

subsystem–configuration–name: Specify the name of the MSRJE subsystem that is to be terminated. This is the same value specified for the ENABLE procedure when the subsystem was activated.

In the SNA example in Chapter 2, the name would be SNASUB1; for the BSC example, it would be BSCSUB1.

location name: Specify the name of the remote location that is to be disabled. The name specified here should correspond to the **location** specified on the MSRJE procedure command. If no **remote location name** is specified, all enabled locations in the specified **subsystem–configuration** are disabled.

To disable the remote location for the BSC example in Chapter 2, the procedure command would be:

```
DISABLE   BSCSUB1,BSCLOC1
```

To disable all enabled remote locations in BSCSUB1, the format would be:

```
DISABLE   BSCSUB1
```

For the SNA example, the format of the procedure command is:

```
DISABLE   SNASUB1,JES2LOC
```

```
          or
```

```
DISABLE   SNASUB1
```

If MSRJE is logged on to the host system when the DISABLE procedure command is entered, a message is displayed indicating that there are active sessions. The message allows you to pend the DISABLE (option 0), retry the DISABLE (option 1), force an immediate DISABLE (option 2), or cancel the DISABLE procedure (option 3).

If the DISABLE pend option (option 0) is selected, any active MSRJE sessions continue processing until they are completed, but no new readers can be started. Any printers or punches needed to process data from the host system will be started, and the MSRJE console can be started. Once MSRJE has logged off from the host system, the DISABLE procedure is completed normally.

If the DISABLE retry option is selected (option 1), the DISABLE procedure is re-submitted.

If the DISABLE immediate option (option 2) is selected, all MSRJE sessions active for the remote location are abnormally ended and termination of the link with the host system is attempted.

If the DISABLE cancel option (option 3) is selected, the DISABLE procedure is not processed.

MSRJE Unattended Mode of Operation

MSRJE can run without an operator present. This is referred to as unattended operation. Transmitting data over a switched line after 5:00 p.m. is usually less expensive (based on line charges) because the discount rates are in effect. Using System/36 to collect data during the normal working hours and sending the data to the host system for processing after the end of the working day can be accomplished with System/36 MSRJE.

Unattended mode of operation for MSRJE is handled in two areas: message handling and automatic termination.

Message Handling for MSRJE Unattended Operation

MSRJE uses the System/36 //NOHALT support to provide automatic responses to MSRJE-generated messages at all times. The NOHALT level of each user who signs on to MSRJE is used as the NOHALT level for user messages. In addition, if MSRJE attempts to display a message at a display station that has been released, the default responses are assumed regardless of the NOHALT level.

Automatic Termination of MSRJE during Unattended Operation

The value specified for the **Termination delay in minutes** prompt on display 34.0 during the configuration process is used to set a time limit for termination of MSRJE. When all readers, printers, and punches have completed processing and the MSRJE console has been released, MSRJE waits the length of time specified by the **Termination delay in minutes** value. If the time period elapses, MSRJE begins normal termination. However, if a reader, printer, or punch is started or if the MSRJE console is started, the wait is canceled. If no delay value has been specified, MSRJE does not automatically terminate.

The END utility control statement overrides the delay value specified on display 34.0 during MSRJE configuration.

Getting the Status of MSRJE

While MSRJE is running, you can get the current status by entering STATUS
MSRJE or D M on the command line of a display station (see the example at the
end of this section), or by selecting option 5 from the Display Communications
Status (COMMSTAT) menu. The following illustrates the status display
presented:

```
 1                  2              3              4

    5          6          7    8          9          10   11

  /
 /  Complete                   MSRJE STATUS                        W1

   MSRJE Console:      Location:           Host:           Status:

   MSRJE Readers   Host Readers  WS-ID  Printers  Output     Punches  Output

   SYS-5934 MSRJE subsystem is not enabled



   Cmd7-End        Cmd8-Help       Cmd15-Update      Cmd16-Restart       Roll-Page
  ------------------------------------------------------------------------------------
                                   CNTLRJE
                           Define or run RJE
     1. Display a location status
     2. Define communications
     3. Start or stop communications lines
     4. Start an RJE session
     5. Process print or punch files
   Ready for option number or command


                                                       (c) 1984 IBM Corp.

```

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■1 **MSRJE Console:** Defines the display station that is currently signed on as the
MSRJE console.

■2 **Location:** Identifies the remote location with which MSRJE is communicating.

■3 **Host:** Specifies the type of host subsystem with which MSRJE is
communicating.

■4 **Status:** Indicates the current status of MSRJE for the location, as follows:

- Active. MSRJE is currently communicating with the location.

- Starting. An operator has signed on to MSRJE for the location, but
  MSRJE is not yet logged on to the host system.

- Ending. MSRJE is ending communications with the remote location
  because an operator has entered an END utility control statement,
  canceled MSRJE, or requested an immediate disable, or because of a link
  error.

- Inactive. The location is enabled, but no operator has signed on to
  MSRJE for the remote location.

5 **MSRJE Readers:** The number of configured MSRJE readers for this location. The number of readers corresponds to the **Maximum number of MSRJE readers** specified on display 37.0 during configuration of MSRJE for this remote location.

6 **Host Readers:** Specifies the host readers that are currently active and communicating with MSRJE readers.

7 **WS-ID:** Specifies the display station that is associated with the reader. A dash (--) indicates that the display station that started the reader has been released. If a work station or a dash is displayed but there is no corresponding *Host RDRS* entry, the MSRJE reader is waiting for a connection to a host reader.

8 **Printers:** Printers specified for this MSRJE configuration. The number of printers corresponds to the **Maximum number of printers** specified on display 36.0 for this remote location.

9 **Output:** The destination of print data received for the associated printer, as follows:

• ID. The ID of a System/36 printer.

• CDISK. A compressed file (a disk file with 256-character unprocessed records).

• **. For BSC MSRJE, specifies that processing for the printer is suspended. A CANCEL utility control statement may need to be entered to free the printer.

10 **Punches:** Punches configured for this MSRJE location. The number of punches corresponds to the **Maximum number of punches** specified on display 36.0 during configuration of this MSRJE location.

11 **Output:** The destination of punch data received for the associated punch, as follows:

• Disk. A disk file with a user-defined format.

• CDISK. A compressed file (a disk file with 256-character unprocessed records).

• **. For BSC MSRJE, specifies that processing for the punch is suspended. A CANCEL utility control statement may need to be entered to free the punch.

Pressing command key 8 causes Help text for the status display to be presented. Pressing command key 15 causes the status display to be redisplayed with any new information. Pressing command key 16 causes the function to restart with a display of the first MSRJE remote location. Pressing the Roll Up key causes the next display for the current location, or the first display of the next enabled MSRJE location, if any, to be displayed.

The status is a split display. The top part of the display (above the dashed line) is the status information. The bottom part of the display allows you to select a menu option (2) to start or stop a communications line, or to enter a command on the command line.

If you use the command line of your display, enter:

```
STATUS   MSRJE,location
or
D M,location
```

Chapter 4. Controlling an MSRJE Session

Utility control statements can be used to control an MSRJE session once it has been started. The utility control statements can be used to control the input, output, and termination phases of MSRJE operation. The utility control statements and the phases they affect are shown in the following table:

Phase	Statement
Input	READFILE LIBRARY EOF CANCEL
Output	CANCEL SETFORM INFOMSG
Termination	END

Each utility control statement can also be classified as to whether it serves as reader input or console input and as to the devices from which it may be entered.

Input Type	Entered From	Statement
Reader input	Display station or disk	READFILE LIBRARY EOF SETFORM INFOMSG END
Console input	Console keyboard	READFILE LIBRARY CANCEL SETFORM INFOMSG END

Note: *You can cancel MSRJE by using options 2 and 3 on the inquiry display.*

MSRJE Utility Control Statements

Each MSRJE utility control statement consists of a statement identifier and, for most utility control statements, parameters. The statement identifier is always the first word of the statement. The parameters supply the necessary information to the utility. Each parameter consists of a parameter keyword, which identifies the parameter, and the value to be supplied to MSRJE or, for the CANCEL utility control statement, just the value.

The general format of an MSRJE utility control statement is:

```
.. statement-identifier keyword-value,...keyword-value comment
(.. s)
```

Rules for Coding MSRJE Utility Control Statements

The rules for coding MSRJE utility control statements are:

statement-identifier: Two periods (..) followed by one blank must be placed before the **statement-identifier**. Blanks are not allowed within the **statement-identifier**. Certain statements can use a single letter abbreviation in place of the full **statement-identifier**. In the sections that follow, the abbreviation is indicated by the letter within parentheses beneath the full **statement-identifier**.

keyword-value: Parameters can be entered in any order. A comma is required to separate one parameter from another (do not place any blanks between parameters). A parameter is identified by a **keyword**, which is followed by a hyphen (-) and the **value** assigned to the keyword (the CANCEL utility control statement does not use this format).

comment: Comments can be included in utility control statements when parameters are entered. Leave one or more blanks after the last **keyword-value** and the comment.

If you want an entire statement to be a comment, begin the statement with two periods, a blank, and an asterisk (.. *).

READFILE Utility Control Statement

The READFILE statement tells MSRJE to begin reading data from a disk file, procedure member, or source member. A READFILE statement can be entered from either the reader input display or the console input display, or it can be read from a file or member on disk.

The format of the READFILE statement is:

```
.. READFILE NAME-name [,LIBR-name]  [,DATE-date]  [,TYPE-{P}]  [,CMD-{Y}]  [,DEL-{Y}]
(.. R)                                                    {S}        {N}         {N}
                                                          {D}
```
S7909017-0

NAME: Specifies the name of the disk file or the name of the source or procedure member that is to be read by the reader.

> *Note: MSRJE cannot read folders.*

LIBR: For source or procedure members only, specifies the name of the library in which the member can be found. If a library name is specified, only that library is searched for the member. If a member is specified for the **NAME** parameter and no entry is made for the **LIBR** parameter, MSRJE searches the current library for the member. If the member is not found in that library, the system library (#LIBRARY) is searched. If LIBR-0 is specified, only the system library (#LIBRARY) is searched.

If the member cannot be found, a message is displayed requesting that the **LIBR** or **NAME** value be corrected.

If **TYPE-D** is specified or if no type is specified and **D** is specified for the **Specify default value for TYPE** prompt on display 37.0 during subsystem member configuration, specifying a value for **LIBR** causes a message to be displayed.

DATE: Specifies the file creation date of the disk file to be read by MSRJE. If a date is not specified for a disk file, the named file having the latest creation date is read. The format of the date must be the same as the system date format.

If **TYPE-S** or **TYPE-P** is specified or if no type is specified and the **Specify default value for TYPE** prompt on display 37.0 was specified as **P** or **S** during subsystem member configuration, the **DATE** parameter is invalid, and its use causes a message to be displayed.

TYPE: Specifies the type of file or member specified by the **NAME** parameter. **TYPE-S** indicates a source member; **TYPE-P** indicates a procedure member; and **TYPE-D** indicates a disk file. If no entry is made for the **TYPE** parameter, the default specified on display 37.0 during MSRJE configuration is used.

CMD: Specifies whether MSRJE is to process any utility control statements that are in the file or member.

CMD-Y indicates that the file or member may contain MSRJE utility control statements and that MSRJE is to process any utility control statements found. All other records are transmitted to the host system as data. All records within the file or member must be 80 characters in length.

When CMD-Y is specified for a file or member, MSRJE attempts to process any record that begins with .. (period period blank) as a utility control statement. If the record is not a utility control statement, the results will be unpredictable.

CMD-N specifies that the file or member contains data only. If CMD-N is specified for a file or member containing utility control statements, the utility control statements are sent to the host system as data.

The default value for the **CMD** parameter is the specification made for the **Specify default value for CMD** prompt on display 37.0 during MSRJE configuration.

If **CMD-Y** is specified on a READFILE statement and **Y** was specified for the **Transparency?** prompt on display 37.0 during MSRJE configuration, unpredictable results may occur. If transparency is specified and the file is designated as **CMD-Y**, it is possible that the first three characters of a data record could be two periods followed by a blank (..). If this happens, MSRJE will attempt to process the record as a utility control statement. You should be certain that no files specified as containing utility control statements and using transparency contain records that start with period-period-blank unless those records are MSRJE utility control statements.

DEL: Specifies whether deleted records in a file are to be sent to the host system. This parameter applies only when **TYPE-D** is specified and the disk file is a delete-capable sequential or direct file.

DEL-Y specifies that all records within the file, including records marked as deleted, are to be sent to the host system.

DEL-N specifies that deleted records are not to be sent to the host system.

The default is the value specified for the **Specify default value for DEL** prompt on display 37.0 during MSRJE configuration.

READFILE statements can be nested; that is, a file or member can contain a READFILE statement that tells the reader to read another file or member. For example, file A contains a READFILE statement that references file B. When the statement is processed by MSRJE, reading of file A is suspended and the reader begins processing file B. Once the reader has completed processing file B, it returns to processing file A at the record immediately following the one that caused it to process file B. The following illustrates how nesting works with two files.
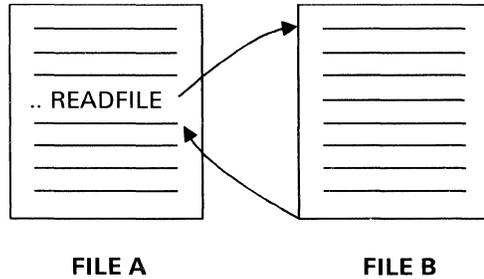
FILE A   **FILE B**

S7909018-0

To further illustrate nesting, assume you have three files: file A, file B, and file C. File A contains a READFILE statement that directs the reader to begin processing file B. File B contains a READFILE statement that directs the reader to begin processing file C.

When the READFILE statement in file A is processed, the reader begins reading file B. When the READFILE statement in file B is processed, the reader begins reading file C. Once file C has been read, the reader returns to the record immediately following the READFILE statement in file B. Once file B has been processed, the reader returns to the record immediately following the READFILE statement in file A. The following illustrates this type of nesting.

FILE A   **FILE B**   **FILE C**
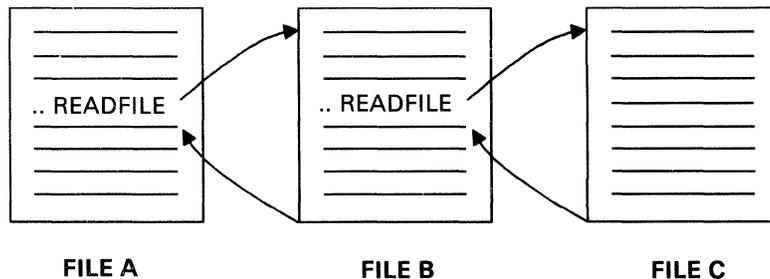
S7909019-0

The number of READFILE statements that can be nested varies depending on the System/36 resources (such as disk space and storage) available when MSRJE is running. Generally, at least 16 levels of nesting are possible.

LIBRARY Utility Control Statement

When a source or procedure member is specified in a READFILE statement and no LIBR value is specified, MSRJE searches the current library for the member. If the member is not found, the system library (#LIBRARY) is then searched. If a library is specified for the LIBR parameter on the MSRJE procedure command, only that library is searched for the named member.

The LIBRARY statement allows you to specify a new current library. This library is used as the current library until another LIBRARY statement is processed, reading of the file or member is completed, or until the reader terminates. If the file or member is completed, the library that was active before MSRJE began reading that file or member becomes the current library again. If the reader terminates, the library that was active before the reader started is restored.

The format of the LIBRARY statement is:

```
.. LIBRARY NAME-(name)
(.. L)          (0)
```

name: Specifies the name of the library that is to be searched first when a member is specified for a subsequent READFILE statement.

0: Specifies that the system library (#LIBRARY) is to be used.

The following example illustrates the use of the LIBRARY utility control statement and shows how library usage is changed and restored. Assume that an MSRJE session has been started and that the current active user library is named LIBA.

S7909020-0

1 A READFILE statement that specifies a procedure member (TYPE-P) named PROCA1 is processed, and no LIBR parameter value is specified. Therefore, LIBA is searched for PROCA1. If it is not found in LIBA, the system library (#LIBRARY) is searched.

2 A LIBRARY statement that specifies LIBB is processed; this causes LIBB to become the current active user library.

3 A READFILE statement that specifies a procedure member (TYPE-P) named PROCB1 is processed. LIBB is searched for PROCB1.

4 A READFILE statement is processed in PROCB1, which specifies PROCB2, a procedure member. No LIBR parameter is specified; therefore LIBB is searched.

5 PROCB2 completes processing, and the reader resumes processing PROCB1 (at the statement immediately after the READFILE).

6 A LIBRARY statement is processed in PROCB1 that specifies LIBC. Therefore, LIBC becomes the current active user library.

7 READFILE statement in PROCB1 is processed with a member (PROCC) specified (TYPE-P), but with no LIBR parameter specified. Therefore, LIBC is searched for the member. If PROCC is not found in LIBC, #LIBRARY is searched.

8 Processing of PROCC completes and returns to PROCB1 at the statement immediately after the READFILE that specified PROCC.

9 Processing of PROCB1 continues.

10 An EOF statement is then processed by MSRJE. The reader terminates, and the user library active when the reader started is restored (LIBA).

EOF Utility Control Statement

The EOF (end-of-file) utility control statement ends reader input to the host system and terminates the MSRJE reader.

The EOF statement is only valid as reader input.

The format of the EOF statement is:

```
.. EOF
(.. E)
```

The EOF statement has no parameters.

When an EOF statement is read, MSRJE sends all data read before the EOF statement to the host system and ends the reader.

No more data is requested from either the member or file being read from disk or from the operator at the keyboard. If MSRJE is reading a member or file and does not find an EOF utility control statement before the end of the member or file, MSRJE requests input from the device from which the last READFILE utility control statement was read, beginning at the record immediately following the READFILE utility control statement. If the last READFILE was read from a display station that has since been released, MSRJE will simulate an EOF utility control statement.

CANCEL Utility Control Statement

The CANCEL utility control statement can be entered only as console input. It allows you to cancel one of the MSRJE utility functions. The format of the CANCEL statement is:

```
.. CANCEL ⎡LRDn⎤
         ⎢RDn ⎥
         ⎢PRn ⎥
         ⎣PUn ⎦
(.. C)
         S7909021-0
```

LRDn: Causes MSRJE reader n to be cancelled. The value for n can be from 1 through 32.

RDn: Terminates the MSRJE reader associated with host reader n. The value for n can be from 1 through 15.

PRn: Terminates the MSRJE printer associated with host printer n. The value for n can be from 1 through 15.

PUn: Terminates the MSRJE punch associated with host punch n. The value for n can be from 1 through 15.

To determine the number to use, you must first view the status of MSRJE using the STATUS MSRJE procedure command.

When the CANCEL utility control statement is used to cancel a reader, it ends the reader before the EOF utility control statement or the end of data is processed. However, to the host system, it appears that the reader terminated normally.

When the CANCEL utility control statement is used to cancel a printer or a punch, it causes the printer or punch to:

1. Stop processing the data set it is currently receiving and discard any of the data set not yet processed

2. Prepare to process the next printer or punch data stream

When a permanent error occurs on the device to which BSC MSRJE is writing print or punch data, the CANCEL statement may have to be used to recover data. For example, MSRJE printer PR1 is processing output for job A. The host system is sending print data to System/36 for job A; some of the data has been received by System/36, and some has not yet been sent by the host system. While processing the print data, a permanent error occurs on the device to which MSRJE is writing the data. The MSRJE printer must terminate; however there is no way to inform the host system that no more output for job A can be accepted and that all the output should be saved at the host for later transmission. System/36 suspends all output for that device; that is no output for job A or any subsequent job can be received by PR1 until the operator intervenes. To end the suspension, you can do one of the following:

- Save the output for job A, by entering the host system commands (as console input) to stop the host system printer and to place the job output on the job queue again; or if you do not want to save the output, enter the host system command to cancel the host system printer.

- Enter the MSRJE CANCEL utility control statement to cancel the MSRJE printer that failed. MSRJE then receives and discards all subsequent output for job A. Any subsequent output for that host system device is processed normally by MSRJE.

The CANCEL utility control statement is not always needed. For example, assume that MSRJE printer PR1 is receiving output for job B. The output data set has been received by MSRJE. However, not all of the received data has been processed by the MSRJE printer. A permanent error occurs on the device to which MSRJE is writing the data. Because MSRJE has received the entire output data set, it cannot suspend the output from the host system. MSRJE discards all received data and automatically prepares to handle the next output data set.

SETFORM Utility Control Statement

The SETFORM utility control statement allows you to change the forms name for any configured MSRJE printer or punch. If you configured any forms set other than 0 (on display 34.0 during subsystem configuration) and MSRJE terminates without receiving a new forms name for the specified device, then the forms name you supply with the SETFORM utility control statement is saved in the form set member.

The format of the statement is:

```
.. SETFORM ⎰PRn⎱ -forms name[ , ⎰PRn⎱-forms name][ ,...]
            ⎱PUn⎰                 ⎱PUn⎰
(.. S)
                                                    S7909022-0
```

PRn, PUn: Specifies the host system device ID. The value specified for **n** can be from 1 through 15. **PRn** designates a printer; **PUn** designates a punch.

forms name: Specifies the forms name to be used for the specified device. The entry can be from 1 to 8 characters and can consist of any characters except comma (,), slash (/), apostrophe ('), question mark (?), or hyphen (-).

A forms name of all blanks can be specified by placing a comma immediately after the hyphen (-) following a PRn or PUn keyword, or by following the hyphen with a blank if the forms name is the last parameter (anything after the blank is ignored). For example, to specify a forms name of all blanks for printer PR1, either of the following could be used:

```
   .. SETFORM PR1-,PR2-ABC
or
   .. SETFORM PR2-ABC,PR1-
```

Each SETFORM statement can specify multiple printers and/or punches; the maximum statement length is 120 characters for console input and 80 characters for reader input.

INFOMSG Utility Control Statement

The INFOMSG utility control statement indicates to MSRJE whether informational messages are to be displayed at the MSRJE console.

The format of the INFOMSG utility control statement is:

```
.. INFOMSG  ┌YES┐
            └ NO┘
(.. I)
            S7909023-0
```

YES: Specifies that informational messages are displayed at the console unless otherwise specified on display 34.0 during subsystem member configuration or by an INFOMSG utility control statement.

NO: Specifies that most MSRJE-generated informational messages are sent only to the history file. This allows console messages from the host to be distinguished more easily and allows them to remain on the MSRJE console screen longer.

END Utility Control Statement

The END utility control statement indicates that MSRJE should send the appropriate sign-off message to the host system as soon as all readers, printers, and punches have completed processing. No new readers can be started after this statement has been entered.

The format of the END utility control statement is:

```
.. END [DELAY-nn]
```

The END statement cannot be abbreviated.

DELAY: Specifies the amount of time, in minutes, that MSRJE is to wait after all readers, printers, and punches have terminated before sending the sign-off to the host system. The value specified can be from 0 to 99. If no value is specified, 0 is assumed. The value specified here overrides the value, if any, specified for prompt 2 (**Termination delay in minutes**) on display 34.0 during subsystem configuration.

DELAY-0 specifies that MSRJE will send the sign-off command to the host system as soon as all readers, printers, and punches have completed processing. If any other value is set for the **DELAY** parameter, MSRJE waits that number of minutes after all readers, printers, and punches have completed before sending a host system sign-off. No new readers can then be started, but if printer or punch data is received from the host system before the time elapses, the appropriate MSRJE printer or punch is started. When those printers or punches complete processing, MSRJE will again wait the specified time before sending a host system sign-off.

Note: *Use caution when entering the END utility control statement as reader input. No other users will be able to start MSRJE readers after the END utility control statement has been processed.*

Chapter 5. Creating and Maintaining Forms Control Tables

You use the MSRJE control table utility (RJTABLE) to build a table that contains entries to define how output data streams received from the host system are to be handled by MSRJE. You also use RJTABLE to define how the MSRJE file utility (RJFILE) is to handle 256-character unprocessed record files created by MSRJE.

Using the control table utility, you can define entries in a table to specify whether print data streams are to be written to a printer, to a disk file that you define with or without carriage information, or to a file containing 256-character unprocessed records. You can also define whether punch data streams are to be written to a file you define or to a file containing 256-character unprocessed records.

You assign a name to each entry (except the print and punch default entries) in the table. When a forms name is received from the host system in a data stream, the control table specified on display 36.0 during subsystem configuration is searched for a matching entry name. If a matching entry name is found in the table, the definitions in that entry are used to control the handling of the output.

You can also use the utility to define a print default entry and a punch default entry for each control table you create. The default entries are used whenever a forms name is received from the host system and there is no matching entry in the table. Whenever you create a forms control table, these defaults are automatically included; to change their definition, you must update the default entries.

Note: *For those hosts which do not send forms mount messages or peripheral data set information records, there is no access into the forms control table except to the default entries.*

To ensure that MSRJE can read the file that contains the control table, you should authorize user ID MSRJE to have at least read access to the file that contains the control table. Refer to the *System Security Guide* for additional information on resource security.

Note: *If you do not specify a date for your file and you use date differentiated files, MSRJE uses the most recent file.*

Control Table Entries for Print Data Streams

Print data received from the host system can be written to a printer using the characteristics you define, to a disk file you define with or without carriage information, or to a sequential file containing 256-character unprocessed records. (Unprocessed records are contained in a compressed disk file.)

When print data is received from the host system and the host system sends a forms name with the data, MSRJE searches the control table (as specified on display 36.0 during subsystem member configuration) for an entry with the same name as the received host forms name. If a matching entry is found, the definition for that entry is used to control the output. If no match is found, the printer default entry in that control table is used to control the output. If you have not specified a forms control table or if the table you specified cannot be read, MSRJE uses the IBM-supplied values to control the output.

If print data is written to a compressed disk file, you must also define, in the same entry, the characteristics needed to print the compressed disk file, or you must define a file that is to be created with or without carriage information. You must use the RJFILE procedure command, as described in Chapter 6, to print a 256-character compressed disk file. The printer characteristics definition in the same control table entry as that used to create the compressed disk file is used to control the printing of the file.

If you are defining an entry for print data that is to be written to a printer, you specify:

- What the local (System/36) form name is to be

- Whether to use host printer balancing

- The printer or printers to which the data is to be written

- Whether the operator is to be given a chance to align the form (paper) in the printer

- Whether the received data is to be spooled

- Final quality printing or draft quality printing

- Whether to issue an end of forms message

- Whether to select a printwheel ID for the printer

- Style-of-print option selected

- The number of lines per inch to print

- The number of characters per inch to print

- The number of lines to print on a page

- The number of the last line to be printed on a page

- Carriage control information

If the data is to be spooled, you also specify:

- Whether to retain the data in the spool file after it has been printed

- Whether printing is to begin only after the job step ends

- Whether all output to the printer is to be treated as a single print step (only used with the RJFILE utility as defined in Chapter 6)

- The number of copies to be printed

- The spool file priority of the job

- How much activity you expect this spool file to have

If you are defining an entry to write received print data to a file as 256-character unprocessed records, you define the characteristics of the file, such as:

- The name of the file

- The user ID when resource security is active on System/36

- The expected size of the file

- Whether the file can be extended beyond its expected size, and, if it can, the extension size to use

- Where you would prefer the file be located

- Whether the file is to be saved if an error occurs

- Whether you want the data received for this entry added to an existing file

- Whether allocated disk space not needed by the file can be released for use by other files

If you specify that the output is to go to a compressed disk file (a file with unprocessed records), you also specify the same information that you specify when the data goes to a printer, or you also specify the same information that you specify when the data goes to a user-defined file. The printer information included with the compressed disk entry is used to control the printing of the file by the RJFILE utility, or the included user-defined file information is used to control the writing of the data to a user-defined file by the RJFILE utility. The RJFILE utility is described in Chapter 6.

If you are defining an entry for print data that is to be written to a user-defined file, you specify:

- The name of the file.

- The user ID when resource security is active on System/36.

- The name of a System/36 procedure, if any, that MSRJE should start after the print data stream has been completely received. MSRJE passes two parameters, the file date (parameter 1) and the file name (parameter 2), to the System/36 procedure.

  Note: The values in these parameters are ignored if RJFILE is using this entry.

- The name of the library in which the procedure is located.

- The type of file (sequential, direct, or indexed) to create.

- Whether the file is to be saved if an error occurs.

- Whether you want the data received for this entry added to an existing file.

- Whether allocated disk space not needed by the file can be released for use by other files.

- The expected size of the file.

- Whether the file can be extended beyond its expected size and, if it can, the extension size to use.

- Where you want the file located.

- The record length for the file.

- Whether the file is delete capable.

If you specified that the file is to be an indexed file, you should also specify:

- The starting position of the index key

- The length of the key

- Whether duplicate keys are allowed in the file

When you want the print data stream written to a compressed disk file (a file with unprocessed records), you specify:

- The name of the file

- The user ID when resource security is active on System/36

- The expected size of the file

- Whether the file can be extended beyond its expected size, and, if it can, the extension size to use

- Where you would prefer the file to be located

- Whether the file is to be saved if an error occurs

- Whether you want the data received for this entry added to an existing file

- Whether allocated disk space not needed by the file can be released for use by other files

You must also specify the same information as you specify when the data goes to a user-defined file. The user file information included with the compressed disk entry is used to control the converting of the compressed file by the RJFILE utility as described in Chapter 6.

Note: MSRJE does not support creating folders.

Control Table Entries for Punch Output

Punch data received from the host system can be written to a disk file (the characteristics of which you define), or the data can be written to a file containing 256-character unprocessed records (compressed disk file).

When punch data is received from the host system and the host system sends a forms name with the data, MSRJE searches the control table (as specified on display 36.0 during subsystem member configuration) for an entry with the same name as the received host forms name. If a matching entry is found, the definition for that entry is used to control the output. If no match is found, the punch default entry in that control table is used to control the output. If you have not specified a forms control table or if the table you specified cannot be read, MSRJE uses the IBM-supplied values to control the output.

If the punch output is written to a file you define, that file can be processed later by one of your programs. If the data is written to a compressed disk file (a file with unprocessed records), you must also define, within the same control table entry, another file. You then use the RJFILE procedure command, as described in Chapter 6, to convert the compressed disk file to the file you defined. RJFILE uses the same entry in the same control table as was used to create the compressed disk file.

If the punch output is to be written to a user-defined file, you define:

- The name of the file.

- The user ID when resource security is active on System/36.

- The name of a System/36 procedure, if any, that MSRJE should start after the punch data stream has been completely received. MSRJE passes two parameters, the file date (parameter 1) and the file name (parameter 2), to the System/36 procedure.

    Note: The values in these parameters are ignored if RJFILE is using this entry.

- The name of the library in which the procedure is located.

- The type of file (sequential, direct, or indexed) to create.

- Whether the file is to be saved if an error occurs.

- Whether you want the data received for this entry added to an existing file.

- Whether allocated disk space not needed by the file can be released for use by other files.

- The expected size of the file.

- Whether the file can be extended beyond its expected size and, if it can, the extension size to use.

- Where you want the file located.

- The record length for the file.

- Whether the file is delete-capable.

If you specified that the file is to be an indexed file, you also specify:

- The starting position of the index key

- The length of the key

- Whether duplicate keys are allowed in the file

When you want the punch data stream written to a compressed disk file (a file with unprocessed records), you specify:

- The name of the file

- The user ID when resource security is active on System/36

- The expected size of the file

- Whether the file can be extended beyond its expected size and, if it can, the extension size to use

- Whether the file is to be saved if an error occurs

- Where you would prefer the file be located

- Whether you want the data received for this entry added to an existing file

- Whether allocated disk space not needed by the file can be released for use by other files

You must also specify the same information as you specify when the data goes to a user-defined file. The user file information included with the compressed disk entry is used to control the converting of the compressed file by the RJFILE utility, as described in Chapter 6.

Note: MSRJE does not support creating folders.

Running the Control Table Utility

The control table utility is an interactive utility; that is when it is activated, it presents a series of displays to request that you enter the needed information to define an entry in the control table.

To start the control table utility, enter RJTABLE (the RJTABLE procedure command has no parameters) on the command line, or select option 5 (Define an MSRJE control table) from the Define Communications display. The first display presented is the control table utility main menu.

Control Table Utility Main Menu

```
                        MSRJE CONTROL TABLE UTILITY

                         Work with control tables


     Select one of the following:
       1. Create a new table
       2. Update entries in an existing table
       3. Add entries to an existing table
       4. Remove entries from an existing table
       5. Remove a table
       6. Print entries from an existing table
       7. Print a table
       8. Review entries in an existing table
       9. End the control table utility
     Option  . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2

     Table name  . . . . . . . . . . . . . . . . . . . . . . . . . .


     Cmd7-End of job


                                              CORP IBM Corp. 1986
```

Select one of the following: Enter the number of the option you want to use. The default is option 2.

Table name: You must specify the name of the forms control table with which you want to work. If you are creating a new table (option 1), enter the name you want assigned to the table in which the table is stored. If you intend to work with entries in an existing table (option 2, 3, 4, 6, or 8), enter the name of the existing table. The next display, the control table utility entry menu, reappears. If you select option 5 (Remove a table), the entire table and the file in which it is stored are deleted. The control table utility main menu reappears. If you select option 7 (Print a table), enter the table name.

If you select option 9, the control table utility ends and the System/36 command display reappears.

When the control table utility main menu reappears, pressing command key 7 cancels the control table utility.

If you select option 1, specify a table name, and press the Enter key, the MSRJE control table utility main menu is presented again. You have the option to specify a preferred disk location, as shown on the following display:

```
                          MSRJE CONTROL TABLE UTILITY

                            Work with control tables
                                                                 Optional-*

    Select one of the following:
      1. Create a new table
      2. Update entries in an existing table
      3. Add entries to an existing table
      4. Remove entries from an existing table
      5. Remove a table
      6. Print entries from an existing table
      7. Print a table
      8. Review entries from an existing table
      9. End the control table utility
    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  1

    Table name . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  FORMFILE

    Preferred disk location  . . . . . . A1,A2,A3,A4,block number  A1          *

    Cmd7-End of job              Cmd2-Page back

                                                        CORP IBM Corp. 1986
```

Preferred disk location: This prompt appears only if you select option 1 (Create a new table). Specify either the disk on which you want the table placed, the block number at which the table should begin, or blanks. The table is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the table is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your table is placed at the block location you specify only if that location is available. If it is not available, you receive a message stating it is not available, and you can specify another block location or disk.

If you specify blanks, the table is placed on the least used disk. This helps maintain an even balance between disks.

After you enter a preferred disk location, the next display, the control table utility entry menu, is presented.

Control Table Utility Entry Menu

The MSRJE control table utility entry menu allows you to select what you want to do with an entry in a control table.

The heading of this display identifies what you are going to do with the table. The example shows *Create a control table entry* because option 1 was selected on the first display. If, for example, option 2 had been selected, the heading would be *Update a control table entry*. In all cases, the name of the table entered for the **Table name** prompt on the previous display is shown in the upper right corner.

If you selected option 1 (Create), 2 (Update), 3 (Add), 4 (Remove), 6 (Print), or 8 (Review) on the main menu, you will see the following display.

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE

                          Create a control table entry

          Select a type of entry to work with:
            1. Print
            2. Print default
            3. Punch
            4. Punch default
          Option  . . . . . . . . . . . . . . . . . . . . . . . . . . . 1

          Table entry name  . . . . . . . . . . . . . . . . . . . . . . RESFORM1




          Cmd3-Save table, display table menu    Cmd7-Save table, end of job

                                                     CORP IBM Corp. 1986
```

If you selected option 5 (Remove a table) or 7 (Print a table) on the main menu, that display is shown again.

Following are the options which you need to enter, depending on the option that you choose on the main menu.

Select a type of entry to work with: Specify the type of control table entry with which you are working. The valid options are:

1. Print specifies that the entry is for print data received from the host system.

2. Print default specifies that the entry is to be used when no matching entry name is found for the forms name received for print data from the host system.

3. Punch specifies that the entry is for punch data received from the host system.

4. Punch default specifies that the entry is to be used when no matching entry name is found for a punch data stream forms name received from the host system.

Table entry name: Specify the name of the control table entry with which you are working (creating, updating, adding, or removing). When a forms name is received from the host system, it is compared to this name. If they match, this entry is used to control the output of that data stream.

Notes:

1. *If you selected option 3 (Add entries to an existing table) on the main menu and if an entry matching the **Table entry name** you enter already exists in the table, a message is presented giving you two options:*

   a. *Change the **Table entry name** you entered.*

   b. *Press the Enter key, which causes the utility to change from the add mode to the update mode. You can then change the existing entry in the control table.*

2. *If you selected option 2 (Update entries in an existing table) on the main menu and if the name you specify for the **Table entry name** prompt does not match a control table entry, a message is displayed and you are given two options:*

   a. *Change the **Table entry name** you entered.*

   b. *Press the Enter key, which causes the utility to change from the update mode to the add mode. You can then add the new entry to the control table.*

If you selected option 4 (Remove entries from an existing table) on the main menu, the entry menu is redisplayed after you have typed the **Table entry name** and pressed the Enter key. You can then remove another entry, or return to the main menu display by pressing command key 3.

Pressing command key 3 while the entry menu is present saves all valid entries and causes the main menu to be displayed; pressing command key 7 saves the forms control table file and ends the utility.

After you enter the type of entry you want to work with and the entry name, the control table output menu is displayed.

```
          MSRJE CONTROL TABLE UTILITY                    FORMFILE
                                                         RESFORM1
            Create a control table entry


Select where the output is to go:
  1. Printer
  2. Disk file
  3. Disk file with carriage information
  4. Compressed disk file for a printer
  5. Compressed disk file for a disk file
  6. Compressed disk file for a disk file with carriage information
Option . . . . . . . . . . . . . . . . . . . . . . . . . . .   1




Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              COPR IBM Copr. 1986
```

Select where the output is to go: Specify where the output associated with this entry is to be written.

1. Printer specifies that print data received is to be written to the printer. Valid only if the entry type is print or print default.

2. Disk file specifies that punch or print data received is to be written to a disk file.

3. Disk file with carriage information specifies that print data received is to be written to a sequential disk file with 4 bytes of carriage information at the front of each record in the file. This is valid only if the entry type is print or print default.

    Note: *The 4 carriage control bytes at the beginning of each record are divided into two groups. The first 2 bytes are before operations, and the last 2 bytes are after operations. There are two types of operations: skips and spaces. The 4 carriage control bytes may contain either skip operations or space operations in any combinations. The values for skip and space operations are defined as:*

    *   *Skip operation of hex 80 is skip to the NEXT channel (SNA only).*

    *   *Skip operations of hex 81 through hex 8C are skip to channel 1 through channel 12, respectively.*

    *   *Space operations of hex 00 through hex 0n are space 0 through space n lines, respectively.*

4. Compressed disk file for a printer specifies that print data received is to be written to a sequential disk file as 256-character unprocessed records. This file can be printed later by RJFILE. This is valid only if the entry type is print or print default.

5. Compressed disk file for a disk file specifies that print or punch data received is to be written to a sequential disk file as 256-character unprocessed records. This file can later be written by RJFILE to a disk file that you define.

6. Compressed disk file for a disk file with carriage information specifies that the print data received is to be written to a sequential disk file as 256-character unprocessed records. This file can be printed later by RJFILE to a sequential disk file that you define with 4 bytes of carriage information at the front of each record in the file.

   Note: *The 4 carriage control bytes at the beginning of each record are divided into two groups. The first 2 bytes are before operations, and the last 2 bytes are after operations. There are two types of operations: skips and spaces. The 4 carriage control bytes may contain either skip operations or space operations in any combinations. The values for skip and space operations are defined as:*

   • *Skip operation of hex 80 is skip to the NEXT channel (SNA only).*

   • *Skip operations of hex 81 through hex 8C are skip to channel 1 through channel 12, respectively.*

   • *Space operations of hex 00 through hex 0n are space 0 through space n lines, respectively.*

Pressing command key 3 while the entry menu is present saves the entry and causes the entry menu to be displayed; pressing command key 7 saves the forms control table file and ends the utility.

Pressing command key 3 while the output menu is present saves all valid entries and causes the main menu to be displayed; pressing command key 7 saves the forms control table file and ends the utility.

The remainder of this chapter is organized by the functions you can perform using the control table utility. The displays presented are dependent on the option you can choose on the entry menu; therefore, the chapter is organized to lead you through each option. The options are:

- Create, update, review, or add a print entry for printer output

- Create, update, review, or add a print entry for disk file output with or without carriage information

- Create, update, review, or add a print entry for compressed disk output

- Update or review a print default entry for print output

- Update or review a print default entry for disk file output with or without carriage information

- Update or review print default entry for compressed disk output

- Create, update, review, or add a punch entry for disk output

- Create, update, review, or add a punch entry for compressed disk output

- Update or review a punch default entry for disk output

- Update or review a punch default entry for compressed disk output

The name of the file, as specified on the main menu, and the name of the control table entry, as specified on the entry menu, are displayed in the upper right corner of all the following control table utility displays.

Note: A control table entry name is not displayed if you are working with default entries or if you specified blank characters for the entry name.

Whenever any of the following displays is present, pressing command key 3 saves all valid entries and returns you to the entry menu; pressing command key 7 cancels the current entry, saves the file, and ends the utility.

Print Entry for Printer Output

To create a print entry with output directed to the printer, select option 1 (Create a new table) or option 3 (Add entries to an existing table) on the main menu, then select option 1 (Print) on the entry menu and option 1 (Printer) on the output menu. If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have specified *Print* and *Table entry name* on the entry menu and *Printer* on the output menu, the next displays define which and how many printers you wish to use and some printer characteristics for those printers.

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                             RESFORM1
              Create an MSRJE forms control table print entry
                                                             Optional-*

Use host printer balancing . . . . . . . . . . . . . . . . N,Y  Y        *













    Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Use host printer balancing: Specifies whether you want to use a host printer balancing function. Yes allows you to define up to three printer IDs that MSRJE will direct received printer data to based upon the host printer device name. Printer balancing is done by the host; therefore, you must have more than one printer defined and active on your host system. If your host system does not support multiple printers per location, specify the default, N (No), for this prompt. You also must have more than one printer defined to your System/36 so you can define these System/36 printers for MSRJE's use on the following display.

The following display appears when Y (Yes) is specified for using the host printer balancing function.

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                             RESFORM1
              Create an MSRJE forms control table print entry
                                                             Optional-*

Use host printer balancing . . . . . . . . . . . . . . . . N,Y  Y        *

Printer ID or SYSTEM for first printer . . . . . . . . . . . SYSTEM

Printer ID or SYSTEM for second printer  . . . . . . . . . . P6

Printer ID or SYSTEM for third printer . . . . . . . . . . . P4*




    Cmd2-Page back
    Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Printer ID or SYSTEM for printer: Specify the ID of the printer that is to print the output. Up to three printer IDs can be specified; the first two are required. If you want to use the system printer, you may specify SYSTEM. When you specify printer IDs on this display, MSRJE directs print output to the printers as follows:

Two printers specified
If the host printer name is: *MSRJE will use:*

PR1   First printer

PR2   Second printer

PR3   First printer

.

.

.

PR13   First printer

PR14   Second printer

Three printers specified
If the host printer name is: *MSRJE will use:*

PR1   First printer

PR2   Second printer

PR3   Third printer

PR4   First printer

.

.

.

PR13   First printer

PR14   Second printer

PR15   Third printer

The printer characteristics that you define on the following displays are used by MSRJE for all the printers that you defined for this entry.

```
/‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾\
                   MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                           RESFORM1
              Create an MSRJE forms control table print entry
                                                        Optional-*

  Local forms name . . . . . . . . . . . . . . . . . . . . . .        *

  Align the forms before printing? . . . . . . . . . . . . . . N,Y  N

  Spool? . . . . . . . . . . . . . . . . . . . . . . . . . . . Y,N  Y

  Final quality printing?  . . . . . . . . . . . . . . . . . . N,Y  N

  Issue end of forms message?  . . . . . . . . . . . . . . . . Y,N  Y

  Select a printwheel ID for the printer?  . . . . . . . . . . N,Y  N




  Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                  CORP IBM Corp. 1986
_____/
```

Local forms name: Specify the forms name for the System/36 to which the
received host forms name is to be translated. If no entry is made, no
translation is done.

Align the forms before printing?: Specify whether you want the operator to have an
opportunity to align the forms on the printer before the data begins printing.
If you specify Y (Yes), the first line of output is printed, and a message is
issued. The operator can then align the form and select an option that causes
the first line to print again and the same message to be displayed, or the
operator can select an option that allows printing to continue with the second
line of output.

If N (No), the default, is specified, the output is printed, without allowing the
operator to align the forms.

Spool?: Specify whether you want output controlled by this entry to be spooled. If
you specify N (No), printer output controlled by this entry is not spooled, but
is printed as it is received. If you specify Y (Yes), then the output can be
written to the System/36 spooled file instead of directly to the printer. If
spooling is not active on System/36, this option is ignored.

Final quality printing?: Specify the print quality you want. If final quality printing N
(No) is specified, and the print quality switch on the printer is set to draft
quality, the output will be printed in draft quality. Any other combination
causes the output to be printed in final quality.

Issue end of forms message?: Specify Y (Yes) if you want an end of forms message
to be sent to the console.

Select a printwheel ID for the printer?: Specify Y (Yes) if you want to select a
printwheel ID for the 5219 Printer. If you specify Y, the display that allows
you to specify the option for the style of print that is to be put on the 5219
Printer is shown.

```
                          MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                  RESFORM1
                        Create an MSRJE forms control table print entry
                                                                  Optional-*

         Select the option for the desired style of print

            Style of print        ID values      Style of print           ID values

              1. Rhetoric           05           11. Light Italic            5B
              2. Courier 10         0B           12. Modern                  9E
              3. Prestige Pica      0C           13. Boldface                9F
              4. Artisian 10        0D           14. Essay                   A0
              5. Pica               14           15. Essay Italic            A2
              6. Symbol Scribe      50           16. Prestige 15             DD
              7. Script             54           17. Gothic 15               DE
              8. Courier 12         55           18. Courier 15              DF
              9. Prestige Elite     56           19. Symbol Diplomat Scribe  E1
             10. Letter Gothic      57
         Option . . . . . . . . . . . . . . . . . . . . . . . . 1-19           *

         Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                        (c) 1985 IBM Corp.
```

Select the option for the desired style of print: If you entered Y to select a
printwheel ID for the printer, you see a display on which you can select the
desired style of print on the 5219 printer. The default is specified through the
CNFIGSSP procedure. The printwheel ID cannot be specified when
characters per inch is specified on the following display.

The next display allows you to specify the format of the printed output, such as the
number of lines per inch and lines per page to be printed. You also define how
carriage control characters received from the host system in a print data stream are
to be handled by the printer.

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                             RESFORM1
              Create an MSRJE forms control table print entry
                                                        Optional-*

Lines per inch . . . . . . . . . . . . . . . . . . . . . 4,6,8        *

Characters per inch  . . . . . . . . . . . . . . . . . . 10,15        *

Lines per page . . . . . . . . . . . . . . . . . . . . . 1-112        *

Line number of the last line per page  . . . . . . . . . 1-112        *

Line skips for forms:
        01 -   1          02 -  0          03 -  0         04 -  0
        05 -   0          06 -  0          07 -  0         08 -  0
        09 -   0          10 -  0          11 -  0         12 -  0



Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                               (c) 1985 IBM Corp.
```

Lines per inch: This prompt is valid only for the following printers:

- 5224 Models 1 and 2

- 5225 Models 1, 2, 3, and 4

  Valid entries are 4, 6, or 8 lines per inch. If no entry is made, the current specification for the printer is used.

Characters per inch: Specify whether you want the data printed at 10 or 15 characters per inch. This prompt is valid only for the following printers:

- 5224 Models 1 and 2

- 5225 Models 1, 2, 3, and 4

  If the entry is left blank, the current specification for the printer is used.

  Note: You cannot use this prompt if you specified a printwheel ID on the previous display.

Lines per page: Specify the number of lines on each page (the form size). Valid entries are any decimal number from 1 to 112. If you do not enter a value, the current specification for the printer is used.

Line number of the last line per page: Specify the number of the last line to be printed on a page. Valid entries are any decimal number from 1 to 112, but the value must be equal to or greater than the specification made for the 01 line skip, and it must be less than or equal to the value specified for **Lines per page**.

The default is the value specified for the **Lines per page** prompt or, if no value was specified for that prompt, the current lines per page specification for the printer.

*Note: If you did not specify a value for the **Lines per page** prompt, then you must not enter a value here.*

Line skips for forms: Specify which line on a page you want the printer to advance (skip) to when the corresponding channel control character is received. Up to 12 entries (channel control characters 01 through 12) can be made. Each entry identifies a line number, and it must be less than or equal to the value specified for the **Line number of the last line per page** prompt.

A channel control character whose assigned value is 0 causes the printer to advance one line.

The default value for channel control character 01 is 1; the default for all other channel control characters is 0.

Channel control character 01 corresponds to the top margin of a page. If you specified the **Line number of the last line per page** prompt as 66, you could specify the following:

```
01 - 1        02 - 5        03 - 10       04 -0
05 - 4        06 - 0        07 - 0        08 -0
09 - 0        10 - 0        11 - 0        12 -66
```

If channel control character 01 is received, the printer will advance to line 1 of the next page; if channel control character 02 is received, the printer advances to line 5 of the current page; channel control character 03 causes an advance to line 10 of the current page; channel control character 05 causes the printer to advance to line 4 on the next page; and channel control character 12 advances the form to line 66, the last line. All other channel control characters cause the printer to advance one line.

Notes:

*1. These values can only be specified if a value has been specified for the **Lines per page** prompt.*

2. Under SNA, a received vertical tab table overrides the specifications made for the previous three prompts.

If you had specified N (No) for the **Spool?** prompt on the previous display, you have completed defining a print entry. The entry menu is redisplayed.

If you specified Y (Yes) for the **Spool?** prompt, continue with the next display.

```
                    MSRJE CONTROL TABLE UTILITY            FORMFILE
                                                           RESFORM1
                Create an MSRJE forms control table print entry
                                                           Optional-*

Hold in the spool file after printing? . . . . . . . . . . N,Y  N

Begin printing when the job step ends? . . . . . . . . . . Y,N  Y

Continue printing the same job stream? . . . . . . . . . . N,Y  N

Number of copies to be printed . . . . . . . . . . . . . 1-255        *

Priority on the spool file . . . . . . . . . . . . . . . . 0-5  1

Expected activity of spooled print file  . . . . . . . N,H,L,M  N




Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

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```

Note: *This display is only presented if you have selected spooling for the printer output.*

Hold in spool file after printing?: Specify whether you want to keep the print output in the spool file after it has been printed. Y (Yes) specifies that you want the data kept in the file after it has been printed; N (No) specifies that the print data can be removed from the spool file after it has printed. N (No) is the default.

Begin printing when the job step ends?: Specify whether the system should wait until the job step has been completed before it begins printing the data or whether it can begin printing the data before the job step ends. Y (Yes), the default, specifies that the system should wait. N (No) specifies that printing can begin before the job step ends.

Continue printing the same job stream?: Specifies whether you want all output to the device printed as a single print step. This parameter is only used with the RJFILE procedure (see Chapter 6).

Number of copies to be printed: Specify the number of copies of spooled output to be printed for the job step. Valid entries are any decimal number from 1 to 255 or a blank.

If a blank is specified (this is also the default) the number of copies printed is dependent on the protocol. For BSC MSRJE output, 1 is assumed. For SNA MSRJE output, the number of copies specified in the Peripheral Data Information Record (PDIR) received from the host system is used.

Priority on the spool file: Assigns a priority, from 0 through 5, to the spooled output. The system prints jobs in decreasing priority order. For example, print output with a priority of 5 is printed before other jobs on the spool file. Jobs with the same priority are printed in the same order they were written to the spool file. Priority 0 jobs are not printed until the system operator issues the RELEASE command to specifically release them for printing. If no priority is specified, 1 is assumed.

Expected activity of the spooled print file: Specify how much activity you expect this spool file to have. The system uses the activity level to allocate system data area to the file. Valid entries are:

- N for normal activity (the default)

- H for high activity

- L for low activity

- M for medium activity

A file with high activity requires the most system data area space.

You have now completed defining a print entry.

When creating, updating, or adding a print entry with output going to a printer, you will be prompted, when the printer parameters are complete, for any changes to the existing compressed disk file parameters.
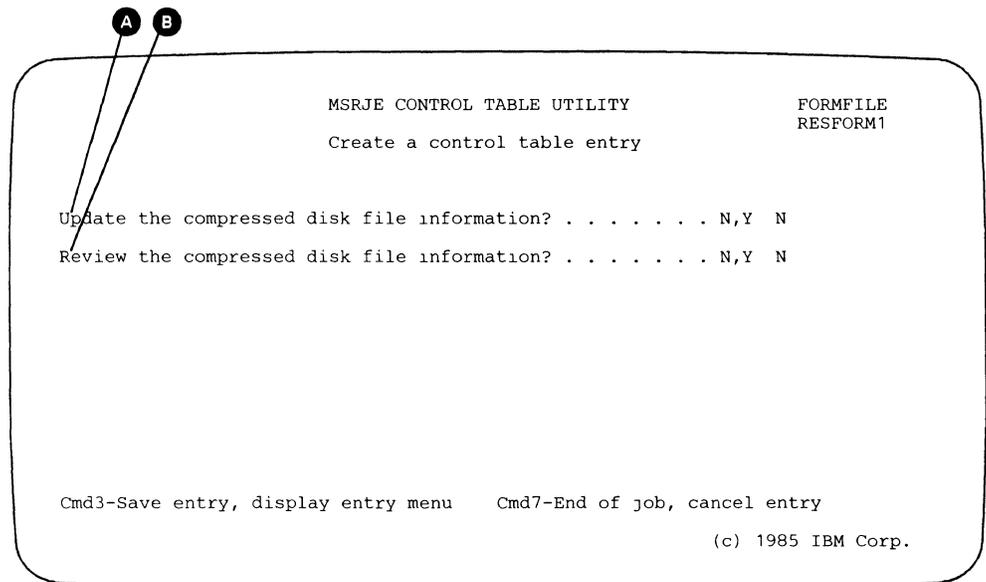
```
      Ⓐ Ⓑ
 ┌─────────────────────────────────────────────────────────────────────
 │                    MSRJE CONTROL TABLE UTILITY          FORMFILE
 │                                                         RESFORM1
 │                     Create a control table entry
 │
 │
 │  Update the compressed disk file information? . . . . . . . N,Y  N
 │
 │  Review the compressed disk file information? . . . . . . . N,Y  N
 │
 │
 │
 │
 │
 │
 │
 │
 │
 │  Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry
 │
 │                                              (c) 1985 IBM Corp.
 └─────────────────────────────────────────────────────────────────────
```

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Compressed disk file creation information is put into each print entry. This information is used by MSRJE when it tries to print the data and the printer is not available. When the data is sent to a compressed disk file, it can be printed later by the RJFILE utility.

When reviewing a print entry with output going to a printer, you can also review the existing compressed disk file parameters.

You see line Ⓐ if you are creating, updating, or adding to a print entry with output going to a printer. You see line Ⓑ if you are reviewing a print entry. The compressed disk file information display appears at the end of all print entry input

| Print Entry for Disk File Output

To create a print entry with output directed to a disk file, select option 1 (Create a new table) or option 3 (Add entries to an existing table) on the main menu, then select option 1 (Print) on the entry menu and option 2 (Disk file) on the output menu. If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have selected print and a table entry name on the entry menu, and disk file on the output menu, the following displays are shown.

The first display allows you to define the characteristics of the file you want created. You can supply such information as the file name and type of file.

```
                         MSRJE CONTROL TABLE UTILITY                FORMFILE
                                                                    RESFORM2
                 Create an MSRJE forms control table print entry
                                                                  Optional-*

 Name of the file to be created . . . . . . . . . . . . . . . . . MSRJE

 User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . . . MSRJE

 Procedure name . . . . . . . . . . . . . . . . . . . . . . . . .            *

 Library name . . . . . . . . . . . . . . . . . . . . . . . . . . #LIBRARY

 Type of file to be created . . . . . . . . . . . . . . S,D,I  S

 Save the file in case of error?  . . . . . . . . . . . . . Y,N  Y

 Add output to an existing file?  . . . . . . . . . . . . . N,Y  N

 Free unused file blocks? . . . . . . . . . . . . . . . . . Y,N  Y

 Cmd3-Save entry, display entry menu      Cmd7-End of job, cancel entry

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```

Name of the file to be created: Specify the name of the file that is to be created by MSRJE. MSRJE is the default. The file is labeled xxxxxxnn, where xxxxxx is the value specified for this prompt, and nn is 00 if the data is to be added to an existing file, or nn is equal to the print file sequence number as specified on display 36.0 during MSRJE configuration.

User ID: When resource security is active on System/36, specify the user ID that is to be used when print data is written to disk and when a procedure is started by MSRJE. The ID specified can be from 1 to 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should be started by MSRJE after this print data stream has been received.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, will be deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** parameter, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

> *Notes:*
>
> 1. *Only one device can use the file at one time.*
>
> 2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

> *Note:* *All carriage information for a print entry for disk file output will be ignored.*

The next display allows you to specify additional characteristics of the file, such as the initial allocated disk space for the file and whether the file can later be expanded.

```
                       MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                RESFORM2
               Create an MSRJE forms control table print entry
                                                           Optional-*

    Number of blocks to be reserved . . . . . . . . . . 1-560872    60

    Number of blocks to extend the file . . . . . . . . 0-560872    10

    Preferred disk location . . . . . . .A1,A2,A3,A4,block number A1      *

    Record length in bytes . . . . . . . . . . . . . . . . 1-4096    80

    Delete capable file? . . . . . . . . . . . . . . . . . . N,Y   N




    Cmd3-Previous menu, save entry            Cmd7-End, cancel entry

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```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file. MSRJE uses a buffer size of 198 bytes to restructure the data into records the size you specify. For example, if you specify a record length of 396, MSRJE will write two print records in each disk record.

Delete capable file?: Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

If you specified a file type of S (sequential) or D (direct) for the **Type of file to be created** prompt, this completes your definition. The entry menu is displayed. If you specified a file type of I (indexed), you must complete one more display.

```
                        MSRJE CONTROL TABLE UTILITY            FORMFILE
                                                               RESFORM2
                   Create an MSRJE forms control table print entry


    Starting position of the key . . . . . . . . . . . . . . 1-4096   1

    Length of the key  . . . . . . . . . . . . . . . . . . . 1-120    1

    Allow duplicate keys?  . . . . . . . . . . . . . . . . . N,Y   N








    Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Starting position of the key: Specify the first position of the key within the record, which can be any value from 1 through 4096. The default is 1.

Length of the key: Specify the number of bytes in the key. Any value from 1 through 120 is valid. The default is 1.

Note: *The value specified for **Starting position of the key** plus the value specified for **Length of the key** minus 1 must be less than or equal to the defined record length.*

Allow duplicate keys?: Specify whether more than one record can have the same key value within the file. N (No), the default, specifies that duplicate keys are not allowed. Y (Yes) specifies that duplicate keys are allowed.

If N is specified, duplicate key errors may occur since the host system can send duplicate header or trailer records to System/36.

This completes the definition for a print entry with output to a disk file. The entry menu is displayed.

| **Print Entry for Disk File with Carriage Information Output**

| To create a print entry with output directed to a disk file with carriage information, select:

| 1. Option 1 (Create a new table) or option 3 (Add entries to an existing table) on the main menu

| 2. Option 1 (Print) on the entry menu

| 3. Option 3 (Disk file with carriage information) on the output menu

| If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have selected **Print** and entered a **Table entry name** on the entry menu (the table entry name defines the entry in the table), and selected **Disk file with carriage information** on the output menu, the next display is presented.

The first display allows you to define the characteristics of the file you want created. You can supply such information as the file name and type of file.

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                 RESFORM3
                  Create an MSRJE forms control table print entry
                                                                 Optional-*

    Name of the file to be created . . . . . . . . . . . . . . . .   MSRJE

    User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . .   MSRJE

    Procedure name . . . . . . . . . . . . . . . . . . . . . . . .            *

    Library name . . . . . . . . . . . . . . . . . . . . . . . . .   #LIBRARY

    Type of file to be created . . . . . . . . . . . . . . S,D,I   S

    Save the file in case of error?  . . . . . . . . . . . . Y,N   Y

    Add output to an existing file?  . . . . . . . . . . . . N,Y   N

    Free unused file blocks? . . . . . . . . . . . . . . . . Y,N   Y

    Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

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```

Name of the file to be created: Specify the first 6 characters of the name of the file to be created when print output is written to a compressed disk file. MSRJE is the default name.

The file is named as follows:

xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the printer file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No).

or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: When resource security is active on System/36, specify the user ID that is to be used when punch data is written to disk and when a procedure is started by MSRJE. The ID specified can be from 1 to 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should be started by MSRJE after this print data stream has been received.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

A sequential file (S) must be specified since option 1 (Print) or option 2 (Print default) was selected on the type of entry menu and option 3 (Disk file with carriage information) was selected on the output menu.

.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, will be deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** parameter, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

Notes:

1. *Only one device can use the file at one time.*

2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

The next display allows you to specify additional characteristics of the file, such as the initial allocated disk space for the file and whether the file can later be expanded.

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                 RESFORM3
                  Create an MSRJE forms control table print entry
                                                                 Optional-*

   Number of blocks to be reserved . . . . . . . . . . 1-560872     60

   Number of blocks to extend the file . . . . . . . . 0-560872     10

   Preferred disk location . . . . . . .A1,A2,A3,A4,block number  A1        *

   Record length in bytes . . . . . . . . . . . . . . . . 1-4096    80

   Delete capable file? . . . . . . . . . . . . . . . . . . . N,Y   N




   Cmd3-Previous menu, save entry            Cmd7-End, cancel entry

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```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file.

A record length of 136 or 202 must be specified since option 1 (Print) or option 2 (Print default) was selected on the type of entry menu, and option 3 (Disk file with carriage information) was selected on the output menu.

Delete capable file?: Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

This completes the definition for a print entry with output to a disk file with carriage information. The entry menu is displayed.

Print Entry for Compressed Disk File for Printer Output

To create a print entry with output directed to a compressed disk file for a printer, you select option 1 (Create a new table) or option 3 (Add entries to an existing table) on the main menu, then select option 1 (Print) and option 4 (Compressed disk file for a printer) on the entry menu and on the output menu. If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have entered print and a table entry name on the entry menu and compressed disk file for a printer on the output menu, the following display is presented.

```
                    MSRJE CONTROL TABLE UTILITY                FORMFILE
                                                               RESFORM4
          Create an MSRJE forms control table compressed disk file entry
                                                            Optional-*

Name of the file to be created . . . . . . . . . . . . . . . MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . MSRJE

Number of blocks to be reserved  . . . . . . . . . . 1-560872      60

Number of blocks to extend the file  . . . . . . . . 0-560872      10

Preferred disk location  . . . . . . A1,A2,A3,A4,block number   A1        *

Save the file in case of error?  . . . . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . . . . Y,N  Y

Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                    COPR IBM Corp.  1986
```

Name of the file to be created: Specify the first 6 characters of the name of the file to be created when print output is written to a compressed disk file. MSRJE is the default name.

The file is named as follows:

xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the printer file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No).

          or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: Specify the user ID to be used when output is being written to disk and resource security is active. The user ID can be from 1 to 8 characters; the default is MSRJE.

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing compressed disk file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

> *Notes:*
>
> 1. *Only one device can use the file at one time.*
>
> 2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file are to be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

You have now completed defining the compressed disk file for print output that is to be written to disk. You must still define the print information for the entry so that the disk file utility can print the data. Therefore, you are led through the remaining displays to define print information.

```
                           MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                    RESFORM4
                    Create an MSRJE forms control table print entry
                                                                    Optional-*

Local forms name . . . . . . . . . . . . . . . . . . . . . . .             *

Printer ID or SYSTEM . . . . . . . . . . . . . . . . . . . . .    SYSTEM

Align the forms before printing? . . . . . . . . . . . . . N,Y    N

Spool? . . . . . . . . . . . . . . . . . . . . . . . . . . Y,N    Y

Final quality printing?  . . . . . . . . . . . . . . . . . N,Y    N

Issue end of forms message?  . . . . . . . . . . . . . . . Y,N    Y

Select a printwheel ID for the printer?  . . . . . . . . . N,Y    N


Cmd3-Save entry, display entry menu      Cmd7-End of job, cancel entry

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```

Local forms name: Specify the forms name for the System/36 to which the received host forms name is to be translated. If no entry is made, no translation is done.

Printer ID or SYSTEM: Specify the work station ID of the printer that is to print this output. If you intend to use the system printer, then specify SYSTEM. SYSTEM is the default.

Align the forms before printing?: Specify whether you want the operator to have an opportunity to align the forms on the printer before the data begins printing. If you specify Y (Yes), the first line of output is printed and a message is issued. The operator can then align the form and select an option that causes the first line to print again and the same message to be displayed, or the operator can select an option that allows printing to continue with the second line of output.

If N (No), the default, is specified, the output is printed without allowing the operator to align the forms.

Spool?: Specify whether you want output controlled by this entry to be spooled. If you specify N (No), printer output controlled by this entry is not spooled, but is printed as it is received. If you specify Y (Yes), then the output can be written to the System/36 spool file instead of directly to the printer. If spooling is not active on System/36, this option is ignored.

Final quality printing?: Specify the print quality you want. If final quality printing N (No) is specified, and the print quality switch on the printer is set to draft quality, the output will be printed in draft quality. Any other combination causes the output to be printed in final quality.

Issue end of forms message?: Specify Y (Yes) if you want an end of forms message to be sent to the console.

Select a printwheel ID for the printer?: Specify Y (Yes) if you want to select a printwheel ID for the 5219 Printer. If you specify Y, the display that allows you to specify the option for the style of print that is to be put on the 5219 Printer is shown.

```
                         MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                  RESFORM4
                   Create an MSRJE forms control table print entry
                                                               Optional-*

        Select the option for the desired style of print

           Style of print      ID values      Style of print         ID values

              1. Rhetoric          05          11. Light Italic          5B
              2. Courier 10        0B          12. Modern                9E
              3. Prestige Pica     0C          13. Boldface              9F
              4. Artisian 10       0D          14. Essay                 A0
              5. Pica              14          15. Essay Italic          A2
              6. Symbol Scribe     50          16. Prestige 15           DD
              7. Script            54          17. Gothic 15             DE
              8. Courier 12        55          18. Courier 15            DF
              9. Prestige Elite    56          19. Symbol Diplomat Scribe  E1
             10. Letter Gothic     57
        Option . . . . . . . . . . . . . . . . . . . . . . . . .  1-19          *

        Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Select the option for the desired style of print: If you entered Y to select a printwheel ID for the printer, you see a display on which you can select the desired style of print on the 5219 Printer. The default is specified through the CNFIGSSP procedure. The printwheel ID cannot be specified when characters per inch is specified on the following display.

The next display allows you to specify the format of the printed output, such as the number of lines per inch and inches per page to be printed. You also define how carriage control characters received from the host system in a print data stream are to be handled by the printer.

```
                      MSRJE CONTROL TABLE UTILITY                FORMFILE
                                                                 RESFORM4
              Create an MSRJE forms control table print entry
                                                                 Optional-*

Lines per inch . . . . . . . . . . . . . . . . . . . . 4,6,8             *

Characters per inch  . . . . . . . . . . . . . . . . . 10,15            *

Lines per page . . . . . . . . . . . . . . . . . . . . 1-112            *

Line number of the last line per page  . . . . . . . . 1-112            *

Line skips for forms:
     01 -  1        02 -  0        03 -  0        04 -  0
     05 -  0        06 -  0        07 -  0        08 -  0
     09 -  0        10 -  0        11 -  0        12 -  0




Cmd3-Save entry, save entry menu      Cmd7-End of job, cancel entry

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```

Lines per inch: This prompt is valid only for the following printers:

- 5224 Models 1 and 2

- 5225 Models 1, 2, 3, and 4

  Valid entries are 4, 6, or 8 lines per inch. If no entry is made, the current specification for the printer is used.

Characters per inch: Specify whether you want the data printed at 10 or 15 characters per inch. This prompt is valid only for the following printers:

- 5224 Models 1 and 2

- 5225 Models 1, 2, 3, and 4

  If no entry is made, the current specification for the printer is used.

  Note: You cannot use this prompt if you specified a printwheel ID on the previous display.

Lines per page: Specify the number of lines on each page (the size of the forms). Valid entries are any decimal number from 1 to 112. If you do not enter a value, the current specification for the printer is used.

Line number of the last line per page: Specify the number of the last line to be printed on a page. Valid entries are any decimal number from 1 to 112, but the value must be equal to or greater than the specification made for the 01 Line skip, and it must be less than or equal to the value specified for **Lines per page.**

The default is the value specified for the **Lines per page** prompt or, if no value was specified for that prompt, the current lines per page specification for the printer.

*Note: If you did not specify a value for the **Lines per page** prompt, then you must not enter a value here.*

Line skips for forms: Specify which line on a page you want the printer to advance (skip) to when the corresponding channel control character is received. Up to 12 entries (channel control characters 01 through 12) can be made. Each entry identifies a line number, and it must be less than or equal to the value specified for the **Line number of the last line per page** prompt.

A channel control character whose assigned value is 0 causes the printer to advance one line.

The default value for channel control character 01 is 1; the default for all other channel control characters is 0.

Channel control character 01 represents the top margin of the page. If you had specified 66 for the **Line number of the last line per page** prompt, you could specify the following:

```
01 - 1        02 - 5        03 - 10        04 -  0
05 - 4        06 - 0        07 -  0        08 -  0
09 - 0        10 - 0        11 -  0        12 - 66
```

If channel control character 01 is received, the printer will advance to line 1 of the next page; if channel control character 02 is received, the printer advances to line 5 of the current page; channel control character 03 causes an advance to line 10 of the current page; channel control character 05 causes the printer to advance to line 4 on the next page; and channel control character 12 advances the form to line 66, the last line. All other channel control characters cause the printer to advance one line.

Notes:

*1. These values can only be specified if a value has been specified for the **Lines per page** prompt.*

2. Under SNA, a received vertical tab table overrides the specifications made for the previous three prompts.

If you had specified N (No) for the **Spool?** prompt on the previous display, you have completed defining a print entry. The entry menu is redisplayed.

If you specified Y (Yes) for the **Spool?** prompt, continue with the next display.

```
                         MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                  RESFORM4
                   Create an MSRJE forms control table print entry
                                                                  Optional-*

   Hold in the spool file after printing? . . . . . . . . . . N,Y  N

   Begin printing when the job step ends? . . . . . . . . . . Y,N  Y

   Continue printing the same job stream? . . . . . . . . . . N,Y  N

   Number of copies to be printed . . . . . . . . . . . . . 1-255        *

   Priority on the spool file . . . . . . . . . . . . . . . . 0-5  1

   Expected activity of spooled print file  . . . . . . . N,H,L,M  N




   Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Note: *This display is presented only if you have selected spooling for the printer output.*

Hold in the spool file after printing?: Specify whether you want to keep the print output in the spooled disk file after it has been printed. Y (Yes) specifies that you want the data kept in the file after it has been printed; N (No) specifies that the print data can be removed from the spooled file after it has printed. N (No) is the default.

Begin printing when the job step ends?: Specify whether the system should wait until the job step has been completed before it begins printing the data or whether it can begin printing the data before the job step ends. Y (Yes), the default, specifies that the system should wait. N (No) specifies that printing can begin before the job step ends.

Continue printing the same job stream?: Specify whether you want all output to the device printed as a single print step. This prompt is only used with the RJFILE (see Chapter 6) utility.

Number of copies to be printed: Specify the number of copies of spooled output to be printed for the job step. Valid entries are any decimal number from 1 to 255 or a blank.

If a blank is specified (this is also the default) the number of copies printed is dependent on the protocol. For BSC MSRJE output, 1 is assumed. For SNA MSRJE output, the number of copies specified in the Peripheral Data Information Record (PDIR) received from the host system is used.

Priority on the spool file: Specify a priority, from 0 through 5, for the spooled output. The system prints jobs in decreasing priority order. For example, print output with a priority of 5 is printed before other jobs on the spooled file. Jobs with the same priority are printed in the same order they were written to the spool file. Priority 0 jobs are not printed until the system operator issues the RELEASE command to specifically release them for printing. If no priority is specified, 1 is assumed.

Expected activity of spooled print file: Specify how much activity you expect this file to have. The system uses the activity level to allocate system data area to the file. Valid entries are:

- N for normal activity (the default)

- H for high activity

- L for low activity

- M for medium activity

A file with high activity requires the most system data area space.

You have now completed defining an entry for print output to a compressed disk file for a printer. The entry menu is displayed.

Print Entry for Compressed Disk File for Disk File Output

To create a print entry with output directed to a compressed disk file for a disk file, select:

1. Option 1 (Create a new table) or option 3 (Add entries to an existing table) on the main menu

2. Option 1 (Print) on the entry menu and option 5 (Compressed disk file for a disk file) on the output menu

If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have entered print and a table entry name on the entry menu and compressed disk file for a disk file on the output menu, the following displays are presented.

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                 RESFORM5
          Create an MSRJE forms control table compressed disk file entry
                                                            Optional-*

     Name of the file to be created . . . . . . . . . . . . . . .  MSRJE

     User ID  . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

     Number of blocks to be reserved  . . . . . . . . . .  1-560872      60

     Number of blocks to extend the file  . . . . . . . .  0-560872      10

     Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1        *

     Save the file in case of error?  . . . . . . . . . . . . Y,N  Y

     Add output to an existing file?  . . . . . . . . . . . . N,Y  N

     Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y

     Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                  COPR IBM Corp.  1986
```

Name of the file to be created: Specify the first 6 characters of the name of the file to be created when print output is written to a compressed disk file. MSRJE is the default name.

The file is named as follows:

xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the print file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No).

or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: Specify the user ID to be used when output is being written to disk and resource security is active. The user ID can be from 1 to 8 characters; the default is MSRJE.

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing compressed disk file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

> *Notes:*
>
> 1. *Only one device can use the file at one time.*
>
> 2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file are to be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

> *Note:* *All carriage information for print entry for disk file output will be ignored.*

Once you have completed the definition for the compressed disk file, you define
the characteristics of a data file so that the RJFILE utility (see Chapter 6) can
convert the compressed file to a data file usable by your program. The following
sequence of displays is presented.

```
                         MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                  RESFORM5
                    Create an MSRJE forms control table print entry
                                                                  Optional-*

 Name of the file to be created . . . . . . . . . . . . . . . . . MSRJE

 User ID . . . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

 Procedure name . . . . . . . . . . . . . . . . . . . . . . . .             *

 Library name . . . . . . . . . . . . . . . . . . . . . . . . .  #LIBRARY

 Type of file to be created . . . . . . . . . . . . . . . S,D,I  S

 Save the file in case of error?  . . . . . . . . . . . . . Y,N  Y

 Add output to an existing file?  . . . . . . . . . . . . . N,Y  N

 Free unused file blocks? . . . . . . . . . . . . . . . . . Y,N  Y

 Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                     (c)  1983 IBM Corp.
```

Name of the file to be created: Specify the first 6 characters of the name of the file
that is to be created by MSRJE. MSRJE is the default name.

The file will be named as follows:

   xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created**
prompt.

nn   is the print file sequence number (as specified on display 36.0
during MSRJE configuration) if the **Add output to an existing file?**
prompt is specified as N (No)

            or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: When resource security is active on System/36, specify the user ID that
is to be used when print data is written to disk and when a procedure is
started by MSRJE. The ID specified can be from 1 through 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should be started by MSRJE or RJFILE after this print data stream has been received.

When running RJFILE, if the procedure contains a LOAD OCL statement, the procedure should also contain a LIBRARY OCL statement with the name of the library that contains the program that is to be loaded. If the procedure does not contain a library statement, the program that is to be loaded must be located in the system library.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

> *Notes:*
>
> *1. Only one device can use the file at one time.*
>
> *2. If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

N (No) should be specified if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                 RESFORM5
                  Create an MSRJE forms control table print entry
                                                                 Optional-*

    Number of blocks to be reserved  . . . . . . . . . .  1-560872     60

    Number of blocks to extend the file  . . . . . . . .  0-560872     10

    Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1      *

    Record length in bytes . . . . . . . . . . . . . . .  1-4096       80

    Delete capable file? . . . . . . . . . . . . . . . . . . N,Y  N




    Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                    COPR IBM Corp. 1986
```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file. RJFILE uses a buffer size of 198 bytes to restructure the data into records the size you specify. For example, if you specify a record length of 396, RJFILE will write two print records in each disk record.

Delete capable file? Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

If you specified a file type of S (sequential) or D (direct) for the **Type of file to be created** prompt, this completes your definition. The entry menu is displayed. If you specified a file type of I (indexed), you must complete one more display.

```
                         MSRJE CONTROL TABLE UTILITY               FORMFILE
                                                                   RESFORM5
               Create an MSRJE forms control table print entry


Starting position of the key . . . . . . . . . . . . . 1-4096    1

Length of the key  . . . . . . . . . . . . . . . . . . 1-120     1

Allow duplicate keys?  . . . . . . . . . . . . . . . . . N,Y     N






Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Starting position of the key: Specify the first position of the key within the record, which can be any value from 1 through 4096. The default is 1.

Length of the key: Specify the number of bytes in the key. Any value from 1 through 120 is valid. The default is 1.

*Note: The value specified for **Starting position of the key** plus the value specified for*
*   **Length of the key** minus 1 must be less than or equal to the defined record*
*   length.*

Allow duplicate keys?: Specify whether more than one record can have the same key value within the file. N (No), the default, specifies that duplicate keys are not allowed. Y (Yes) specifies that duplicate keys are allowed.

If N is specified, duplicate key errors may occur since the host system can send duplicate header or trailer records to System/36.

This completes the definition for a print entry with output to a compressed disk file for a disk file. The entry menu is displayed.

| Print Entry for Compressed Disk File for a Disk File with Carriage Information Output

To create a print entry with output directed to a compressed disk file for a disk file with carriage information, select:

1. Option 1 (Create a new entry) or option 3 (Add entries to an existing table) on the main menu

2. Option 1 (Print) on the entry menu

3. Option 6 (Compressed disk file for a disk file with carriage information) on the output menu

If you are updating an existing entry (option 2 on the main menu), the current values are presented for the named entry on each of the displays. You can change any of those values. After you have entered **Print** and **Table entry name** on the entry menu and compressed disk file for a disk file with carriage information on the output menu, the following displays are presented.

```
                       MSRJE CONTROL TABLE UTILITY              FORMFILE ·
                                                                RESFORM6
         Create an MSRJE forms control table compressed disk file entry
                                                             Optional-*

     Name of the file to be created . . . . . . . . . . . . . . . .   MSRJE

     User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . .   MSRJE

     Number of blocks to be reserved  . . . . . . . . . .  1-560872      60

     Number of blocks to extend the file  . . . . . . . .  0-560872      10

     Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1       *

     Save the file in case of error?  . . . . . . . . . . . . Y,N  Y

     Add output to an existing file?  . . . . . . . . . . . . N,Y  N

     Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y

     Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                   COPR IBM Corp. 1986
```

Name of the file to be created: Specify the first 6 characters of the name of the file to be created when print output is written to a compressed disk file. MSRJE is the default name.

The file will be named as follows:

xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the print file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No).

or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: Specify the user ID to be used when output is being written to disk and resource security is active. The user ID can be from 1 to 8 characters; the default is MSRJE.

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note: If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing compressed disk file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt or MSRJE. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

Notes:

1. *Only one device can use the file at one time.*

2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file are to be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

Once you have completed the definition for the compressed disk file, you define the characteristics of a data file so that the RJFILE utility (see Chapter 6) can convert the compressed file to a data file usable by your programs. The following sequence of displays is presented.

```
                       MSRJE CONTROL TABLE UTILITY                  FORMFiLE
                                                                    RESFORM6
                Create an MSRJE forms control table print entry
                                                                   Optional-*

Name of the file to be created . . . . . . . . . . . . . . . . .   MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . . .   MSRJE

Procedure name . . . . . . . . . . . . . . . . . . . . . . . . .           *

Library name . . . . . . . . . . . . . . . . . . . . . . . . . .   #LIBRARY

Type of file to be created . . . . . . . . . . . . . . . S,D,I  S

Save the file in case of error?  . . . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . . . Y,N  Y

Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                     (c) 1983 IBM Corp.
```

Name of the file to be created: Specify the first 6 characters of the name of the file that is to be created by MSRJE. MSRJE is the default name.

The file will be named as follows:

    xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the print file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No)

      or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: When resource security is active on System/36, specify the user ID that is to be used when punch data is written to disk and when a procedure is started by MSRJE. The ID specified can be from 1 through 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should be started by MSRJE or RJFILE after this print data stream has been received.

When running RJFILE, if the procedure contains a LOAD OCL statement, the procedure should also contain a LIBRARY OCL statement with the name of the library that contains the program that is to be loaded. If the procedure does not contain a library statement, the program that is to be loaded must be located in the system library.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

A sequential file (S) must be specified since option 1 (Print) or option 2 (Print default) was selected on the type of entry menu and option 6 (Compressed disk file for a disk file with carriage information) was selected on the output menu.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

Note: *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the print data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the print file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

Notes:

1. *Only one device can use the file at one time.*

2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

N (No) should be specified if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

```
                       MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                RESFORM6
                  Create an MSRJE forms control table print entry
                                                                Optional-*

Number of blocks to be reserved  . . . . . . . . . .  1-560872     60

Number of blocks to extend the file  . . . . . . . .  0-560872     10

Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1        *

Record length in bytes . . . . . . . . . . . . . . .  1-4096      80

Delete capable file? . . . . . . . . . . . . . . . . . . N,Y   N




    Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                        COPR IBM Corp. 1986
```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file.

A record length of 136 or 202 must be specified since option 1 (Print) or option 2 (Print default) was selected on the type of entry menu, and option 6 (Compressed disk file for a disk file with carriage information) was selected on the output menu.

Delete capable file? Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

This completes the definition for a print entry with output to a compressed disk file for a disk file with carriage information. The entry menu is displayed.

Print Default Entry

One print default entry is defined for each control table file. This entry is used if there is no entry in the active control table that matches the received host forms name. Whenever you create a new table (option 1 on the main menu), the control table utility automatically inserts a print default entry in that table. Therefore, you cannot create or add a print default entry but can update the existing entry. When you enter the **Table entry name** or leave it blank on the entry menu, a message is displayed telling you that the entry exists. Press the Enter key to update the entry.

Updating a print default entry is the same as updating a print entry with printer output or a print entry with compressed disk output, except that option 2 (Print default entry) must be specified on the entry menu.

You can remove a print default entry that you have updated. The control table automatically replaces the removed entry with the original entry containing the values supplied by IBM.

The default values supplied by IBM are shown in Appendix D.

| Punch Entry for Disk File Output

| To create a punch entry with output directed to a disk file, select:

| 1. Option 1 (Create a new table) or option 3 (Add entries to an existing table) on
| the mian menu

| 2. Option 3 (Punch) on the entry menu

| 3. Option 2 (Disk file) on the output menu.

| If you are updating an existing entry (option 2 on the main menu), the current
| values are presented for the named entry on each of the displays. You can change
| any of those values. After you have entered **Punch** and **Table entry name** on the
| entry menu and **Disk file** on the output menu, the following displays are presented.

The first display allows you to define the characteristics of the file you want
created. You can supply such information as the file name and type of file.

```
                       MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                RESFORM7
                 Create an MSRJE forms control table punch entry
                                                                Optional-*

  Name of the file to be created . . . . . . . . . . . . . . . . MSRJE

  User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . . MSRJE

  Procedure name . . . . . . . . . . . . . . . . . . . . . . . .          *

  Library name . . . . . . . . . . . . . . . . . . . . . . . . . #LIBRARY

  Type of file to be created . . . . . . . . . . . . . . S,D,I  S

  Save the file in case of error?  . . . . . . . . . . . . Y,N  Y

  Add output to an existing file?  . . . . . . . . . . . . N,Y  N

  Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y

  Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                    (c) 1983 IBM Corp.
```

Name of the file to be created: Specify the name of the file that is to be created by
    MSRJE. MSRJE is the default. The file is labeled xxxxxxnn, where xxxxxx is
    the value specified for this prompt, and nn is 00 if the data is to be added to
    an existing file, or nn is equal to the punch file sequence number as specified
    on display 36.0 during MSRJE configuration.

User ID: When resource security is active on System/36, specify the user ID that
    is to be used when punch data is written to disk and when a procedure is
    started by MSRJE. The ID specified can be from 1 to 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should
    be started by MSRJE after this punch data stream has been received.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, will be deleted.*

Add output to an existing file?: Specify whether you want the punch data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** parameter, and nn is the punch file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

> *Notes:*
>
> 1. *Only one device can use the file at one time.*
>
> 2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

The next display allows you to specify additional characteristics of the file, such as the initial allocated disk space for the file and whether the file can later be expanded.

```
                        MSRJE CONTROL TABLE UTILITY                    FORMFILE
                                                                       RESFORM7
                   Create an MSRJE forms control table punch entry
                                                                       Optional-*

  Number of blocks to be reserved . . . . . . . . . . 1-560872     60

  Number of blocks to extend the file . . . . . . . . 0-560872     10

  Preferred disk location . . . . . . .A1,A2,A3,A4,block number A1        *

  Record length in bytes . . . . . . . . . . . . . . . 1-4096      80

  Delete capable file? . . . . . . . . . . . . . . . . . . . N,Y  N




  Cmd3-Previous menu, save entry                 Cmd7-End, cancel entry

                                                         COPR IBM Corp. 1986
```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file. MSRJE always receives 80-character records. If the value you specify for the **Record Length in bytes** prompt is not 80, MSRJE restructures the data into records of the size you specify. For example, if you specify 60 for the **Record length in bytes** prompt, three 80-character records received by MSRJE will be written to the file you are defining as four 60-character records. If you specify 160 for the **Record length in bytes** prompt, every two 80-character records received by MSRJE will be written to the file you are defining as one 160-character record.

Normally, the record length for a punch file is 80 or 96 bytes. The default record length for punch data directed to a data file is 80 bytes.

Delete capable file?: Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

If you specified a file type of S (sequential) or D (direct) for the **Type of file to be created** prompt, this completes your definition. The entry menu is displayed. If you specified a file type of I (indexed), you must complete one more display.

```
                         MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                  RESFORM7
                    Create an MSRJE forms control table punch entry


   Starting position of the key . . . . . . . . . . . . . . 1-4096   1

   Length of the key  . . . . . . . . . . . . . . . . . . . 1-120   1

   Allow duplicate keys?  . . . . . . . . . . . . . . . . . N,Y   N








   Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                             (c) 1983 IBM Corp.
```

Starting position of the key: Specify the first position of the key within the record, which can be any value from 1 through 4096. The default is 1.

Length of the key: Specify the number of bytes in the key. Any value from 1 through 120 is valid. The default is 1.

Note: *The value specified for **Starting position of the key** plus the value specified for **Length of the key** minus 1 must be less than or equal to the defined record length.*

Allow duplicate keys?: Specify whether more than one record can have the same key value within the file. N (No), the default, specifies that duplicate keys are not allowed. Y (Yes) specifies that duplicate keys are allowed.

If N is specified, duplicate key errors may occur since the host system can send duplicate header or trailer records to System/36.

This completes the definition for a print entry with output to a disk file. The entry menu is displayed.

| Punch Entry for Compressed Disk File for Disk File Output

| To create a punch entry with output directed to a compressed disk file for a disk
| file, select:

| 1. Option 1 (Create a new entry) or option 3 (Add entries to an existing table) on
| the main menu

| 2. Option 3 (Punch) on the entry menu

| 3. Option 5 (Compressed disk file for a disk file) on the output menu

| If you are updating an existing entry (option 2 on the main menu), the current
| values are presented for the named entry on each of the displays. You can change
| any of those values. After you have selected **Punch**, and **Table entry name** on the
| entry menu, and compressed disk file for a disk file on the output menu, the
| following displays are presented.

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                             RESFORM8
        Create an MSRJE forms control table compressed disk file entry
                                                           Optional-*

   Name of the file to be created . . . . . . . . . . . . . . .  MSRJE

   User ID  . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

   Number of blocks to be reserved  . . . . . . . . . .  1-560872    60

   Number of blocks to extend the file  . . . . . . . .  0-560872    10

   Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1       *

   Save the file in case of error?  . . . . . . . . . . . . . Y,N  Y

   Add output to an existing file?  . . . . . . . . . . . . . N,Y  N

   Free unused file blocks? . . . . . . . . . . . . . . . . . Y,N  Y

   Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                   CORP IBM Corp. 1986
```

Name of the file to be created: Specify the first 6 characters of the name of the file to be created when punch output is written to a compressed disk file. MSRJE is the default name.

The file will be named as follows:

xxxxxxnn

where:

xxxxxx   is the value you specify for the **Name of the file to be created** prompt.

nn   is the punch file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No).

or

nn   is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: Specify the user ID to be used when output is being written to disk and resource security is active. The user ID can be from 1 to 8 characters; the default is MSRJE.

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

> *Note:* *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the punch data received for this entry to be added to an existing compressed disk file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt or MSRJE. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the punch file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

Notes:

1. *Only one device can use the file at one time.*

2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file are to be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the file will be located on a remote system. Unused file blocks cannot be released on remote systems.

Once you have completed the definition for the compressed disk file, you define the characteristics of a data file so that the RJFILE utility (see Chapter 6) can convert the compressed file to a data file usable by your programs. The following sequence of displays is presented.

```
                       MSRJE CONTROL TABLE UTILITY              FORMFILE
                                                                RESFORM8
                 Create an MSRJE forms control table punch entry
                                                                Optional-*

Name of the file to be created . . . . . . . . . . . . . . . .  MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

Procedure name . . . . . . . . . . . . . . . . . . . . . . . .        *

Library name . . . . . . . . . . . . . . . . . . . . . . . . .  #LIBRARY

Type of file to be created . . . . . . . . . . . . . . S,D,I  S

Save the file in case of error?  . . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y

Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

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```

Name of the file to be created: Specify the first 6 characters of the name of the file that is to be created by MSRJE. MSRJE is the default name.

The file will be named as follows:

    xxxxxxnn

where:

xxxxxx	is the value you specify for the **Name of the file to be created** prompt.
nn	is the punch file sequence number (as specified on display 36.0 during MSRJE configuration) if the **Add output to an existing file?** prompt is specified as N (No)
	or
nn	is 00 if the **Add output to an existing file?** prompt is Y (Yes).

User ID: When resource security is active on System/36, specify the user ID that is to be used when punch data is written to disk and when a procedure is started by MSRJE. The ID specified can be from 1 through 8 characters.

Procedure name: Specify the name of a System/36 procedure, if any, that should be started by MSRJE or RJFILE after this punch data stream has been received.

When running RJFILE, if the procedure contains a LOAD OCL statement, the procedure should also contain a LIBRARY OCL statement with the name of the library that contains the program that is to be loaded. If the procedure does not contain a library statement, the program that is to be loaded must be located in the system library.

Library name: Specify the name of the System/36 library that contains the procedure specified for the previous prompt.

Type of file to be created: Specify whether you want MSRJE to create a sequential file (S, the default), a direct file (D), or an indexed file (I).

Save the file in case of error?: Specify whether you want the data written to the file to be saved if an error occurs before the file is closed. Y (Yes), the default, specifies that if an error occurs before all data has been written to the file, the system will save the data already written to the file. N (No) specifies that the data already written will be lost if an error occurs before the file has been closed.

Note: *If you wish to add data to an existing file (see the next prompt), you should specify Y for this prompt. If you specify N and an error occurs, the entire file, including the data previously in the file, is deleted.*

Add output to an existing file?: Specify whether you want the punch data received for this entry to be added to an existing disk data file. Y (Yes) specifies that you want the data added to file xxxxxx00, where xxxxxx is the value specified for the **Name of the file to be created** prompt. N (No), the default, specifies that you want a new file created, and that file will be named xxxxxxnn, where xxxxxx is the value specified for the **Name of the file to be created** prompt, and nn is the punch file sequence number.

If you specify Y and a file by the specified name cannot be found, a new file will be created using that name.

Notes:

1. *Only one device can use the file at one time.*

2. *If you specify yes to this prompt and specified no to prompt 7, **Keep host data sets together** on the MSRJE Printer/Punch Attributes display (display 36.0), the yes on this prompt will override the no on display 36.0.*

Free unused file blocks?: Specify whether blocks that are not used by the file can be released for use by other files. Specify Y (Yes), the default, or N (No).

Specify N (No) if the disk file will be located on a remote system. Unused file blocks cannot be released on remote systems.

```
                    MSRJE CONTROL TABLE UTILITY                    FORMFILE
                                                                   RESFORM8
                 Create an MSRJE forms control table punch entry
                                                                 Optional-*

   Number of blocks to be reserved . . . . . . . . . . 1-560872     60

   Number of blocks to extend the file . . . . . . . . 0-560872     10

   Preferred disk location . . . . . . A1,A2,A3,A4,block number  A1        *

   Record length in bytes . . . . . . . . . . . . . . . 1-4096      80

   Delete capable file? . . . . . . . . . . . . . . . . . . . N,Y   N




   Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

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```

Number of blocks to be reserved: Specify, in decimal, the number of blocks that are to be initially allocated for this file. Any number from 1 to 560872 is valid, but the specification cannot exceed the amount of available disk storage. The default is 60 blocks.

Number of blocks to extend the file: Specify the number of blocks by which the file should be enlarged if the file becomes full. If 0 is specified, the file cannot be extended (enlarged). Any decimal value from 0 to 560872 can be specified; the default is 10.

Preferred disk location: Specify either the disk on which you want the file placed or the block number at which the file should begin. The file is placed on the:

- First disk if you specify A1, the default

- Second disk if you specify A2

- Third disk if you specify A3

- Fourth disk if you specify A4

A1, A2, A3, and A4 are only preferred locations. If the disk you specify is full or does not exist, the file is placed wherever there is room.

A block number can be any 6-digit number less than 560872. Your file is placed at the block location you specify only if that location is available.

Record length in bytes: Specify the size of the records that are to be written to the file. MSRJE always receives 80-character records. If the value you specify for the **Record length in bytes** prompt is not 80, MSRJE restructures the data into records of the size you specify. For example, if you specify 60 for the **Record length in bytes** prompt, three 80-character records received by MSRJE will be written to the file you are defining as four 60-character records. If you specify 160 for the **Record length in bytes** prompt, every two 80-character records received by MSRJE will be written to the file you are defining as one 160-character record.

Normally, the record length for a punch file is 80 or 96 bytes. The default record length for punch data directed to a data file is 80 bytes.

Delete capable file? Specify whether the file being created is to be a delete-capable file. Y specifies that it is; N, the default, specifies that it is not delete-capable.

If you specified a file type of S (sequential) or D (direct) for the **Type of file to be created** prompt, this completes your definition. The entry menu is displayed. If you specified a file type of I (indexed), you must complete one more display.

```
                          MSRJE CONTROL TABLE UTILITY               FORMFILE
                                                                    RESFORM8
                    Create an MSRJE forms control table punch entry


Starting position of the key . . . . . . . . . . . . . .  1-4096      1

Length of the key  . . . . . . . . . . . . . . . . . . . 1-120       1

Allow duplicate keys?  . . . . . . . . . . . . . . . . . . N,Y       N










    Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                       (c)  1983 IBM Corp.
```

Starting position of the key: Specify the first position of the key within the record, which can be any value from 1 through 4096. The default is 1.

Length of the key: Specify the number of bytes in the key. Any value from 1 through 120 is valid. The default is 1.

*Note: The value specified for **Starting position of the key** plus the value specified for **Length of the key** minus 1 must be less than or equal to the defined record length.*

Allow duplicate keys?: Specify whether more than one record can have the same key value within the file. N (No) the default, specifies that duplicate keys are not allowed. Y (Yes) specifies that duplicate keys are allowed.

If N is specified, duplicate key errors may occur since the host system can send duplicate header or trailer records to System/36.

This completes the definition for a punch entry with output to a compressed disk file for a disk file. The entry menu is displayed.

Punch Default Entry

One punch default entry is defined for each control table. This entry will be used if there is no entry in the active control table that matches the received host forms name. Whenever you create a new table (option 1 on the main menu), the control table utility automatically inserts a punch default entry in that file. Therefore, you cannot create or add a punch default entry, but can update the existing entry. When you enter the **Table entry name**, or leave it blank, on the entry menu, a message is displayed telling you that the entry exists. Press the Enter key to update the entry.

Updating a punch default entry is the same as updating a punch entry with data file output or a punch entry with compressed disk output, except that option 4 (Punch default entry) must be specified on the entry menu.

You can remove a punch default entry that you have updated. The control table automatically replaces the removed entry with the original entry containing the values supplied by IBM.

The default values supplied by IBM are shown in Appendix D.

Chapter 6. MSRJE Disk File Utility

The MSRJE disk file utility (RJFILE) allows you to convert punch data that MSRJE wrote to a compressed disk file (a file with 256-byte unprocessed records) to files that you define. You can also use RJFILE to convert print files that MSRJE wrote to a compressed disk file or to send print data to files that you define.

The disk file utility requires the following:

- Disk files containing 256-byte unprocessed records as created by MSRJE.

- Utility control statements.

- A forms control table to control the output of RJFILE (optional).

Disk File Input to the Disk File Utility

Input to the disk file utility can be:

- Punch files, created by an MSRJE session, that contain 256-byte unprocessed records. These files can be converted to disk data files using RJFILE.

- Print files, created by an MSRJE session, that contain 256-byte unprocessed records. These files can be printed or converted to a disk data file using RJFILE.

A single file can contain both print and punch data.

Starting the Disk File Utility

The MSRJE disk file utility can be run by either entering the RJFILE procedure command or by entering the OCL statements needed by the utility.

Using the RJFILE Procedure Command

The RJFILE procedure command is used to start the MSRJE disk file utility. The format of the procedure command is:

```
RJFILE filename[,control-table-name]
```

filename: Specifies the name of the disk file that is to be converted or printed using RJFILE.

If the **filename** parameter is not specified, you will be prompted for the input file name. If the RJFILE procedure is entered from the job queue, the **filename** parameter must be specified on the procedure command. If it is not, a message is displayed at the system console, and the job canceled.

control-table-name: Specifies the name of the control table that RJFILE is to use to control the conversion or printing. The control table named must have been created using the control table utility. The control table utility is described in Chapter 5.

If you do not specify the **control-table-name** parameter, the disk file utility uses the default values for print or punch data as described in Appendix D.

Using OCL Statements to Run the Disk File Utility

If you prefer, you can enter OCL statements to run the MSRJE disk file utility. The following statements are needed:

```
// LOAD #RJFILE
// RUN
// COPYFILE NAME-filename[,DATE-date][,CTNAME-name]
// END
```

The COPYFILE statement specifies the file that is to be used as input to the utility and specifies the name of the file that contains the control table to be used by the RJFILE procedure. The parameters are:

NAME: Specifies the name of the file created by MSRJE that is to be used as input to the disk file utility.

DATE: Specifies the creation date of the file to be used as input. The date must be entered in the system date format. If no date is entered, the named file with the latest creation date is used.

CTNAME: Specifies the name of the file that contains the control table, as created by the MSRJE control table utility, that is to be used to control creating a disk file from punch data or printing print data. If the CTNAME parameter is not specified, the disk file utility uses the IBM-supplied default values for print or punch data, as described in Appendix D.

You can enter as many COPYFILE statements as needed to process your input files. All COPYFILE statements must be placed before the END statement. User-written procedures can also specify multiple COPYFILE statements.

Chapter 7. Defining MSRJE to a BSC Host System

This chapter contains information that is needed by the host system programmer to properly configure a communications network that includes System/36 running MSRJE. The information given here is intended to point out those items that are needed to support MSRJE; it is not intended to be a reference document for configuring a host system. Changes to the parameters and their default values sometimes occur between releases. Therefore, the information given here may not exactly reflect the host subsystem release with which you are operating.

System Components

When MSRJE is used with a BSC data link, System/36 is the remote station in the communications network and initiates communications with the host system by sending a logon/signon sequence. Communications can be over a point-to-point switched or leased line.

BSC MSRJE supports communications with the following host subsystems:

- OS/VS2 Job Entry Subsystem 2 (JES2)

- OS/VS2 Job Entry Subsystem 3 (JES3)

- OS/VS1 Remote Entry Services (RES)

- VM/370 Remote Spooling Communications Subsystem (RSCS)

MSRJE with a BSC data link requires the following components on the host system:

- 270x or 37xx Communications Controller and Network Control Program (NCP).

- Appropriate communications access method (depending on the host subsystem).

- An operating system (OS/VS1 or OS/VS2 (MVS or VM/370)).

The relationship of these components to each other is shown in Figure 7-1.

270x

or

MVS **37xx** **System/36**

```
OS/VS2   J
         E    NCP/EP    MSRJE
         S
         2
```

or

37xx

NCP/PEP
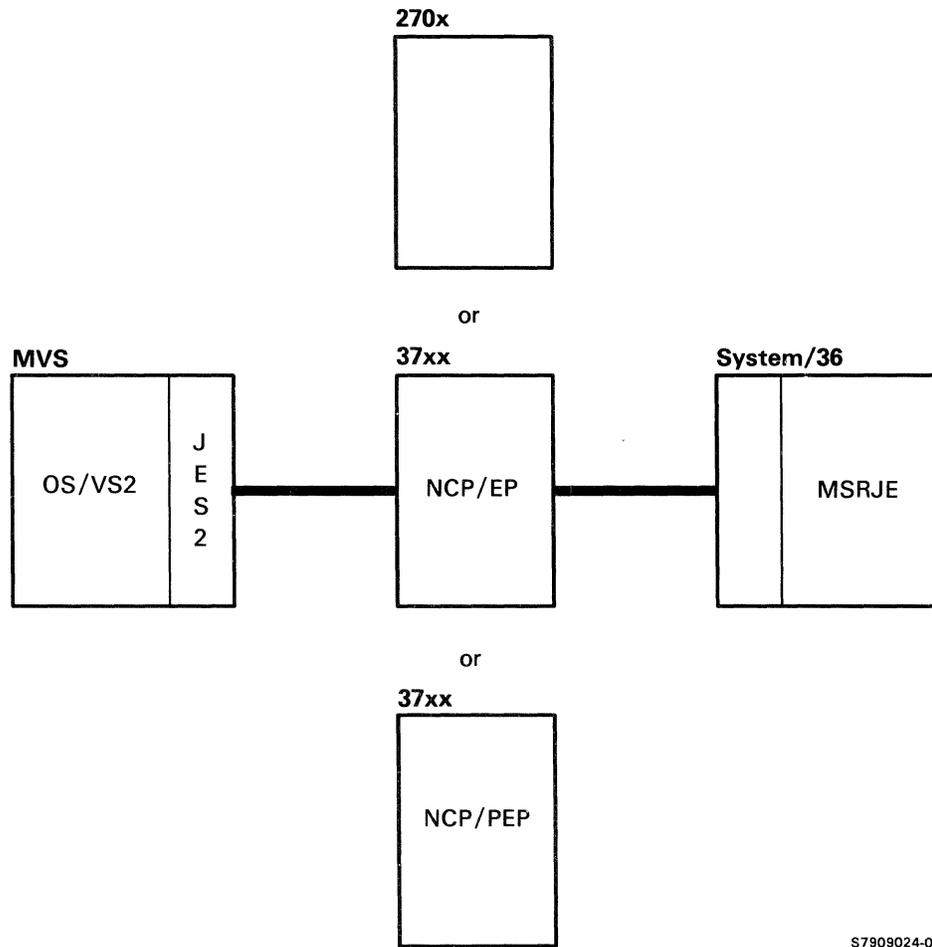
S7909024-0

Figure   7-1 (Part 1 of 4).   BSC Components

270x

```
┌─────────────┐
│             │
│             │
│             │
│             │
│             │
│             │
│             │
└─────────────┘
```

or

MVS   **37xx**   **System/36**

```
┌──────────┬──┐        ┌─────────────┐        ┌──┬──────────┐
│          │ J│        │             │        │  │          │
│          │ E│        │             │        │  │          │
│ OS/VS2   │ S│════════│   NCP/EP    │════════│  │  MSRJE   │
│          │ 3│        │             │        │  │          │
│          │  │        │             │        │  │          │
└──────────┴──┘        └─────────────┘        └──┴──────────┘
```

or

37xx

```
┌─────────────┐
│             │
│             │
│  NCP/PEP    │
│             │
│             │
└─────────────┘
```
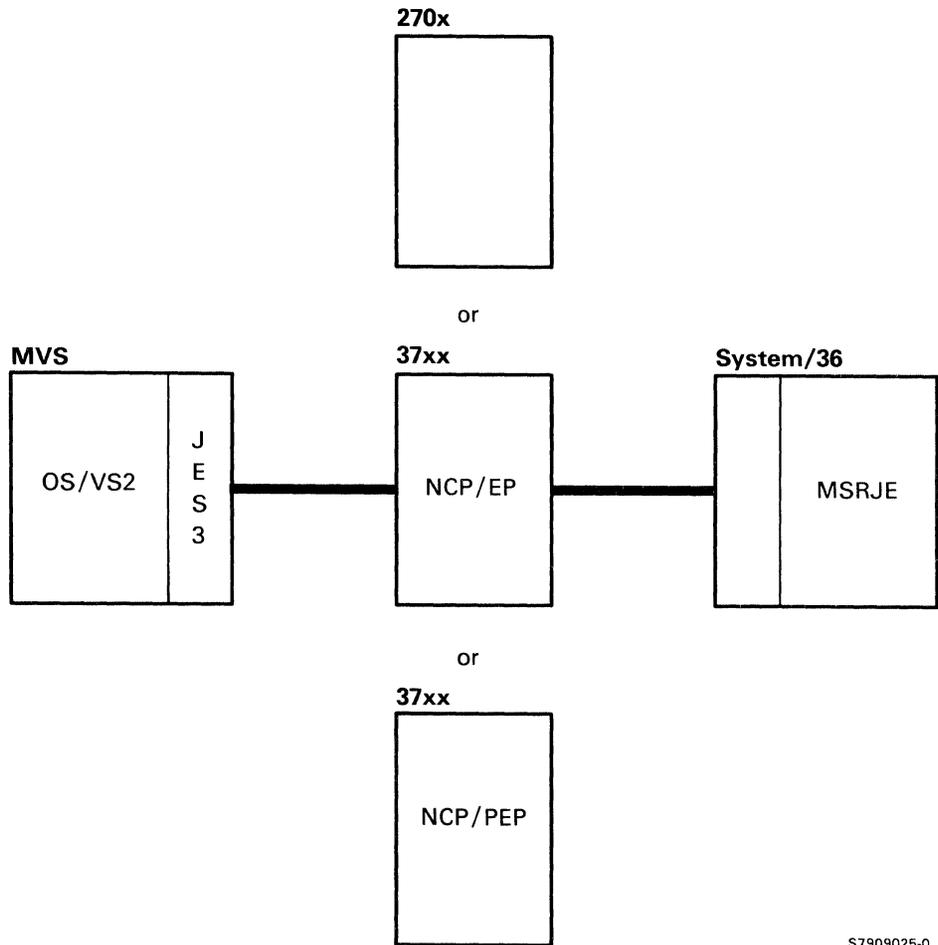
S7909025-0

Figure 7-1 (Part 2 of 4). BSC Components

270x

or

RES   **37xx**   **System/36**

OS/VS1 | R T A M   NCP/EP   MSRJE

or

37xx

NCP/PEP
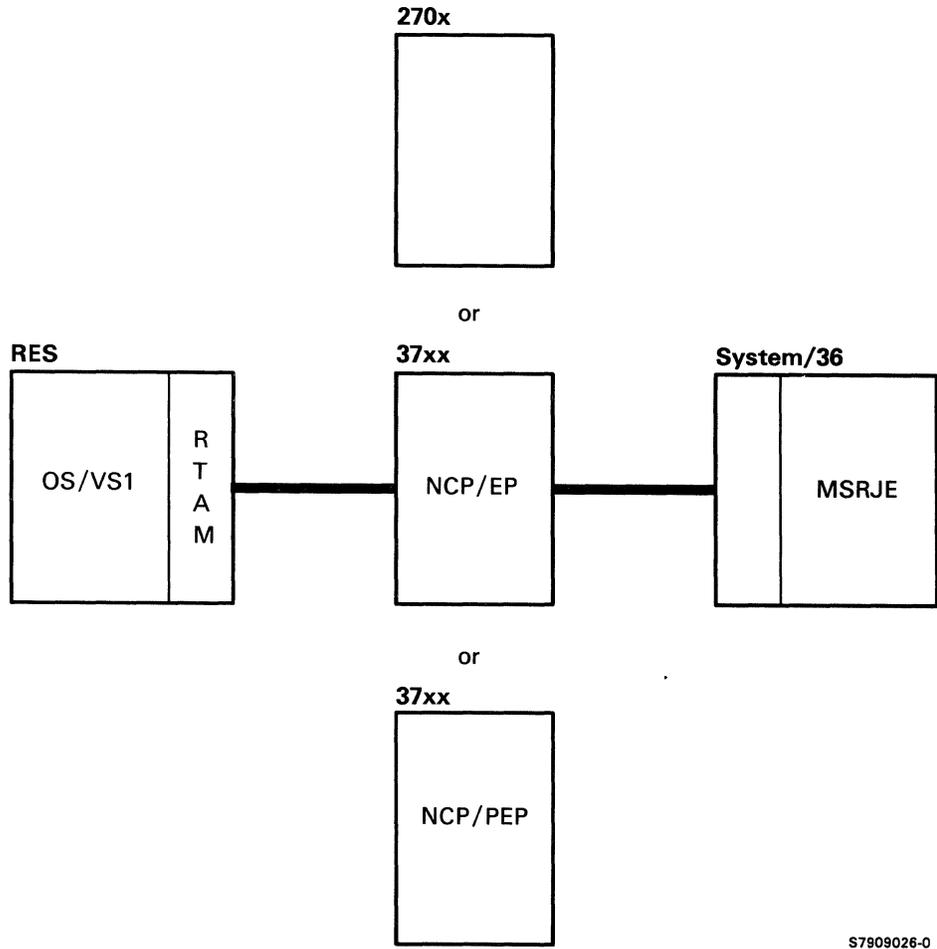
S7909026-0

Figure   7-1 (Part 3 of 4).   BSC Components

270x

or

37xx **System/36**

| VM/370 | R S C S | | NCP/EP | | MSRJE |

or

37xx

NCP/PEP
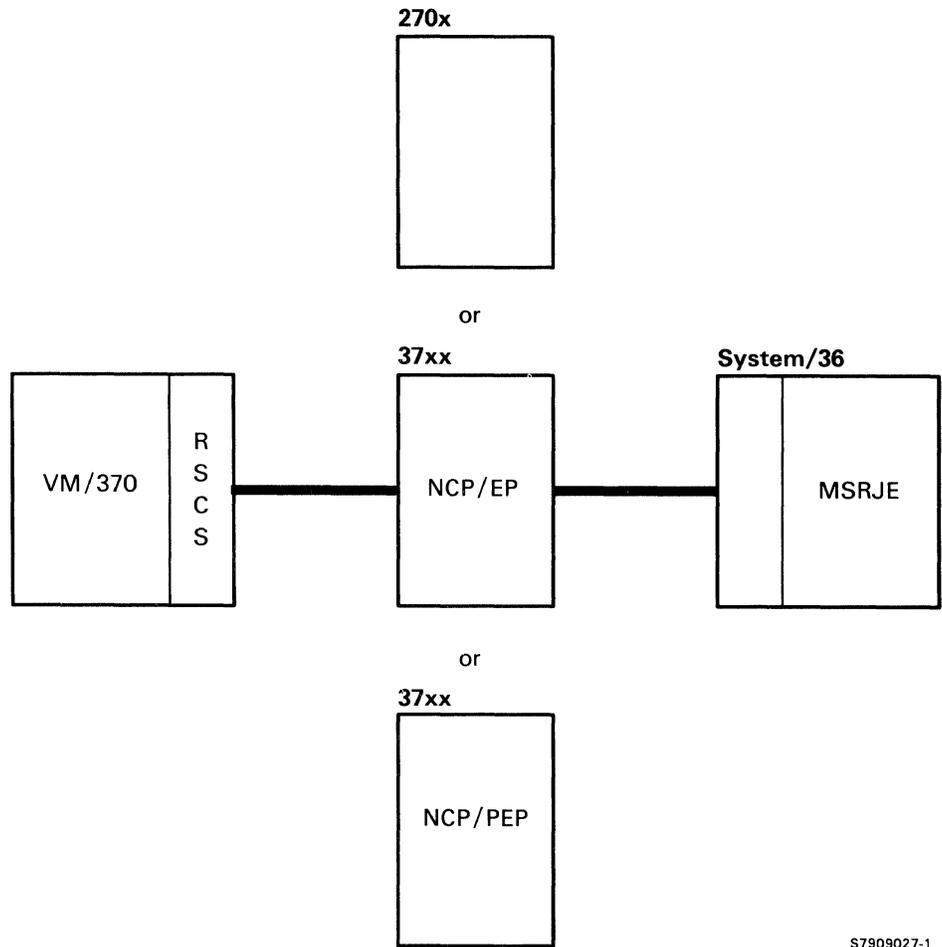
S7909027-1

Figure 7-1 (Part 4 of 4). BSC Components

Communications Controller and the NCP

The IBM 37xx Communications Controllers provide communications control by means of the Network Control Program (NCP). A communications controller and its NCP support a variety of remote terminals attached to the controller. The NCP is generated from a series of user-specified macroinstructions. An NCP can be generated to handle lines in either network control mode, or emulation mode, or both. An NCP that is generated with both kinds of functions is called an NCP with the Partitioned Emulation Programming (PEP) extension.

Remote Terminal Access Method (RTAM), JES2, and JES3 use the facilities of the NCP to control lines and devices attached to the controllers, to transmit and receive data, and to perform error recovery. Virtual Telecommunications Access Methods (VTAM) executes macroinstructions to direct the acquisition, reading, writing and checking of data from the terminals to which it is connected.

For additional information on the communications controllers and the NCP, see the *Introduction to the IBM 3704 and 3705 Communications Controllers*.

Communications Access Methods

RTAM

RTAM is a communications access method used by RES for BSC operations. All work stations, communications line, and transmission code dependencies are resolved by RTAM.

RTAM is started on a communications line basis rather than on a work station basis. To initiate processing, the central operator issues a START RTAM command, which, in turn, starts one or more communications lines. Additional lines can be started later by entering a MODIFY command specifying lines that were previously allocated to RTAM. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with RES through a LOGON procedure that identifies the particular work stations or work station user.

JES2

The Remote Job Entry (RJE) facility of JES2 allows remote work stations to use the Job Entry Subsystem. To initiate processing, the system operator starts one or more lines by entering the $S Start command. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with JES2 through a SIGNON procedure that identifies the particular work station or work station user. JES2 uses RTAM to provide an interface between JES2 and the remote work station.

JES3

JES3 uses RTAM to provide an interface between JES3 and the remote work station. RTAM provides blocking/deblocking, compression/decompression, and synchronization with the remote terminal. To initiate processing, the system operator enters a *START LINE command. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with JES3 through a SIGNON procedure that identifies the work station or work station user.

VM/370 RSCS

The SML (Spool MULTILEAVING) line driver operates as a task under the RSCS component of VM/370, and provides VM/370 with the support for the MULTILEAVING binary synchronous communications line protocol for programmable remote work stations.

The SML line driver, when communicating with System/36 MSRJE, functions in a host mode. In host mode, SML follows a common protocol for all remote work stations.

Notes:

1. *Forms control buffer images are ignored.*

2. *RSCS does not support sending forms mount messages for punches. Therefore, default entries in the forms control table are used.*

JES2 Host System Generation

When JES2 is started, a series of initialization parameters are processed to determine the configuration options to be used. Initialization parameters that are required for System/36 RJE work stations can be characterized as: (1) system-wide initialization values and (2) remote work station definitions.

JES2 System-Wide Initialization Parameters

The following JES2 system-wide initialization parameters are used to define BSC work stations running RJE. For a complete description of JES2 initialization parameters, see the manual *OS/VS2 MVS System Programming Library: Initialization and Tuning*.

&MLBFSIZ=nnnn (MULTILEAVING Buffer Size): Specifies the size, in bytes, of each JES2 MULTILEAVING buffer. The value specified must match the value specified for the prompt **Buffer length** on display 11.0 during line member configuration at System/36.

Default: 400

&NUMBUF=nnnn (JES I/O Buffer Count): Specifies the number (15 through 2000) of I/O buffers to be included in the JES2 load module. Refer to *OS/VS2 MVS System Programming Library: Initialization and Tuning* for information on calculating this value.

&NUMCMBS=nnnn (Number of JES2 Console Message Buffers): Specifies the number (3 through 999) of console message buffers to be provided for JES2. When RJE is used, more buffers are usually needed; this is especially true with console support for MULTILEAVING terminals. Specifying too few message buffers can cause serious performance degradation.

During periods of high console activity when no message buffers are available, certain noncritical JES2 messages are discarded.

For a MULTILEAVING terminal console, if more messages are queued than the number of buffers specified in this parameter, excess messages are spooled and printed later.

Default: 15

&NUMJOES=nnnn (Number of Job Output Elements): Specifies the number of job output elements to be generated. One job output element is required for each:

- Unique punch or print class that appears in a job that is queued for output.

- Active printer or punch.

- Interrupted or restarted job that is not currently active on printer or punch.

- Unique combination of forms ID, USCID, and FCB ID for all jobs currently queued for output.

- Job that was interrupted by a system failure while being printed or punched and has not yet been warm started on an output device.

Specifying too small a value results in jobs waiting for in-storage queuing in order to complete active print or punch work. For performance, you should specify a number slightly larger than the total of the above elements.

Default: 10 times the total number of local and remote printers and punches.

&NUMLNES=nnnn (Number of Teleprocessing Lines): Specifies the maximum number of LINEnnn initialization parameters that can be specified. This value includes the number of lines defined either as BSC MULTILEAVING lines or as logical lines for SNA.

Default: 0

&NUMRJE=nnnn (Number of Remote Terminal Definitions): Specifies the number (0 through 255) of remote terminal definitions (RMTnnn). This value should correspond to the highest number used as an RMTnnn initialization parameter.

Default: The value specified for the &NUMLNES parameter.

&PRTRANS=YES/NO (Print Line Translation Option): Specifies whether to translate lines of print directed to remote printers. If the default value (yes) is used, each line to be printed is translated by changing:

- Lowercase to uppercase

- Characters that are invalid on a print train to blanks

If any print train on a remote printer has characters not equivalent to those on a train, NO must be specified.

In BSC, if the remote printer is on a nontransparent line, translation occurs regardless of the value specified for &PRTRANS.

Default: YES.

&SPOLMSG=nnn (Remote Terminal Spool Message Record Count): Specifies the number (0 through 254) of physical records to be reserved for operator messages and JES2 messages for each JES2 remote terminal.

Default: (4096/&BUFSIZE) x 6 if &NUMLNES is not 0;
0 if &NUMLNES is 0.

&TPBFSIZ=nnnn (Teleprocessing Buffer Size): Specifies the largest telecommunications buffer size in bytes required for any remote work station. During initialization, JES2 adjusts the &TPBFSIZ value to equal the &MLBFSIZ.

Default: 400

&TPIDCT=nnn (Remote Printer Separator Page Line Count): Specifies the number (0 through 255) of print lines that are to appear on each JES2 job output separator page for remote terminal printers. If the specification is 30 or greater, the first 29 lines are used to produce a block-lettered job name, job number, and SYSOUT class.

Default: 6

&WAITIME=nn (Remote Terminal Function Interval): Specifies the length of time in seconds (1 through 30) JES2 waits after processing an input stream or output stream to allow entry of commands or jobs by the MSRJE operator.

Default: 1

Remote Work Station Definitions for BSC MULTILEAVING

JES2 remote work station definitions for BSC MULTILEAVING consist of a series of LINEnnn, RMTnnn, Rnnn.PRm, Rnnn.PUm, and Rnnn.RDm parameters.

LINEnnn (Line Definition)

The **LINEnnn** parameter defines the characteristics of one telecommunications line to be used during remote job entry. This parameter must be specified for each line.

nnn specifies an identification number for the line. All lines must have a unique number in the range 1 through 255 that is equal to or less than the value specified for &NUMLNES. Do not use leading zeros for nnn.

The following LINEnnn subparameters are used in defining BSC MULTILEAVING work stations.

HISPEED/LOWSPEED: Specify LOWSPEED (less than or equal to 9600 bits per second).

Default: LOWSPEED, which specifies that this is a low-speed line (less than or equal to 9600 bits per second).

PASSWORD=ccccccccc: Specifies a security password to prevent unauthorized work stations from using this line. The value specified (1 through 8 alphameric characters) must match the entry made for the **password1** parameter of the SIGNON command on display 35.0 during MSRJE subsystem configuration at System/36.

Default: No password.

TRANSP/NOTRANSP: Specifies whether transparent data is to be transmitted (any 8-bit character).

Default: NOTRANSP, which specifies that the text transparency feature of the BSC adapter is not present on this line.

USASCII/EBCDIC: You must specify EBCDIC.

Default: EBCDIC, which specifies that the BSC adapter is configured for EBCDIC line control characters.

The **RMTnnn** parameter specifies the characteristics of one remote work station. One RMTnnn parameter is required for each work station.

nnn specifies an identification number for the work station. Work stations are numbered consecutively from 1 through 255. Do not use leading zeros for nnn. The highest value specified for nnn must match the value specified for &NUMRJE.

The following subparameters of RMTnnn are used in defining BSC MULTILEAVING work stations.

SYSTEM36: Specifies that this remote work station is a System/36. This subparameter is required for the System/36 to handle job names correctly.

MSG150/NOMSG150: MSG150 specifies that a $HASP150 message is sent to the host. This subparameter is required for the System/36 to handle job names correctly.

CONSOLE/NOCON: CONSOLE specifies that this work station has an operator console or that it is simulating a console.

Because System/36 supports a console, specify CONSOLE.

Default: NOCON, which specifies that this work station has no operator console.

DISCINTV=nnnn: Specify DISCINTV=0 (a 0 specifies this work station is not to be disconnected if there is no text transmission in either direction).

Default: 0, which specifies that this terminal is not to be disconnected.

FIXED/VARIABLE Specify VARIABLE (variable data record length).

Default: VARIABLE.

MULTI/HARDWARE: MULTI specifies that this terminal will use the BSC MULTILEAVING interfaces. If MULTI is specified, the terminal type must specify MULTILEAVING work stations. Specify MULTI.

Default: HARDWARE, which specifies that this terminal will not use the BSC MULTILEAVING interfaces.

NUMPR=n: Specifies the number of printers at this remote terminal. Specify from 0 through 7 for System/36. The value specified here should not be greater than the value entered for the prompt **Maximum number of printers** on display 36.0 during MSRJE subsystem configuration at System/36.

Default: 1

NUMPU=n: Specifies the number of punch devices at this remote terminal. Specify from 0 through 7 for System/36. The value specified here should not be greater than the value entered for the prompt **Maximum number of punches** on display 36.0 during MSRJE subsystem configuration at System/36.

Default: 0

Note: The total number of printers (NUMPR) and punches (NUMPU) cannot exceed 8.

NUMRD=n: Specifies the number of readers at this remote terminal. Specify from 1 through 7 for System/36. This value must be at least as large as the value entered for the prompt **Maximum number of host readers** on display 37.0 during MSRJE subsystem configuration at System/36.

Default: 1

PASSWORD=ccccccccc: Specifies a security password (1 through 8 alphameric characters) to prevent unauthorized terminals from using this remote terminal's resources. If used, this entry must match the entry made for the **password2** parameter of the SIGNON command on display 35.0 during MSRJE subsystem configuration at System/36.

Default: No password.

ROUTECDE=nnn: Specifies the route code to be assigned to this terminal and its associated printers, punches, and readers. The value of nnn may be any number from 1 through the value of &NUMRJE.

Default: If a route code is not specified, JES2 assigns the number of this terminal (RMTnnn) as its route code.

SETUPINF/SETUPACT: SETUPINF specifies that operator setup messages issued at the local (CPU) console for this remote device are to be informational messages (they do not require an operator action to be deleted from a display console). Specify SETUPINF for System/36.

Default: SETUPACT, which specifies that operator setup messages issued at the local console for this remote device are flagged as action messages (requiring a operator action to be deleted from a display console).

TRANSP/NOTRANSP: TRANSP specifies that this terminal has the text transparency feature. To be effective, the TRANSP subparameter must also be specified for the line (LINEnnn initialization parameter) being used. Specify TRANSP here only if the prompt **Transparency?** on display 37.0 during MSRJE subsystem configuration at System/36 was responded to with **Y** (Yes).

Default: NOTRANSP, which specifies that this terminal does not have the text transparency feature.

The **Rnnn.PRm** parameter specifies the characteristics of one printer at a remote work station.

nnn specifies the number of the work station as specified in an RMTnnn initialization parameter. This associates the printer with this work station.

m specifies the number of this printer.

The number of printers defined using the Rnnn.PRm parameter must match the number of printers specified for the **NUMPR** subparameter of the **RMTnnn** parameter.

The following subparameters further define the remote work station printer.

AUTO/OPERATOR: AUTO specifies that this printer is to operate initially in automatic (demand) forms mode when JES2 starts processing. Specify AUTO for System/36.

Default: OPERATOR which specifies that this printer is to operate initially in operator controlled (forms) mode.

The mode may be modified from the remote terminal via the JES2 $T set command.

CKPTLNS=nnnnn: Specifies the maximum number of lines (0 through 32767) in a page. The size of a logical page is also defined as the number of lines printed until:

- A channel skip is encountered.

- The line count specified by &LINECT, the /*JOBPARM control statement, or the JOB statement accounting field has been exceeded.

If CKPTLNS is 0, a logical page is defined only by the preceding items.

If the line count does not equal 0, setting CKPTLNS to a value greater than line count results in the line count being used as the definition of a logical page; it overrides CKPTLNS.

CKPTLNS, in conjunction with CKPTPGS, is used to specify the checkpoint interval for data sets having a line count of 0 and no channel skips.

Default: 0

CKPTPGS=nnnnn: Specifies the number of logical pages (1 through 32767) to be printed before each checkpoint is taken.

The CKPTPGS and CKPTLNS parameters determine the number of logical records sent to the remote before a checkpoint is taken. The number of records sent equals CKPTPGS times CKPTLNS. The checkpoint is not taken until JES2 receives acknowledgement that the remote terminal successfully received the data.

Default: 1

CLASS=c1...cn: Specifies the output classes, in priority sequence, to be processed initially by this printer. You can specify any number of classes (A through Z and 0 through 9) up to the maximum number of classes specified by the &NUMCLAS parameter.

Default: AJ (where A and J are classes assigned to this printer).

DRAIN/START DRAIN specifies that this printer is to be started by operator command. START, which specifies that the printer is to be started automatically when JES2 starts processing, should be specified for System/36.

Default: START.

FORMS=cccc: Specifies the forms identifier of the forms that are assumed to be initially loaded in this printer (1 through 4 alphameric characters).

Default: If no value is specified, JES2 will use the forms identifier specified by the &STDFORM generation parameter.

LIMIT=(m-n,m-*): The LIMIT subparameter allows you to specify that output is to be selected for specific printers based upon the amount of the output (in records). The values m and n specify within what output size range (in records) a job output element (JOE) must fall to be processed by this printer. The integer m specifies the lower output size limit and n specifies the upper output size limit. The value of m must be less than the value of n. The maximum value that can be explicitly assigned to n is 999999 records. If * is specified, the upper limit is set to the default value of n (4294767295).

Default: m equals 0, and n equals 4294767295.

NOSEP/SEP: NOSEP specifies that separator pages are not to be provided initially between data set groups.

Default: SEP, which specifies that separator pages are to be provided initially between data set groups.

Note: *If 0 print lines were specified by the &TPIDCT parameter, separator pages will not be produced even if SEP is specified.*

PRWIDTH=nnn: Specifies the maximum number of characters to be printed on one line. Specify 198 only if you are using a forms control table entry with a printwheel ID which has a CPI=15, or if you are using a print image of CPI=15 when using a printer which supports a CPI=15. Specify 132 if you are not using a printwheel ID which has a CPI=15.

Default: 120

ROUTECDE=nnn: Specifies the route code (1 through 255) to be assigned to this printer. The route code specified may be that of any remote terminal defined to JES2 by the RMTnnn initialization parameter.

Default: JES2 assigns the route code of the remote terminal to which the printer is attached. (See the description of the RMTnnn parameter in this chapter for more information about the route code.)

Rnnn.PUm (Remote Card Punch Definition)

The **Rnnn.PUm** parameter specifies the characteristics of one punch at a remote work station.

nnn specifies the number of the work station as specified in an RMTnnn initialization parameter. This ties the punch to a work station.

m specifies the number of this punch.

The number of punches defined using the Rnnn.PRm parameter must match the number of punches specified for the **NUMPU** subparameter of the **RMTnnn** parameter.

The following subparameters are used to further define the remote card punch.

AUTO/OPERATOR: AUTO, which specifies that this punch is to operate initially in automatic (demand) forms mode when JES2 starts processing, should be specified for System/36.

Default: OPERATOR, which specifies that this punch is to operate initially in operator controlled (forms) mode. The mode may be modified from the remote terminal via the JES2 $T set command.

CKPTLNS=nnnnn: Specifies the maximum number of cards (0 through 32767) to be punched per logical page.

CKPTLNS is the only value used to define a logical page for punches.

Default: 100

CKPTPGS=nnnnn: Specifies the number of logical pages (1 through 32767) to be punched before each checkpoint is taken.

The CKPTPGS and CKPTLNS parameters determine the number of logical records sent to the remote before a checkpoint is taken. The number of records sent equals CKPTLNS times CKPTPGS. The checkpoint is not taken until JES2 receives acknowledgment that the remote successfully received the data.

Default: 1

CLASS=c1...cn: Specifies the output classes, in priority sequence, to be processed initially by this punch. You can specify any number of classes (A through Z and 0 through 9) up to the maximum number of classes specified by the &NUMCLAS parameter.

Default: BK (where B and K are classes assigned to this remote punch).

DRAIN/START: DRAIN specifies that this punch is to be started by operator command. START, which should be specified for System/36, specifies that this punch (if it is ready) is to be started automatically when JES2 starts processing.

Default: START.

FORMS=cccc: Specifies the forms identifier of the forms that are assumed to be initially loaded in this punch (1 through 4 alphameric characters).

Default: JES2 will use the identifier specified by the &STDFORM generation parameter.

LIMIT=(m-n,m-*): The LIMIT subparameter allows you to specify that output is to be selected for specific punches based upon the amount of the output (in records). The values m and n specify within what output size range (in records) a job output element (JOE) must fall to be processed by this punch. The integer m specifies the lower output size limit and n specifies the upper output size limit. The value of m must be less than the value of n. The maximum value that can be explicitly assigned to n is 999999 records. If * is specified, the upper limit is set to the default value of n (4294767295).

Default: m equals 0, and n equals 4294767295.

NOSEP/SEP NOSEP specifies that separator cards are not to be provided initially between data set groups.

Default: SEP, which specifies that separator cards are to be provided initially between data set groups.

ROUTECDE=nnn: Specifies the route code (1 through 255) to be assigned to this punch. The route code specified may be that of any remote terminal defined to JES2 by the RMTnnn initialization parameter.

Default: JES2 assigns the route code of the remote terminal to which the punch is attached. (See the description of the RMTnnn parameter in this chapter for more information about the route code.)

Rnnn.RDm (Remote Card Reader Definition)

The **Rnnn.RDm** parameter specifies the characteristics of one logical reader at a remote work station. Specify one Rnnn.RDm parameter for each reader at the work station.

nnn specifies the number of a work station as specified in an RMTnnn parameter.

m specifies the number of this card reader.

The number of punches defined using the Rnnn.PRm parameter must match the number of readers specified for the **NUMRD** subparameter of the **RMTnnn** parameter.

The following subparameters further define the remote reader:

CLASS=c: Specifies the job class to be assigned to all jobs that are entered at this card reader and that do not specify a job class in the CLASS operand of their JOB statements. The value c can be any class A through Z and 0 through 9.

Default: A

DRAIN/START: DRAIN specifies that this card reader is to be started by operator command. START, which should be specified for System/36, specifies that this card reader is to start automatically when JES2 starts processing.

Default: START.

HOLD/NOHOLD: HOLD specifies that all jobs entered at this card reader are to be held after JCL conversion until they are released for execution by the operator.

Default: NOHOLD which specifies that jobs entered at this card reader are to be queued as usual.

MSGCLASS=c: Specifies the default message class to be assigned to jobs that are entered at this card reader and that do not specify a MSGCLASS operand in their JOB statements. The value c can be any class A through Z and 0 through 9.

Default: A

PRDEST=nnn: Specifies the printer destination for the printed output from all jobs that are entered at this card reader that do not have a ROUTE statement or DEST parameter.

Default: The route code (ROUTECDE) specified in the RMTnnn parameter for this remote terminal.

PRIOINC=nn: Specifies a number (0 through 15) to be added to the selection priority of each job entered at this card reader.

Default: 0

PRIOLIM=nn: Specifies the maximum priority level (0 through 15) that can be assigned to jobs entered at this card reader.

Default: 15

PRLCL/PRRMT: PRLCL specifies that the route code specified by PRDEST is that of a local printer.

Default: PRRMT, which specifies that the route code specified by PRDEST is that of a remote printer.

PUDEST=nnn: Specifies the card punch destination for the punched output from jobs entered at this card reader that do not have a ROUTE statement or a DEST parameter.

Default: The route code (ROUTECDE) specified in the RMTnnn parameter for this remote terminal.

PULCL/PURMT: PULCL specifies that the route code specified by PUDEST is that of a local card punch.

Default: PURMT, which specifies that the route code is that of a remote card punch.

In addition to the JES2 parameters, an NCP generation for the 37xx may be necessary. For additional information, refer to the NCP generation information in this chapter.

JES3 Host System Generation for BSC

Parameters specified on the following JES3 initialization statements effect JES3 BSC Remote Job Processing (RJP) execution and operation. For a complete description of JES3 generation, see the manual *OS/VS2 MVS System Programming Library: JES3*.

CONSOLE (RJP Operators Console)

Each terminal that requires real or simulated console support should be specified with a CONSOLE initialization statement. This statement is used to assign JES3 destination classes to that console. Only one console can be specified on each CONSOLE statement. The following parameters make up the CONSOLE statement:

JNAME=name: Specifies the name of the BSC RJP terminal. This name must match the name specified in the N parameter on a RJPTERM statement.

TYPE=RJP: Specifies that the console being defined is an RJP console.

DEST=destcode: Specifies one or a series of destination codes that represent message classes to be directed to this console.

The following are values which can be specified for destcode. They represent the 96 JES3 message categories:

ALL: Specifies that messages issued by the operator with the destination specified as ALL will be routed to all consoles regardless of what is specified in the DEST parameter of the CONSOLE statement unless DEST=NONE is specified.

ERR: Console receives messages concerning equipment failure as well as JES3 failsoft messages.

JES: Console receives general information messages pertaining to the operation of the global processor.

LOG: Console receives messages concerning active jobs, such as job started or job ended.

MN: Console receives all input and output messages. except security messages, providing that MLOG is specified in the HARDCOPY parameter of the CONSTD statement. This is in addition to the original source consoles or destination consoles which also receive the messages.

SEC: Console receives security messages.

TAP: Console receives messages which apply to the JES3 background utilities with JES3-controlled tape requirements, such as tape-to-print or card-to-tape.

TP: Console receives messages which apply to RJP teleprocessing equipment.

UR: Console receives messages which apply to the operation of JES3 controlled unit record equipment.

DALL D1 to D22: Console receives messages that apply to a user defined console configuration. Either all of the messages in this group may be selected for this console by specifying DALL, or specific classes in the group may be selected by specifying one or a subset from D1 through D22.

MALL M1 to M32: Console receives messages which are unique to an ASP main, JES3 local or JES3 global processor. Either all of the messages in this group may be selected for this console by specifying MALL, or specific classes in the group may be selected by specifying one or a subset from M1 to M32. The destination code is associated with a processor by the MDEST parameter in the MAINPROC statement.

SALL S1 to S32: Console receives messages which pertain to JES3 device set up. Either all of the messages in this group may be selected for this console by specifying SALL, or specific classes in the group may be selected by specifying one or a subset from S1 through S32. Setup messages regarding a specific device are associated with this console by indicating the destination code selected from this group in the JUNIT or XUNIT parameter on the DEVICE statement.

NONE: Console does not receive any messages. This destination code is not correlated to any message class.

OUTPUT: Console receives messages in all classes except MLG. This destination code is not correlated to any message class.

TOTAL: Console receives messages from all 96 message classes including MLG. This destination code is not correlated to any message class.

DEPTH=nnn: Specifies the maximum number of messages to be maintained in the buffers associated with a RJP console. The DEPTH may be from 1 to 255. When an RJP console is queued to depth, the queued messages are written to spool. To keep track of the status of console buffers, use the *INQUIRY operator command.

Default: 50

LL=nnn: Specifies the longest line length to be printed on this console. If the actual line to be written exceeds this length, the line is broken at a comma or a blank and continued on the next line.

Default: 120

LEVEL=nn: Specifies the authority level (0 through 15) for the JES3 console authority routine (IATUX18) to check for validity.

Default: 0

DEVICE (Device Definition)

The DEVICE statement defines those devices used by JES3 and those devices used by jobs running under JES3. Each uniquely addressable device (card reader, punch, local or remote console, or printer) attached to a global, local, or ASP main processor must be specified on a DEVICE statement if the default characteristics are not satisfactory. The default characteristics are provided by the RJPTERM initialization statement. Refer to the *OS/VS2 MVS System Programming Library: JES3* manual for the DEVICE statement parameter descriptions.

RJPLINE (Remote Job Processing Line)

The RJPLINE statement is necessary to define the characteristics of a single BSC line (and it's respective adapter) which will be used by the JES3 global processor for remote job processing. Additionally, this statement may assign a specific RJP work station, defined by the N parameter of an RJPTERM statement, to this line. One RJPLINE statement is required for every adapter to be accessed by RJP. The following parameters make up the RJPLINE statement:

N=linename: Specifies the name for this line. This name must not be the same as the name specified by the n parameter of an RJPWS or RJPTERM initialization statement.

A=adapter: Specifies the 3-character line adapter address associated with this line.

F=DIAL; F=NTRS: Used to indicate a dial feature for this line (DIAL) and/or the absence of a transparency feature for the line (NTRS). If both DIAL and NTRS are selected, both F parameters are specified, as F=DIAL and F=NTRS.

If the prompt **Transparency?** was responded to with a Y on display 37.0 during MSRJE subsystem member configuration at System/36, do not specify F=NTRS.

Default: Dedicated or leased line environment. Transparency feature assumed on terminals on this line.

G=grpname: Indicates a line group name of up to 8 characters, which associates several lines.

Default: 8 blanks.

I=B/A: B refers to the second interface of the BSC adapter. A refers to the first interface of the BSC adapter.

Default: A

I=Y/N: Y specifies the interrupt mode of operation. N specifies the noninterrupt mode of operation.

Default: Y

O=AUTO: Indicates the line option to have the RJP line start automatically; the *START operator command is not required.

Default: *START operator command is required.

P=password: Provides for password protection for this line. P indicates a line password of 1 to 8 alphameric characters. This password must be used by any work stations attempting to sign on to this line.

The value specified for the **password1** parameter in the host SIGNON command on display 35.0 during MSRJE subsystem member configuration at System/36 must match the value specified here.

Default: 8 blanks.

S=linespeed: Indicates a line baud rating up to 6 characters.

Default: 2400

T=termname: Indicates a terminal to be assigned to this line. If this parameter is included, the /*signon card must not be used. T specifies the name (up to 5 characters) of a nonprogrammable terminal. This name must also appear in the N parameter of an RJPTERM statement and NAME parameter of a CONSOLE statement. The T parameter must not be specified when F=DIAL is specified.

RJPTERM (BSC Remote Job Processing Terminal)

The RJPTERM statement defines a single remote BSC work station to the JES3 system. This statement causes a default description to be provided for each work station device (printer, punch, or card reader) indicated by the PR, PU, and RD parameters along with the operating characteristics of the work station. If the JES3 default characteristics for a remote printer or punch are not acceptable, a DEVICE statement should be coded to indicate desired characteristics. If a work station is to have the facilities of a JES3 operator console, then a CONSOLE statement must be coded.

N=name: Required to indicate the name for this work station. This name must be 5 characters and cannot be the same as an N parameter specified on an RJPLINE or RJPWS statement.

T=termtype: Specify S360 for System/36 MSRJE.

B=bufsiz: Indicates the terminal buffer size in bytes. The value specified here must match the value specified for the prompt **Buffer length** on display 11.0 during line member configuration at the System/36.

Default: 400

C=(R,S): Indicates the type of console support for this work station. If the C parameter is specified, a CONSOLE statement should be specified also.

> **R:** Applies to programmable terminals only. This subparameter indicates the presence of a real console.
>
> **S:** Applies to both programmable and nonprogrammable terminals. This subparameter specifies that regardless of any real console attached to this work station, the printer designated as pr1 is to be used as a simulated console output device.
>
> If S is specified for a programmable terminal that has a real console, that console can still be used to enter console commands. However, all console output will be directed to the printer.

Specify C=R for System/36.

Default: R

F=NTRS: Specifies that the terminal transparency feature is not present on this terminal. If you responded Y (yes) to the prompt **Transparency?** on display 37.0 during MSRJE subsystem member configuration at System/36, do not specify F=NTRS.

Default: Transparency is assumed.

PR=nn: Indicates the number of remote printers associated with this work station. The value range for nn is 0 through 7.

The value specified here should not be greater than the value entered in response to the prompt **Maximum number of printers** on display 36.0 during subsystem configuration at System/36.

Default: 0

PRW=recsize: Indicates the maximum print record size for the remote printer. Specify 198 only if you are using a forms control table entry with a printwheel ID which has a CPI=15, or if you are using a print image of CPI=15 when using a printer which supports a CPI=15. Specify 132 if you are not using a printwheel ID which has a CPI=15.

Default: 132

PU=nn: Indicates the number of remote punches associated with this work station. The value range for nn is 0 through 7.

The value specified here should not be greater than the value entered in response to the prompt **Maximum number of punches** on display 36.0 during subsystem configuration at System/36.

Default: 0

PUW=recsize: Indicates the maximum punch card record size for the remote punch device.

The value specified here (1 through 4096) should be 80 for System/36. The destination of punch and print output received by MSRJE at System/36 is controlled by a forms control table, as generated using the forms control table utility (see Chapter 5 for a description of forms control tables).

Default: 80

RD=nn: Indicates the maximum number of readers at this work station. The value range for nn is 1 through 7.

The value specified here should be at least as large as the value entered in response to the prompt **Maximum number of host readers** on display 37.0 during MSRJE subsystem member configuration at System/36.

Default: 0

P=password: Specifies the 1 through 8 alphameric character password of the terminal. The password must be used by any work station trying to sign on to JES3.

If a password is specified, it must match the value specified for the **password2** operand of the **DATA** parameter for the host signon specified on display 35.0 during MSRJE subsystem member configuration.

Default: 8 blanks.

CS=(Y,B,N): Y indicates that equal character compression only is requested for this terminal. B indicates that blank compression only is requested for this terminal. N indicates that no compression is requested.

Specify N for System/36.

RES Host System Generation

The creation of a VS1 system that supports BSC remote work stations requires two steps:

- A two-stage VS1 system generation with the options required to make the RTAM modules available in the VS1 system for the next step.

- A two-stage RTAM generation. This step assembles the desired RTAM facilities and link edits them into the VS1 system.

For a complete description of RES generation, see the *OS/VS1 RES System Programmer's Guide.*

VS1 System Generation Requirements

As part of a complete VS1 system generation, specify OPTIONS=REMOTE in the SCHEDULR macroinstruction to condition VS1 for the subsequent generation of RTAM. This causes the system to copy the necessary RTAM modules from the distribution libraries into the VS1 system libraries.

All BSC unit control blocks that describe the BSC line should be generated at this time since the communications controller uses those addresses.

Account Facility modules and RES modules are unconditionally copied during VS1 generation.

RTAM Generation

RTAM generation is a two-stage process that must be performed whenever a new VS1 release is installed.

Stage 1

Stage 1 is an assembly for which input consists of the following installation coded macroinstructions:

LINE: This is step 1 of stage 1. Specify one LINE macroinstruction for each BSC communication line. All LINE macroinstructions must appear first in the macro input, and they must be in ascending BSC line number sequence; that is, the first LINE macroinstruction must have the number 1, the second, number 2, and so on.

> **LINEID=n:** Specifies the number of this BSC line. The number must be an integer in the range 1 through 200. The LINEID of the first (or only) LINE macroinstruction must be 1, and every succeeding LINEID must be 1 greater than the LINEID preceding it.
>
> **LDESCR=(type,code):** Specifies the type of BSC line and the code to be transmitted.

For type, specify either of the following values:

- 0 for half duplex; 1200 through 9600 bits-per-second

- 1 for duplex; 1200 through 9600 bits-per-second

For code, specify either of the following:

- 0 for EBCDIC; no transparency

- 1 for EBCDIC; transparency

AUTOLOG=YES/NO: If you want the remote terminal to be automatically logged off if this BSC line goes down (intervention is required), specify AUTOLOG=YES. After the system restarts the line, you may logon again. If you do not want automatic logoff, specify or default to AUTOLOG=NO. The work station remains logged on until a LOGOFF command is entered.

LEASED=YES/NO: Specifies whether the line being defined is switched (LEASED=NO) or nonswitched (LEASED=YES).

TERMINAL: This is a continuation of step 1 of stage 1. You must include the TERMINAL macroinstruction to associate an identification number with a work station and to specify the terminal device characteristics of the work stations. Specify at least one TERMINAL macro for each work station. The first TERMINAL macroinstruction must immediately follow the last LINE macroinstruction.

The following parameters define the terminal to RTAM.

TERMID=termid: Specifies the terminal number for this work station.

TDESCR=(w,t,d,f): Defines the characteristics of the remote work station. The parameters are:

w maximum print width, specify 3 (132 characters),
   or specify 5 (150 characters) if you are using a forms control table
   entry with CPI=15 or a print image which has a CPI=15 when using
   a printer which supports a CPI of 15
t terminal type, specify 4 (360/25 and up, including System/370)
d interface type, specify 4 (programmable interface)
f console support/transparency, specify 2 (console, no transparency)
   or 3 (console, transparency)

LNUM=n: Specifies the number of the BSC line with which this work station is to be associated.

RDRS=rd: Specifies the number of readers to be used at this work station. If this operand is omitted, one reader is assumed. The range of rd is 1 through 7.

The value specified here must at least as large as the value specified for the prompt **Maximum number of host readers** on display 37.0 during MSRJE subsystem member configuration at System/36.

PTRS=pr: Specifies the number of printers at this work station. If this operand is omitted, one printer is assumed. The range of pr is 0 through 7.

The value specified here must not be greater than the value specified for the prompt **Maximum number of printers** on display 36.0 during MSRJE subsystem member configuration at System/36.

PCHS=pu: Specifies whether a punch is at this work station. If this operand is omitted, one punch is assumed. The range of pu is 0 through 7.

The value specified here must not be greater than the value specified for the prompt **Maximum number of punches** on display 36.0 during MSRJE subsystem member configuration at System/36.

CNMSGNO=wtonum: Specifies the maximum number of WTO(R) buffers to be available for sending console messages to this work station.

TIMEOUT=n: Specifies the length of time, in minutes, that RTAM will handle timeouts from a work station defined as AUTOLOG=YES. 0 minutes indicates infinity.

CONPR=value: Specifies the printer to be used for console output if console support is not specified and more than one printer is specified. The number can be from 1 to the number of printers specified.

Default: CONPR=1.

RTAM Macro: This is step 2 of stage 1. The RTAM macroinstruction determines the internal characteristics of RTAM.

TPBUF=n: Specifies the number of teleprocessing buffers required for BSC work stations. If this operand is omitted, n is assumed to be the same as the number of communications lines that have been defined by LINE macroinstructions. It is recommended that the following formula be used to determine the number of buffers that should be specified:

$$n = x + y$$

where x is the total number of lines defined for RTAM usage, and y is the total number of BSC CPU (central processing unit) work stations defined for RTAM usage. System/36 is a BSC CPU work station.

TPBFSIZ=size: Specifies the size of each telecommunications buffer. The value entered here must equal the value entered for the prompt **Buffer length** on display 11.0 during line member configuration at System/36.

Default: 344

USASCII=YES/NO: If USASCII code has been specified for a BSC line, specify this operand as USASCII=YES; otherwise, the default (NO) applies. Specify NO for System/36.

TPREAD=readn: Specifies the total number of readers associated with the maximum number of work stations that can be logged on at one time. You can find this value by adding up the number of readers for all work stations that will be logged on at the same time. When a work station logs on, RTAM allocates resources for all job input readers (and also printers and punches). Therefore, if you specify too small a value for readn, a user might not be able to log on because of insufficient resources.

TPPRINT=printn: Specifies the maximum number of concurrent print operations. As recommended for TPREAD, you should specify a value for TPPRINT that is at least equal to the total number of printers at work stations allowed to log on at one time. You can find this value by adding up the number of printers for all work stations that will be logged on at the same time. Resources are allocated as discussed for TPREAD.

TPPUNCH=punchn: Specifies the maximum number of concurrent punch operations. As recommended for TPREAD and TPPRINT, you should specify a value for TPPUNCH that is at least equal to the total number of punches at work stations allowed to log on at one time. You can find this value by adding up the number of punches for all work stations that will be logged on at the same time. Resources are allocated as discussed for TPREAD.

MLBFSIZ=size: Specifies the size of the MULTILEAVING buffers, which are used by CPU work stations.

MXINTBR=mxintbr: Specifies the maximum size of any single interface buffer pool. It is recommended that you specify a value at least twice as large as TPBFSIZ to allow room for compressed records to be expanded.

With these macroinstructions, you provide the specifications that meet your particular requirements, and define the telecommunications network to be supported by RTAM (Stage 1). Stage 1 output is the input for stage 2.

Stage 2

Stage 2 consists of the execution of the job output from stage 1 including 26 assemblies and two link edits of the execution-time modules.

Example RES Generation

```
Date last changed 06/15/81
SCP level OS/VS1 - 7A
PTF level Put - 8106
Configuration supported
   Line      Line      Line      Line      Line
  Number    Speed     Type      Cntl      Mode
    1        2400      Swd       BSC       HDX/TRANS
    2        2400      Lsd       BSC       HDX/TRANS
   Term     Wrk/Sta   Line
  Number     Type     Cntl  --------------NOTES--------------
    1        CPU       BSC   CPU work stations (console support)
    2        CPU       BSC   CPU work stations (console support)
```

Line Description for BSC Lines

```
LINE   LINEID=1,              BSC line number
       LDESCR=(0,1),          half duplex/1200-9600 baud/trans
       LEASED=NO,             this is a switched line
       AUTOLOG=YES            force logoff if line goes down
```

Interface at half duplex 1200 through 9600 baud depending on the modem. This line is generated as switched. The user will be logged off if intervention is required.

```
LINE   LINEID=2,              BSC line number
       LDESCR=(0,1),          half duplex/1200-9600 baud/trans
       LEASED=YES,            this is a leased line
       AUTOLOG=YES            force logoff if line goes down
```

Interface at half duplex 1200 through 9600 baud depending on the modem. This line is generated as a leased (nonswitched) line. The user will be logged off if intervention is required.

Terminal Description for CPU-Type Work Stations

```
TERMINAL TERMID=1,            Work station terminal number
         TDESCR=(3,4,4,3),    Work station attributes
         PTRS=1,              Number of printers/work stations
         PCHS=1,              Number of punches/work stations
         RDRS=1,              Number of readers/work stations
         CNMSGNO=5,           Number of write to operator buffers
         TIMEOUT=2,           Restart line after 2 minutes if errors
         CONPR=1,             Use printer if no console support
TERMINAL TERMID=2,            Work station terminal number
         TDESCR=(3,4,4,3),    Work station attributes
         PTRS=1,              Number of printers/work stations
         PCHS=1,              Number of punches/work stations
         RDRS=1,              Number of readers/work stations
         CNMSGNO=5,           Number of write to operator buffers
         CONPR=1,             Use printer if no console support
```

RTAM Description For RES System Generation

```
RTAM   TPBUF=28,             Number of BSC teleprocessing buffers
       TPBFSIZ=512,          Size of BSC teleprocessing buffers
       USASCII=NO,           No USASCII for BSC
       TPREAD=6,             Total number of readers
       TPPRINT=6,            Total number of printers
       TPPUNCH=6,            Total number of punches
       MLBFSIZ=512,          CPU work stations buffer size
       WAITIME=3,            Wait time for non-CPU BSC work stations
       MXINTBR=1024,         Single interface buffer size
       MSGFCTR=25,           Write to operator increase factor
       STBUFNO=48,           Number of subtask buffers
       RMTOBJ=SYS1.RTAMOBJ,  Object library for RES generation
       HALFGEN=NO            No halfgen
```

3705 NCP/PEP Generation

The generation procedure for preparing a Network Control Program includes:

- A generation language by which network configuration and program options are specified.

- A library of macrodefinitions from which the specified source statements are expanded.

Generation Language

The generation language consists of macroinstructions that fall into four categories according to the type of parameters they define. The types of macros are:

- System macros

- Configuration macros

- Block handling macros

- A generation delimiter macro

System Macros

The system macros provide information pertaining to hardware features with which the communications controller is equipped, certain network control program options, and program generation information such as data set names.

Configuration Macros

The configuration macros provide the information necessary to construct the control tables needed by the network control program. These tables are used to control the flow of data between the 3705 and remote stations or other 3705s and the host system processor.

One group of these macros defines the characteristics of these elements in the network:

- Line groups

- Communications lines

- Cluster controllers

- Terminals

- Components of terminals

A macro is coded for each element in the network. The macros must be arranged in a specific order to associate a particular communications line with a particular line group, a particular station or a particular SNA physical unit. The rest of the configuration macros provide the following types of information:

- Information needed for data transfer between the communications access method and the network control program.

- Information describing the communications scanner(s) installed in the 3705.

- Definition of the remaining control tables necessary to control the network.

Block Handling Macros

The block handling macros apply to messages transmitted over binary synchronous communications lines.

Generation Delimiter Macro

The generation delimiter macro ends the program generation input stream.

When the programmer has coded the generation macros that describe the network to be controlled, he generates the control program using the generation procedure. The procedure is executed as a series of jobs in the host processor.

Example 3705 PEP Generation

```
PEP GENERATION FOR 3705-II
Date last changed 03/09/82
NCP level (NCP REL3)
PTF level PUT - 8201
Configuration supported                       LINE    LINE    TERM
    UCB      3705                              CNTL    NAME    USAGE
    SUBCHAN  LINE ADDR  USE      SPEED
    034      022        EP/LSD    2400   BSC   LSBSC1  RES/RTAM
    046      0A1        EP/SW     2400   BSC   SWBSC1  RES/RTAM
    046      0A1        EP/SW     2400   BSC   SWBSC1  RES/RTAM
```

The following shows an example of what you would write for a nonswitched line.

```
LSGRP1     GROUP  DIAL=NO,                    Group macrodefinition
                  LNCTL=BSC,
                  BUFSIZE=32,                  (default)
                  CODE=EBCDIC,                 (default)
                  TADDR=NONE,                  (default)
                  MODEM=OPTION2,               (default)
                  FEATURE=(NODUALCD),          (default)
                  INTPRI=1,                    (default)
                  CHNPRI=NORMAL,               (default)
                  DATARATE=HIGH,               (default)
                  QUIET=NO,                    (default)
                  DISABLE=NO,                  (default)
                  PAD=YES,                     (default)
                  TYPE=EP


LSBC1   LINE     ADDRESS=(022,34-0),          Line macrodefinition
                 SPEED=2400,
                 CLOCKING=EXT,
                 DUPLEX=HALF,
                 TERM=SYS3,
                 CU=2701,
                 USE=EP,
```

The following shows an example of what you would write for a switched line.

```
SWGRP1 GROUP   DIAL=YES,                      Group macrodefinition
               LNCTL=BSC,
               CODE=EBCDIC,                    (default)
               MODEM=OPTION2,                  (default)
               FEATURE=(NODUALCD),             (default)
               INTPRI=1,                       (default)
               CHNPRI=NORMAL,                  (default)
               DATARATE=HIGH,                  (default)
               RING=NO,                        (default)
               QUIET=NO,                       (default)
               DISABLE=NO,                     (default)
               PAD=YES,                        (default)
               TYPE=PEP


SWBSC1 LINE    ADDRESS=(0A1,46-0),           Line macrodefinition
               SPEED=2400,
               CLOCKING=EXT,
               DUPLEX=HALF,
               TERM=SYS3,
               CU=2701,
               USE=EP,
               RETRIES=(5,4,3),
```

RSCS Host System Generation

There are two different RSCS VM/370 programs for use with remote work stations: the RSCS component of VM/370 and the RSCS networking program product. The two look the same to the work station; however, the method for defining the work station at the host system is different for each. In this section, the RSCS component of VM/370 is referred to as *RSCS component*, and the RSCS networking program product is referred to as *RSCS networking*.

For complete information on VM/370 RSCS generation, see the *IBM Virtual Machine Facility/370: System Programmer's Guide.*

Note: Print lines longer than 132 characters are not supported unless you are using a forms control table entry which specifies a CPI=15, or a print image which has CPI=15 supported when you are using a printer which supports CPI=15.

Also, Forms Control Block Images are not supported by MSRJE.

Defining Work Stations to RSCS

To use a work station with RSCS, the work station's name must be defined to RSCS. To define the name, an entry must be made in either the AXSLINK COPY file for RSCS component or in the RSCS directory for RSCS networking. A work station can also be dynamically defined.

AXSLINK COPY File (RSCS Component)

The AXSLINK COPY file contains a record of all possible paths for transmission between the RSCS virtual machine and all the single, uniquely defined, remote work stations.

GENLINK Macro: The GENLINK macro defines the attributes of the link to the RSCS virtual machine and is similar to the LINK command in RSCS networking.

The following parameters of the GENLINK macro define the transmission path.

ID=linkid: Specifies, in 1 through 8 alphameric characters, the link identifier for the work station.

TYPE=DMTSML: Specifies that the spool MULTILEAVING (SML) line driver is to be used on the data link. If DMTSML is not specified, it must be specified when the link is activated using the START command.

Default: Undefined.

CLASS=c: Specifies the class of files that can be transmitted to the remote work station. One to four VM/370 spool classes can be specified and are in the range A through Z and 0 through 9. Files are transmitted in class order, left to right.

Default: *, all classes can be transmitted.

KEEP=holdslot: Specifies the number of RSCS virtual machine storage file tag slots to be reserved for exclusive use by the link. Specify any decimal number from 0 through 16.

Default: 2

LINE=vaddr: Specifies the RSCS virtual machine device address of a permanent telecommunications line port to be used for processing files on the link.

Default: Undefined.

TASK=taskname: Specifies a task name for use by the line driver program. From one to four alphameric names can be specified.

Default: Undefined.

RSCS Directory (RSCS Networking)

Each work station's operation must be specified using local (to the host system) definitions and options. A directory file with a file name of RSCS and a file type of direct is built for the use of RSCS networking.

The following statements are used to build the entries in the file. Note that RSCS networking also generates 16 null entries in the file so that work stations can be dynamically defined.

LINK Control Statement: Defines the attributes of a single RSCS link. Link attributes can be later changed using the START command parameters. The following parameters of the LINK statement define the link:

linkid: Specifies, in 1 through 8 alphameric characters, the link identifier for the work station.

DMTSML: Specifies the line driver to be used for communications on the link. If DMTSML is not specified, it must be specified in the START command.

Default: Undefined.

port: Specifies the RSCS virtual machine device address of a permanent telecommunications port to be used for communications on the link being defined. Valid RSCS addresses are hexadecimal characters from 02 through 6FF. If **port** is not defined, it must be specified on the START command.

Default: Undefined.

zone: Specifies the number of time zone boundaries between the work station and Greenwich time to the east. The international date line is included as a time zone boundary. Valid entries are 0 to 24, decimal.

Default: 0

task: Specifies a task name for use by the line driver program. Each RSCS task must have a unique name while it is active. One to four task names can be specified.

Default: The first 4 characters of the linkid.

class: Specifies the class of files that can be transmitted to the remote work station. One to four VM/370 spool classes can be specified and are in the range A through Z and 0 through 9. Files are transmitted in class order, left to right.

Default: *, all classes can be transmitted.

keep: Specifies the number of RSCS virtual machine storage file tag slots to be reserved for exclusive use by the link. Specify any decimal number from 0 to 16.

Default: 2

PARM Control Statement: Defines a default parameter string of arbitrary text information made available to the line driver when the link is activated by the START command. The string specified can be overridden by the Parm operand of the START command.

linkid: Specifies, in 1 through 8 alphameric characters, the identifier of the previously defined port on which the work station is connected, and to which the parameter string applies.

Mrn: Specifies an identification number assigned to the work station by the host. Valid entries are 00 through 99, decimal. The value specified here and the value specified for the REMOTEnn parameter of the /*SIGNON on display 35.0 during MSRJE subsystem member configuration must match.

Initiating the Connection

Starting an SML Line Driver (DMTSML)

Before a work station can sign on to SML, the appropriate task for that link must have been started during system start up or by the System/370 RSCS operator. The START command is used to start the appropriate task, and has the following parameters:

linkid: Specifies, in 1 through 8 alphameric characters, the link identifier for the work station.

TYPE DMTSML: Specifies the name of the line driver to be used.

LINE vaddr: Specifies the RSCS virtual machine address of the communications line port (specified only if the port to be used is different than the one specified for the linkid).

Parm: A keyword that specifies that one or more parameters as follows:

Mrn: Specifies an identification number assigned to the work station by the host. Valid entries are 00 through 99, decimal. The value specified here and the value specified for the REMOTEnn parameter of the /*SIGNON on display 35.0 during MSRJE subsystem member configuration must match.

Bnnnn: Specifies the size, in bytes, of each communications buffer. The maximum value is 1017. If a password entry is made, this value must be specified. The value specified here must match the entry made for the prompt **Buffer length** on display 11.0 during line member configuration at the System/36.

Default: 400

password: Specifies the 1 through 8 alphameric character password that the terminal must send to sign on to the link. If a password is entered here, the same entry must be made for the password parameter of the /*SIGNON specified on display 35.0 during MSRJE subsystem member configuration at System/36.

Default: No password.

Note: *If a password is specified, you must also specify a value for the Bnnnn parameter.*

TASK=name: Specifies a task name for use by the line driver program. One to four alphanumeric names can be specified.

Default: Undefined.

CLASS=C: Specifies the class of files that can be transmitted to the remote work station. One to four VM/370 spool classes can be specified and are in the range A through Z and 0 through 9. Files are transmitted in class order, left to right.

Default: The class defined for the link's link table entry.

Note: *The maximum print length supported is 198.*

Chapter 8. Defining MSRJE to an SNA Host System

This chapter contains information that is needed by the host system programmer to properly configure a communications network that includes System/36 running MSRJE. The information given here is intended to point out those items that are needed to support MSRJE; it is not intended to be a reference document for configuring a host system. Changes to the parameters and their default values sometimes occur between releases. Therefore, the information given here may not exactly reflect the host subsystem release with which you are operating.

System Components

SNA MSRJE enables the System/36 to submit jobs to an IBM host processor using SDLC or X.25 link protocol. The System/36 serves as an RJE work station in the network.

SNA MSRJE supports communications with the following host subsystems using Advanced Communications Function/Virtual Telecommunications Access Method (ACF/VTAM) Release 2 or 3, and Network Control Program/Virtual Storage (NCP/VS) Release 2 or 3:

- OS/VS2 Job Entry Subsystem 2 (JES2)

- OS/VS2 Job Entry Subsystem 3 (JES3)

- OS/VS1 Remote Entry Services (RES)

- VSE/POWER

SNA MSRJE requires the following components on the host system:

- 270x or 37xx Communications Controller and ACF/NCP

- Advanced Communications Function/Virtual Telecommunications Access Method (ACF/VTAM)

- An operating system (OS/VS1, OS/VS2 (MVS), or DOS/VSE)

The relationship of these components to each other is shown in Figure 8-1.

| **MVS** | | **37xx** | **System/36** | |
| OS/VS2 (JES2) | A C F V T A M | ACF NCP/VS | MSRJE | Job Entry Subsystem 2 |

| **MVS** | | **37xx** | **System/36** | |
| OS/VS2 (JES3) | A C F V T A M | ACF NCP/VS | MSRJE | Job Entry Subsystem 3 |

| **RES** | | **37xx** | **System/36** | |
| OS/VS1 | A C F V T A M | ACF NCP/VS | MSRJE | Remote Entry Services |

| **DOS** | | **37xx** | **System/36** | |
| VSE POWER | A C F V T A M | ACF NCP/VS | MSRJE | VSE/POWER |
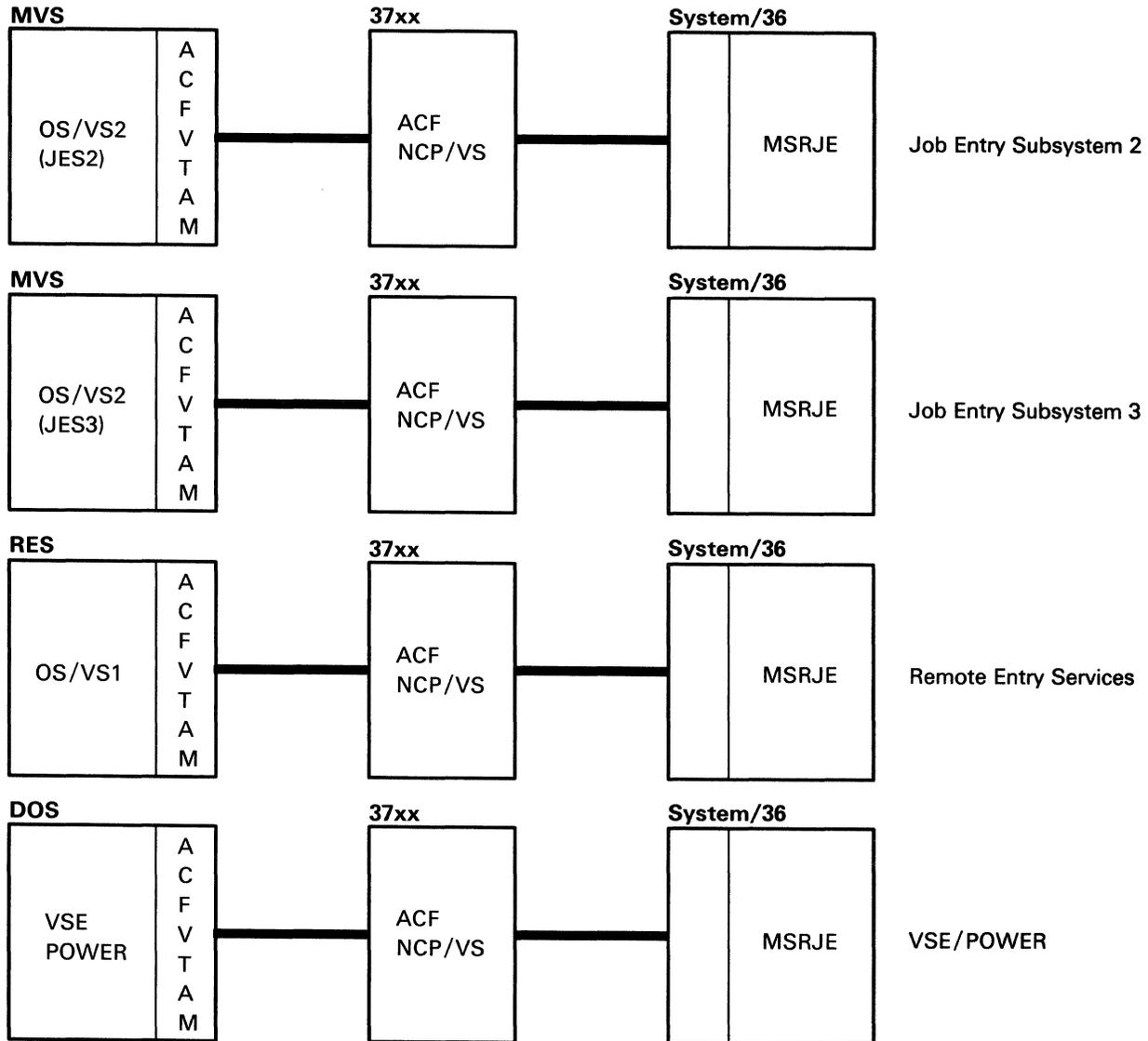
S7909005-0

Figure   8-1.   MSRJE to SNA Host System Relationships

For the 4300 system with ICA, VTAME will replace ACF VTAM.

Communications Controller and the NCP

The IBM 37xx Communications Controllers provide communications control by means of the Network Control Program (NCP). A communications controller and its NCP support a variety of remote terminals attached to the controller. The NCP is generated from a series of user-specified macroinstructions. An NCP can be generated to handle lines in either network control mode, or emulation mode, or both. An NCP that is generated with both kinds of functions is called an NCP with the Partitioned Emulation Programming (PEP) extension.

Remote Terminal Access Method (RTAM), JES2, and JES3 use the facilities of the NCP to control lines and devices attached to the controllers, to transmit and receive data, and to perform error recovery. Virtual Telecommunications Access Methods (VTAM) executes macroinstructions to direct the acquisition, reading, writing and checking of data from the terminals to which it is connected.

Note: *If you plan to use an X.25 line in connecting your system to an IBM 37xx Communications Controller, you will need the Network Packet Switching Interface Program Product.*

For additional information on the Communications Controllers and the NCP, see one of the following manuals:

• *Introduction to the IBM 3704 and 3705 Communications Controllers*

• *3725 Model 1 Communication Controller, Introduction*

• *3725 Model 2 Communication Controller, Introduction*

Communications Access Methods

RTAM

RTAM is a communications access method used by SNA operations. All work stations, communications line, and transmission code dependencies are resolved by RTAM.

RTAM is started on a communications line basis rather than on a work station basis. To initiate processing, the central operator issues a START RTAM command, which, in turn, starts one or more communications lines. Additional lines can be started later by entering a MODIFY command specifying lines that were previously allocated to RTAM. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with RES through a LOGON procedure that identifies the particular work stations or work station user.

JES2

The Remote Job Entry (RJE) facility of JES2 allows remote work stations to use the Job Entry Subsystem. To initiate processing, the system operator starts one or more lines by entering the $S Start command. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with JES2 through a SIGNON procedure that identifies the particular work station or work station user. JES2 uses RTAM to provide an interface between JES2 and the remote terminal.

JES3

JES3 uses RTAM to provide an interface between JES3 and the remote terminal. RTAM provides blocking/deblocking, compression/decompression, and synchronization with the remote terminal. To initiate processing, the system operator enters a *START LINE command. Any work station compatible with the line adapter and data set (for switched lines) attached to the line can establish connection with JES3 through a SIGNON procedure that identifies the work station or work station user.

JES2 Host System Generation for SNA MSRJE

When JES2 is started, a series of initialization parameters are processed to determine the configuration options to be used. Initialization parameters that are required for MSRJE can be characterized as: (1) system-wide initialization values and (2) remote work station definitions. For a complete description of the JES2 generation, see the manual *OS/VS2 MVS System Programming Library: Initialization and Tuning*.

JES2 System-Wide Initialization Parameters

The following JES2 system-wide initialization parameters are used in defining System/36 MSRJE work stations.

LOGONn: The LOGONn parameter identifies JES2 as an application program to VTAM.

APPLID=cccccccc: Specifies, in 1 through 8 alphameric characters, the name that the host has assigned to JES2. If specified the value must match the name field of the VTAM APPL definition for JES2.

Default: JES2.

PASSWORD=cccccccc: Specifies, in 1 through 8 alphameric characters, the password presented to VTAM. If specified, the password must match the PRTCT parameter of the VTAM APPL application definition statement.

Default: No password.

&MAXSESS (Maximum Number of VTAM Sessions): The &MAXSESS parameter specifies the maximum number of VTAM sessions (nnnn) that can be active at any one time. The valid range of values is between 1 and 9999. Terminals attempting to log on when nnnn sessions are already active are not allowed to log on.

Default: The number of LINEnnn initialization statements specifying the UNIT=SNA keyword.

&NUMBUF (JES2 I/O Buffer Count): The &NUMBUF parameter specifies the number (15 through 2000) of I/O buffers to be included in the JES2 load module. The value specified should reflect the total number of buffers required for proper operation of JES2.

Because all JES2 buffers are maintained in a dynamic pool until required by an active function, the appropriate number of buffers should be based on the predicted number of concurrent functions required at the installation. Refer to the *OS/VS2 MVS System Programming Library: Initialization and Tuning* for more information.

&NUMCMBS (Number of JES2 Console Message Buffers): The &NUMCMBS parameter specifies the number (3 through 999) of console message buffers to be provided for JES2. The number of buffers specified should be sufficient to accommodate all outstanding operator requests and still allow message processing to continue.

During periods of high console activity, when no message buffers are available, certain noncritical JES2 messages are discarded to avoid delaying the associated process. These noncritical messages include certain RJE-oriented messages, and certain I/O error messages on JES2-controlled devices.

Default: 15

&NUMJOES=nnnn (Number of Job Output Elements): Specifies the number of job output elements to be generated.

One job output element is required for each:

- Unique SYSOUT class that appears in a job that is queued for output.

- Active printer or punch.

- Interrupted or restarted job that is not currently active on printer or punch.

- Unique combination of forms ID, USCID, and FCB ID for all jobs currently queued for output.

- Job that was interrupted by a system failure while being printed or punched and has not yet been warm started on an output device.

Specifying too small a value results in jobs waiting for in-storage queuing before completing active print or punch work. For performance, you should specify a number slightly greater than the total of the above elements.

Default: 10 times the total number of local and remote printers and punches.

&NUMLNES (Number of Teleprocessing Lines): Specifies the maximum number of LINEnnn initialization parameters that can be specified. This value includes the number of lines defined either as BSC MULTILEAVING lines or as logical lines for SNA.

Default: 0

&NUMRJE=nnn (Number of Remote Terminal Definitions): Specifies the number (0 through 255) of remote terminal definitions (RMTnnn). This value should correspond to the highest number used as an RMTnnn initialization parameter.

Default: The value specified for the &NUMLNES parameter.

&NUMTPBF=nnnn (Number of JES2 Teleprocessing Buffers): Specifies the number (0 through 2000) of teleprocessing buffers to be generated for RJE and NJE (network job entry) by JES2. This value includes the buffers required for remote terminals supported as logical units.

The minimum requirement for SNA is three buffers plus two buffers for every SNA RJE terminal. All other signed-on terminals require at least one buffer each.

Default: 2 times the value of &NUMLNES.

&PRTRANS=YES/NO (Print Line Translation Option): Specifies whether to translate lines of print not directed to 3211 printers. If the default value is used, each line to be printed by a local 1403 or any remote printer is first translated. Translation changes:

- Lowercase letters to uppercase.

- Characters that are invalid on a PN train to blanks. If any print train is to be used on a JES2-controlled local 1403 or on a remote printer that has characters not equivalent to those on a PN, NO must be specified.

Default: YES.

&SPOLMSG=nnn (Remote Terminal Spool Message Record Count): Specifies the number (0 through 254) of physical records to be reserved for operator messages and JES2 messages for each JES2 remote terminal.

Default: (4096/&BUFSIZE) x 6 if &NUMLINES is not 0; 0 if &NUMLNES is 0.

&TPBFSIZ=nnnn (Teleprocessing Buffer Size): Specifies the largest telecommunications buffer size in bytes (128 through 3976) required for any remote work station.

This value is increased, if necessary, to the largest BUFSIZE value specified for an SNA remote terminal.

Default: 400

&TPIDCT=nnn (Remote Printer Separator Page Line Count): Specifies the number (0 through 255) of print lines that are to appear on each JES2 job output separator page for remote terminal printers. If the specification is 30 or greater, the first 29 lines are used to produce a block-lettered job name, job number, and SYSOUT class.

Default: 6

&WAITIME=nn (Remote Terminal Function Interval): Specifies the length of time in seconds (1 through 30) JES2 waits after processing an input stream or output stream to allow entry of commands or jobs by the RJE operator.

Default: 1

Remote Work Station Definitions

JES2 remote work station definitions consist of a series of LINEnnn, RMTnnn, Rnnn.PRm, Rnnn.PUm, and Rnnn.RDm parameters. The following are used in defining System/36 MSRJE work stations:

LINEnnn (Line Definition)

The **LINEnnn** parameter specifies the characteristics of one teleprocessing line or logical line to be used during remote job entry. This parameter should be specified for each teleprocessing line. Lines are numbered consecutively (LINE1 to LINE255) for the number of lines specified by the &NUMLNES parameter.

The following LINEnnn subparameters are used in defining SNA work stations.

PASSWORD=cccccccc: Specifies a 1 through 8 alphameric character security password to be used by this work station when it logs on.

The entry made here must match the entry made for the **password1** entry of the **DATA** parameter for the host signon specified on display 35.0 during MSRJE subsystem member configuration at System/36.

Default: 8 blanks.

UNIT=SNA: Specifies that this LINEnnn parameter is for SNA use.

RMTnnn (Remote Work Station Definition)

The **RMTnnn** parameter specifies the characteristics of one remote work station. One RMTnnn parameter is required for each work station.

nnn specifies an identification number for the work station. Work stations are numbered consecutively from 1 through 255. Do not use leading 0's for nnn. The highest value specified for nnn must match the value specified for &NUMRJE.

The following subparameters of RMTnnn are used in defining SNA work stations.

LUTYPE1: Must be specified for System/36 MSRJE.

BUFSIZE=nnn: Specify 256. This is the largest request unit (RU) that can be sent to or received from this work station.

Default: 256

COMP/NOCOMP: COMP specifies that this terminal has the compression/expansion feature. All SNA terminals have this feature; but the default value, NOCOMP, can be used.

Default: NOCOMP, which specifies that this terminal does not have the compression/expansion feature.

Specify NOCOMP for better line usage.

CONSOLE/NOCON: CONSOLE specifies that this SNA remote terminal has an operator console. Specify CONSOLE for System/36.

Default: NOCON, which specifies that the remote terminal has no operator console.

CMPCT/NOCMPCT: Specifies whether compaction is used at this work station. Specify NOCMPCT since System/36 does not support compaction.

Default: NOCMPCT.

DISCINTV=nnnn: Specifies the time interval (in seconds) after which JES2 terminates the session if there is no text transmission in either direction. DISCINTV applies to both switched and nonswitched lines. It is recommended that 0 be specified (default) for nonswitched lines. This value indicates that the session is not to be terminated and the work station is not to be disconnected.

Default: 0

FIXED/VARIABLE: Specify VARIABLE (specifies variable-length data records).

Default: VARIABLE.

LUNAME=cccccccc: Specifies the logical unit name of this remote work station. LUNAME is not required and is used only in conjunction with automatic logon.

If specified, this name must be the same as the name defined to VTAM at system initialization.

NUMPR=n: Specifies the number of printers at this remote terminal. Valid entries are 0 through 7. The maximum value is 6 if **CONSOLE** is specified, or 7 if **CONSOLE** is not specified.

The value specified here should not be greater than the value specified for the prompt **Maximum number of printers** on display 36.0 during MSRJE subsystem member configuration at System/36.

Note: *The total number of printers and punches must not exceed 8.*

Default: 1

NUMPU=n: Specifies the number of punch devices at this remote terminal. Valid entries are 0 through 7.

The value specified here should not be greater than the value specified for the prompt **Maximum number of punches** on display 36.0 during MSRJE subsystem member configuration at System/36.

Note: The total number of printers and punches must not exceed 8.

Default: 0

NUMRD=n: Specifies the number or readers at this remote terminal. Valid entries are 0 through 7.

The value specified here should be at least as large as the value specified for the prompt **Maximum number of host readers** on display 37.0 during MSRJE subsystem member configuration at System/36.

Default: 1

PASSWORD=cccccccc: Specifies a security password (1 through 9 alphameric characters) to prevent unauthorized terminals from using this remote terminal's resources.

The entry made here must match the entry made for the **password2** operand of the **DATA** parameter for the host signon specified on display 35.0 during MSRJE subsystem member configuration at System/36.

Default: No password.

ROUTECDE=nnn: Specifies the route code to be assigned to this terminal and its associated printers, punches, and readers. The value of nnn may be any number from 1 through the value of &NUMRJE.

Default: If a route code is not specified, JES2 assigns the number of this terminal (RMTnnn) as its route code.

SETUPHDR/SETUPMSG: SETUPHDR specifies that a function management header, containing setup information, is constructed and sent to the remote work station. The remote work station is responsible for processing the header and generating any required messages. SETUPHDR allows spooling of data and generation of multiple copies of a data set (from the original sent by JES2) at a remote work station.

Specify SETUPHDR for the System/36.

Default: SETUPMSG, which specifies that JES2 is to inform the remote operator of any setup requirements via the $HASP190 message. Upon completion of setup, the operator must issue a $S command to start JES2 transmission.

SETUPINF/SETUPACT: SETUPINF, which should be specified for System/36, specifies that operator setup messages issued at the local (CPU) console for this remote device are to be informational messages (they do not require an operator action to be deleted from a display console).

Default: SETUPACT, which specifies that operator setup messages issued at the local console for this remote device are flagged as action messages (requiring an operator action to be deleted from a display console).

WAITIME=nn: Specifies the length of time in seconds (1 through 30) that RTAM should wait at the completion of the processing of any input stream, printed output stream, or punched output stream to allow the operator to enter an input stream at this remote terminal. The value of n is greater than 0.

Default: The value specified for the &WAITIME initialization parameter.

Rnnn.PRm (Remote Printer Definition)

The **Rnnn.PRm** parameter specifies the characteristics of one printer at a remote work station.

nnn specifies the number of the work station as specified in an RMTnnn initialization parameter.

m specifies the number of this printer.

The number of printers defined using the Rnnn.PRm parameter must match the number of printers specified for the **NUMPR** subparameter of the **RMTnnn** parameter.

The following subparameters further define the remote work station printer:

AUTO/OPERATOR: AUTO specifies that this printer is to operate initially in automatic (demand) forms mode when JES2 starts processing.

Specify AUTO for System/36.

Default: OPERATOR which specifies that this printer is to operate initially in operator-controlled (forms) mode.

The mode may be modified from the remote terminal via the JES2 $T set command.

CCTL/NOCCTL: CCTL specifies that carriage control characters and SNA character strings (SCS) are to be placed in the output stream transmitted to this printer.

Note: If NOCCTL is specified, no TRN (transparent) SCS coding (or compression or compaction) is performed.

Default: CCTL.

CKPTLNS=nnnnn: Specifies the maximum number of lines (0 through 32767) in a page. The size of a logical page is also defined as the number of lines printed until:

- A channel skip is encountered.

- The line count specified by &LINECT, the /*JOBPARM control statement, or the JOB statement accounting field has been exceeded.

If CKPTLNS is 0, a logical page is defined only by the preceding items.

If the line count does not equal 0, setting CKPTLNS to a value greater than line count results in the line count being used as the definition of a logical page; it overrides CKPTLNS.

CKPTLNS used in conjunction with CKPTPGS is used to specify the checkpoint interval for data sets having a line count of 0 and no channel skips. In most cases, specifying CKPTLNS=0 sets the most efficient checkpoint interval.

Default: 0

CKPTPGS=nnnnn: Specifies the number of logical pages (1 through 32767) to be printed before each checkpoint is taken.

For SNA remote printers, the CKPTPGS and CKPTLNS parameters determine the number of logical records within an SNA chain. JES2 will not take a checkpoint until it receives acknowledgment that the chain was received successfully by the remote. The chain size is the number of logical pages specified by CKPTPGS.

The larger the number you specify for this parameter, the less frequently the host system waits for an acknowledgment. Therefore, a larger number may improve performance.

Default: 1

CLASS=c1...cn: Specifies the output classes, in priority sequence, to be processed initially by this printer. You can specify any number of classes (A through Z and 0 through 9) up to the maximum number of classes specified by the &NUMCLAS parameter.

Default: AJ (where A and J are classes assigned to this printer).

CMPCT/NOCMPCT: Specifies whether or not this printer has compaction capabilities.

Default: The CMPCT/NOCMPCT specification for the corresponding RMTnnn initialization parameter.

Note: System/36 does not support compaction.

COMP/NOCOMP: COMP specifies this remote SNA printer has compression/expansion capabilities. COMP forces this remote SNA printer to use compression only if the corresponding remote terminal (RMTnnn) initialization parameter has COMP specified. NOCOMP turns off compression for this remote SNA printer even if the corresponding RMTnnn initialization parameter specifies COMP.

Default: The COMP/NOCOMP specification for the corresponding RMTnnn initialization parameter.

COMPACT=nn/0: Specifies the compaction table (nn) to be used for all remote printer data. The CMPCT subparameter of RMTnnn must indicate that compaction is supported by this printer. The value range of nn is 0 through 99. Specify 0 since System/36 does not support compaction.

Default: 0 (no compaction table).

DRAIN/START: DRAIN specifies that this printer is to be started by operator command. START, which should be specified for System/36, specifies that this printer (if it is ready) is to be started automatically when JES2 starts processing.

Default: START.

FORMS=cccc: Specifies the forms identifier of the forms that are assumed to be initially loaded in this printer (1 through 4 alphameric characters).

Default: If no value is specified, JES2 uses the forms identifier specified by the &STDFORM generation parameter.

LRECL=nnn: Specifies the logical record length (nnn) of data transmitted to the SNA remote printer. This value must not exceed the printer width specified during RMT generation (by the &PRTSIZE or PRTFOTLW RMT generation parameters) for this terminal. LRECL may be used in place of the PRWIDTH subparameter when specifying record sizes destined for remote devices. The maximum value for LRECL is 255.

Specify 198 only if you are using a forms control table entry with a printwheel ID which has a CPI=15, or if you are using a print image of CPI=15 when using a printer which supports a CPI=15. Specify 132 if you are not using a printwheel ID which has a CPI=15.

Default: 120

LIMIT=(m-n,m-*): The LIMIT subparameter allows you to specify that output is to be selected for specific printers based upon the amount of the output (in records). The values m and n specify within what output size range (in records) a job output element (JOE) must fall to be processed by this printer. The integer m specifies the lower output size limit, and n specifies the upper output size limit. The value of m must be less than the value of n. The maximum value that can be explicitly assigned to n is 999999 records. If * is specified, the upper limit is set to the default value of n (4294767295).

Default: m equals 0, and n equals 4294767295.

NOSEP/SEP: NOSEP specifies that separator pages are not to be provided initially between data set groups.

Default: SEP, which specifies that separator pages are to be provided initially between data set groups.

Notes:

1. *If 0 print lines were specified by the &TPIDCT parameter, separator pages will not be produced even if SEP is specified.*

2. *If a user-written exit routine generates the separator pages, it should contain a $SEPPDIR macro to insure that PDIRs are sent to MSRJE.*

PRWIDTH=nnn: Specifies the maximum number of characters to be printed on one line.

Specify 198 only if you are using a forms control table entry with a printwheel ID which has a CPI=15, or if you are using a print image of CPI=15 when using a printer which supports a CPI=15. Specify 132 if you are not using a printwheel ID which has a CPI=15.

Default: 120

ROUTECDE=nnn: Specifies the route code (1 through 255) to be assigned to this printer. The route code specified may be that of any remote terminal defined to JES2 by means of the RMTnnn initialization parameter.

Default: JES2 assigns the route code of the remote terminal to which the printer is attached. (See the description of the RMTnnn parameter in this chapter for more information about the route code).

Rnnn.PUm (Remote Card Punch Definition)

The **Rnnn.PUm** parameter specifies the characteristics of one punch at a remote work station.

nnn specifies the number of the work station as specified in an RMTnnn initialization parameter.

m specifies the number of this punch.

The number of punches defined using the Rnnn.PRm parameter must match the number of punches specified for the **NUMPU** subparameter of the **RMTnnn** parameter.

The following subparameters further define the remote work station card punch.

AUTO/OPERATOR: AUTO, which should be specified for System/36, specifies that this punch is to operate initially in automatic (demand) forms mode when JES2 starts processing.

Default: OPERATOR, which specifies that this punch is to operate initially in operator-controlled (forms) mode. The mode may be modified from the remote terminal via the JES2 $T set command.

CCTL/NOCCTL: CCTL specifies that card separator control characters are to be placed in the output stream transmitted to this punch.

Note: *If NOCCTL is specified, no TRN (transparent) SCS coding (or compression or compaction) is performed.*

Default: CCTL.

CKPTLNS=nnnnn: Specifies the maximum number of cards (0 through 32767) to be punched per logical page.

CKPTLNS is the only value used to define a logical page for punches.

Default: 100

CKPTPGS=nnnnn: Specifies the number of logical pages (1 through 32767) to be punched before each checkpoint is taken.

For SNA remote punches, the CKPTPGS and CKPTLNS parameters determine the number of logical records within an SNA chain. The number of logical records equals CKPTLNS multiplied by CHKTPGS. JES2 will not take a checkpoint until it receives acknowledgment that the chain was successfully received by the remote. The chain size is the number of logical pages specified by CKPTPGS.

Default: 1

CLASS=c1...cn: Specifies the output classes, in priority sequence, to be processed initially by this punch. You can specify any number of classes (A through Z and 0 through 9) up to the maximum number of classes specified by the &NUMCLAS parameter.

Default: BK (where B and K are classes assigned to this remote punch).

CMPCT/NOCMPCT: Specifies whether this punch has compaction capabilities. Specify NOCMPCT since System/36 does not support compaction.

Default: The CMPCT/NOCMPCT selection made for the RMTnnn parameter.

COMP/NOCOMP: COMP specifies that this remote punch has compression/expansion capabilities. COMP forces the remote punch to use compression only if the corresponding remote terminal (RMTnnn) initialization parameter has COMP specified. NOCOMP turns off compression for this remote punch even if the corresponding RMTnnn initialization parameter specifies COMP.

Default: The COMP/NOCOMP specification for the corresponding RMTnnn initialization parameter.

COMPACT=nn/0: Specify 0 since System/36 does not support compaction.

Default: 0 (no compaction table).

DRAIN/START: DRAIN specifies that this punch is to be started by operator command. START, which should be specified for System/36, specifies that this punch (if it is ready) is to be started automatically when JES2 starts processing.

Default: START.

FORMS=cccc: Specifies the forms identifier of the cards that are assumed to be initially loaded in this punch. If SETUPHDR is specified, then FORMS has no effect. If SETUPMSG is specified, then JES2 assumes that the cards specified are initially loaded in the punch and does not issue a message to the operator to load them.

Default: JES2 will use the identifier specified by the &STDFORM parameter.

The &STDFORM parameter specifies an identifier, 4 alphameric characters, that is used as a forms ID when a forms ID is not specified. It also specifies the default initial setup of all printers and punches at JES2 initialization. The default is STD or STD., depending on which release of JES2 is installed on your system.

LIMIT=(m-n,m-*): The LIMIT subparameter allows you to specify that output is to be selected for specific punches based upon the amount of the output (in records). The values m and n specify within what output size (in records) a job output element (JOE) must fall to be processed by this punch. The integer m specifies the lower output size limit and n specifies the upper output size limit. The value of m must be less than the value of n. The maximum value that can be explicitly assigned to n is 999999 records. If * is specified, the upper limit is set to the default value of n (4294767295).

Default: m equals 0, and n equals 4294767295.

LRECL=NNN: Specifies the logical record length of data transmitted to the SNA remote punch. For System/36, specify 80.

Default: 80

NOSEP/SEP: NOSEP specifies that separator cards are not to be provided initially between data set groups.

Default: SEP, which specifies that separator cards are to be provided initially between data set groups.

ROUTECDE=nnn: Specifies the route code (1 through 255) to be assigned to this punch. The route code specified may be that of any remote terminal defined to JES2 by means of the RMTnnn initialization parameter.

Default: JES2 assigns the route code of the remote terminal to which the punch is attached. (See the description of the RMTnnn parameter in this chapter for more information about the route code.)

The **Rnnn.RDm** parameter specifies the characteristics of one logical reader at a remote work station. Specify one Rnnn.RDm parameter for each reader at the work station.

nnn specifies the number of a work station as specified in an RMTnnn parameter.

m specifies the number of this card reader.

The number of readers defined using the Rnnn.PRm parameter must match the number of readers specified for the **NUMRD** subparameter of the **RMTnnn** parameter.

The following subparameters further define the remote reader:

CLASS=c: Specifies the job class to be assigned to all jobs that are entered at this card reader and that do not specify a job class in the CLASS operand of their JOB statements. The value c can be any class A through Z and 0 through 9.

Default: A

DRAIN/START: DRAIN specifies that this card reader is to be started by operator command. START, which should be specified for the System/36, specifies that this card reader is to start automatically when JES2 starts processing.

Default: START.

HOLD/NOHOLD: HOLD specifies that all jobs entered at this card reader are to be held after JCL conversion until they are released for execution by the operator.

Default: NOHOLD which specifies that jobs entered at this card reader are to be queued as usual.

MSGCLASS=c: Specifies the default message class to be assigned to jobs that are entered at this card reader and that do not specify a MSGCLASS operand in their JOB statements. The value of c can be any class A through Z and 0 through 9.

Default: A

PRDEST=nnn: Specifies the printer destination for the printed output from all jobs that are entered at this card reader that do not have a ROUTE statement or DEST parameter.

Default: The route code (ROUTECDE) specified in the RMTnnn parameter for this remote terminal.

PRIOINC=nn: Specifies a number (0 through 15) to be added to the selection priority of each job entered at this card reader.

Default: 0

PRIOLIM=nn: Specifies the maximum priority level (0 through 15) that can be assigned to jobs entered at this card reader.

Default: 15

PRLCL/PRRMT: PRLCL specifies that the route code specified by PRDEST is that of a local printer.

Default: PRRMT, which specifies that the route code specified by PRDEST is that of a remote printer.

PUDEST=nnn: Specifies the card punch destination for the punched output from jobs entered at this card reader that do not have a ROUTE statement or a DEST parameter.

Default: The route code (ROUTECDE) specified in the RMTnnn parameter for this remote terminal.

PULCL/PURMT: PULCL specifies that the route code specified by PUDEST is that of a local card punch.

Default: PURMT, which specifies that the route code is that of a remote card punch.

In addition to the JES2 parameters, an NCP generation for the 37xx may be necessary. For additional information, refer to the NCP generation information in this chapter.

JES3 Host System Generation

The following JES3 initialization statement parameters are used in defining System/36 MSRJE work stations. For a complete description of the initialization parameters, see the manual *OS/VS2 MVS System Programming Library: JES3*.

COMMDEFN (Communications Subsystem Interface Definition Records)

The COMMDEFN statement identifies the optional user communications subsystem interface (VTAM) parameters.

APPLID=applname: Indicates the application name as specified to VTAM in a VTAM generation application definition statement (APPL). This parameter is used in establishing the application program interface (API) at OPEN ACB time.

Default: JES3

P=password: Specifies the 1 through 8 character alphameric password which is used by JES3 when issuing an OPEN ACB macro. This parameter must be the same as the password specified in the PRTCT parameter of the VTAM APPL application definition statement.

Default: No password.

LU=nnnn: Specifies the total number of LU-to-LU sessions that can exist concurrently.

COMPACT (Compaction Table Definition)

The compact statement defines a compaction table to JES3. System/36 does not support compaction.

CONSOLE (RJP Operator Console)

The CONSOLE statement is required to define each SNA RJP console. This statement is used to assign JES3 destination classes to that console. Only one console can be specified on each CONSOLE statement. The parameters that make up the CONSOLE statement are:

JNAME=name: Specifies the name of the SNA RJP work station. The JNAME must match the name specified in the N parameter on a RJPWS statement.

TYPE=RJP: Specifies that the console being defined is an RJP console.

DEST=destcode: Specifies one or a series of destination codes that represent message classes to be directed to this console.

The following are values which may be specified for destcode. They represent the 96 JES3 message categories:

ALL: Specifies that messages issued by the operator with the destination specified as ALL will be routed to all consoles regardless of what is specified in the DEST parameter of the CONSOLE statement unless DEST=NONE is specified.

ERR: Console receives messages concerning equipment failure as well as JES3 failsoft messages.

JES: Console receives general information messages pertaining to the operation of the global processor.

LOG: Console receives messages concerning active jobs, such as job started or job ended.

MN: Console receives all input and output messages, except security messages, providing that MLOG is specified in the HARDCOPY parameter of the CONSTD statement. This is in addition to the original source consoles or destination consoles which also receive the messages.

SEC: Console receives security messages.

TAP: Console receives messages which apply to the JES3 background utilities with JES3-controlled tape requirements, such as tape-to-print or card-to-tape.

TP: Console receives messages which apply to RJP teleprocessing equipment.

UR: Console receives messages which apply to the operation of JES3-controlled unit record equipment.

ALL D1 to D22: Console receives messages which apply to a user-defined console configuration. Either all of the messages in this group may be selected for this console by specifying DALL, or specific classes in the group may be selected by specifying one or a subset from D1 through D22.

MALL M1 to M32: Console receives messages which are unique to an ASP main, JES3 local or JES3 global processor. Either all of the messages in this group may be selected for this console by specifying MALL, or specific classes in the group may be selected by specifying one or a subset from M1 to M32. The destination code is associated with a processor by the MDEST parameter in the MAINPROC statement.

SALL S1 to S32: Console receives messages which pertain to JES3 device setup. Either all of the messages in this group may be selected for this console by specifying SALL, or specific classes in the group may be selected by specifying one or a subset from S1 through S32. Setup messages regarding a specific device are associated with this console by indicating the destination code selected from this group in the JUNIT or XUNIT parameter on the DEVICE statement.

NONE: Console does not receive any messages. This destination code is not correlated to any message class.

OUTPUT: Console receives messages in all classes except MLG. This destination code is not correlated to any message class.

TOTAL: Console receives messages from all 96 message classes including MLG. This destination code is not correlated to any message class.

DEPTH=nn: Specifies the maximum number of messages to be maintained in the buffers associated with a RJP console. The DEPTH may be from 1 through 255. When an RJP console is queued to depth, the queued messages are written to spool. To keep track of the status of console buffers, use the *INQUIRY operator command.

Default: 50

LL=nnn: Specifies the longest line length to be printed on this console. If the actual line to be written exceeds this length, the line is broken at a comma or a blank and continued on the next line.

Specify 198 only if you are using a forms control table entry with a printwheel ID which has a CPI=15, or if you are using a print image of CPI=15 when using a printer which supports a CPI=15. Specify 132 if you are not using a printwheel ID which has a CPI=15.

Default: 120

LEVEL=nn: Specifies the authority level (0 through 15) for the JES3 console authority routine (IATUX18) to check for validity.

Default: 0

DEVICE (Device Definition)

The DEVICE statement defines those devices used by JES3 and those devices used by jobs running under JES3. Each uniquely addressable device (card reader, punch, local or remote console, or printer) attached to a global, local, or ASP main processor must be specified on a DEVICE statement if the default characteristics are not satisfactory. The default characteristics are provided by the RJPTERM initialization statement. Refer to the *OS/VS2 MVS System Programming Library: JES3* manual for the DEVICE statement parameter descriptions.

RJPWS (SNA Work Station Definition)

The RJPWS statement describes a single SNA work station's characteristics to the JES3 system. This statement causes a default description to be provided for each work station device (printer, punch, or card reader) indicated by the PR, PU, or RD parameter along with the operating characteristics of the work station. A DEVICE statement specifying PDIR=ALL should be used to insure proper PDIR processing.

The SNA work station definition is made up of the following parameters.

N=name: Specifies the 5-character name of the work station. This parameter cannot specify the same name specified in the N parameter on an RJPLINE or RJPTERM statement.

The value specified here must be the same as the value specified for the **wsname** operand of the **DATA** parameter in the host signon specified on display 35.0 during MSRJE subsystem member configuration at System/36.

RD=nn: Specifies the maximum number host readers. This number must be an integer from 0 through 15.

The value specified here should not be greater than the value specified for the prompt **Maximum number of host readers** on display 37.0 during MSRJE subsystem member configuration at System/36.

Default: 1

PR=nn: Specifies the maximum number of printers. This number must be an integer between 0 and 15.

The value specified here should not be greater than the value specified for the prompt **Maximum number of printers** on display 36.0 during MSRJE subsystem member configuration at System/36.

Default: 1

PU=nn: Specifies the maximum number of punches. This number must be an integer from 0 through 15.

The value specified here should not be greater than the value specified for the prompt **Maximum number of punches** on display 36.0 during MSRJE subsystem member configuration at System/36.

Default: 0

C=(S,R): Specifies the type of console support for the work station. S indicates that console and print media share the same presentation services. JES3 never interrupts data streams to send console messages. R indicates that the console and printer are separate real devices. JES3 interrupts data streams to send console messages. Specify R for System/36 MSRJE.

Default: R

G=grpname: This parameter associates the work station with a group name. The grpname specified can be up to 8 characters long. This name is also the default destination for any output data set from a job submitted from a work station in the group.

Default: The name specified in the N parameter on this statement.

COMPACT=NO/comptbl: Specifies the name of the default compaction table. System/36 does not support compaction. Specify NO.

Default: NO.

P=password: Specifies the 1 through 8 alphameric character password to be used by the work station. This password must be included in the user data specified on the LOGON command passed to the JES3 LOGON exit by VTAM, or JES3 will not accept the logon.

The value specified here must match the value specified for the **password** operand of the **DATA** parameter for the host logon on display 35.0 during MSRJE subsystem member configuration at System/36.

PL=n: Specifies the number of invalid logons that can be attempted before the work station is rejected.

Default: 2

AUTO=(Y,N): Specifies whether automatic logon is supported for the work station.

Default: N

LU=luname: Specifies the LU names associated with this work station as defined to VTAM. The names specified are those LUs that are permitted to logon at this work station.

Default: Logons are accepted from any work station.

Note: *If multiple locations are configured for a single line member definition (using CNFIGICF on the System/36), then all LU names that correspond to MSRJE sessions defined in the System/36 line member should be defined here. This will allow any location to use any LU.*

SYSOUT (SYSOUT Class Characteristics)

The SYSOUT initialization statement is required for each JES3 output class that requires other than TYPE=PRINT processing. Refer the *OS/VS2 MVS System Programming Library: JES3* manual for an explanation of the SYSOUT parameters.

RES Host System Generation

The creation of a VS1 system that supports SNA remote work stations requires three steps:

1. A two-stage VS1 system generation with the options required to make the RTAM modules available in the VS1 system, and to include the system code needed to use RTAM. The VS1 system generation must also specify the options required to include VTAM in the system.

2. A two-stage RTAM generation. This step assembles the desired RTAM facilities and link-edits them into the VS1 system.

3. An NCP generation. This step defines SNA work stations as physical and logical units to NCP and to VTAM. The NCP generation is a two-step process.

For a complete description of the RES generation process, see the *OS/VS1 RES System Programmer's Guide*.

VS1 System Generation Requirements

As part of a complete VS1 system generation, specify OPTIONS=REMOTE in the SCHEDULR macroinstruction to condition VS1 for the subsequent generation of RTAM.

To make VTAM modules available to control communication with SNA work stations, specify ACSMETH=VTAM in the DATAMGT macroinstruction.

Account Facility modules and RES modules are unconditionally copied during VS1 generation.

RTAM Generation

RTAM generation is two-stage process that must be performed whenever a new VS1 release is installed.

Stage 1

Stage 1 is an assembly for which the input consists of the following installation-coded macroinstructions:

TERMINAL: This is step 1 of stage 1. You must include the TERMINAL macroinstruction to associate an identification number with a work station and to specify the terminal device characteristics of the work station. Specify at least one TERMINAL macro for each work station. The first TERMINAL macroinstruction must immediately follow the last LINE macroinstruction. The following parameters define the terminal to RTAM.

TERMID=termid: Specifies the terminal number for this work station.

TDESCR=(w,t,d,f): Specifies the terminal characteristics.

w   print width, specify 3 (132 characters),
    or specify 5 (150 characters)
    if you are using a forms control table entry
    with CPI=15 or a print image which has a CPI=15 when using
    a printer which supports a CPI of 15
t   terminal type, specify 8 (SNA terminal)
d   interface, specify 5 (SNA character string)
f   console support/transparency, specify 4 (console support
    with transparency)

RDRS=rd: Specifies the number of readers to be used at this work station. If this operand is omitted, one reader is assumed. The range of rd is 0 through 9.

The value specified here should be at least as large as the value specified for the prompt. **Maximum number of host readers** on display 37.0 during MSRJE subsystem member configuration at System/36.

PTRS=pr: Specifies the number of printers at this work station. If this operand is omitted, one printer is assumed. The range of pr is 0 through 9.

The value specified here should not be greater than the value specified for the prompt **Maximum number of printers** on display 36.0 during MSRJE subsystem member configuration at System/36.

PCHS=pu: Specifies whether a punch is at this work station. If this operand is omitted, one punch is assumed. The range of pu is 0 through 9.

The value specified here should not be greater than the value specified for the prompt **Maximum number of punches** on display 36.0 during MSRJE subsystem member configuration at System/36.

CNMSGNO=wtonum: Specifies the maximum number of WTO(R) buffers to be available for sending console messages to this work station.

CONPR=value: Specifies the printer to be used for console output if console support is not specified. If only one printer is defined, that printer is used for console support. The number can be from 1 to the number of printers specified.

Default: CONPR=1.

PLGN=: Specifies whether to use permanent logon. If you want to use permanent logon, specify 1. If you do not want to use permanent logon, specify 0. If you specify 1, you must also specify the NODE parameter of the TERMINAL macro.

Default: PLGN=0.

BUFXSIZ=length: Specifies the maximum size (256 or 512) of the VBUF that can be sent to/by the SNA work stations being defined. Specify 256 for System/36 MSRJE work station support.

VBUF=tpnum: Specifies the number of teleprocessing buffers RTAM will use for this work station. RTAM always uses two buffers for input of data from SNA work stations; all other buffers that you specify here are used for data output to SNA work stations.

If you specify less than 3 or omit this operand, RTAM assigns a value of 6 and issues a warning message. The value range for the VBUF parameter is any integer from 3 through 255.

SESSLIM=value: Specifies the maximum number of SNA sessions that can be initiated for the work station. The value specified here should be at least as large as the value specified for **Minimum number of sessions** on display 34.0 during MSRJE subsystem configuration at System/36.

NODE=node name: Required if you specify PLGN=1. Specifies the name of an LU macro in the 3705 NCP/PEP generation. The value of the LOCADDR parameter on this LU macro must match a logical unit specified for MSRJE on display 14.0 during line member definition.

Note: If multiple locations are configured for a single line member (using CNFIGICF on System/36), then all LU macros that have LOCADDR parameters that match logical units specified on Display 14.0 (Remote System Logical Unit Assignments) must be defined here. This will allow any location to use any LU.

RTAM: The RTAM macroinstruction determines the internal characteristics of RTAM. This is step 2 of stage 1.

TPREAD=readn: Specifies the total number of readers associated with the maximum number of work stations that can be logged on at one time. You can find this value by adding up the number of readers for all work stations that will be logged on at one time. When a work station logs on, RTAM allocates all resources for all its job input readers (and also printers and punches). Therefore, if you specify too small a value for readn, a user might not be able to log on because of insufficient resources.

TPPRINT=printn: Specifies the maximum number of concurrent print operations. As recommended for TPREAD, you should specify a value for TPPRINT that is at least equal to the total number of printers at work stations allowed to log on at one time. You can find this value by adding up the number of printers for all work stations that will be logged on at one time. Resources are allocated as discussed for TPREAD.

TPPUNCH=punchn: Specifies the maximum number of concurrent punch operations. As recommended for TPREAD and TPPRINT, you should specify a value for TPPUNCH that is at least equal to the total number of punches at work stations allowed to log on at one time. You can find this value by adding up the number of punches for all work stations that will be logged on at one time. Resource are allocated as discussed for TPREAD.

MXINTBR=mxintbr: MXINTBR should equal the larger of 856 or the largest BUFXSIZ value specified on the TERMINAL macro.

PASSWORD=password: Specifies a password that RTAM will use to provide additional protection when it issues an OPEN for the VTAM ACB. You must identify here the same password that you specified in the PRTCT= password operand of the VTAM-definition APL statement that identifies RTAM to VTAM as an application.

SNACOMP=YES/NO: If any work station will use compression/expansion for input or print or punch output, specify or default to YES.

CPACT=YES/NO: Specify NO, System/36 does not support compaction.

APPLID=name: Specifies the name that RTAM will use when it issues OPEN ACB to establish the interface to VTAM. The name you select must also be used as the APPLID parameter when you logon to RTAM through VTAM and the label on the VTAM APPL statement which defines RTAM as a VTAM application.

With these macroinstructions, you give the specifications that meet your particular requirements, and define the telecommunications network to be supported by RTAM.

Output from stage 1 is a series of jobs, which constitute the input for stage 2.

Stage 2

Stage 2 consists of the execution of the job output from stage 1. The jobs consist of assemblies of the RTAM modules and two link edits of the RTAM modules.

Example RES Generation

```
Date last changed 03/09/82
SCP level OS/VS1 - 7A
PTF level PUT - 8201
 Configuration supported
      Term      Wrk/Sta    Line
     Number      Type      Cntl
     Number      Type      Cntl
       1         CPU       SNA
```

Terminal Description for CPU-Type Work Stations

```
TERMINAL TERMID=1,           SNA work station terminal number
         TDESCR=(3,8,5,3),    SNA work station attributes
         RDRS=1,              Number of readers/work station
         PTRS=1,              Number of printers/work station
         PCHS=1,              Number of punches/work station
        BUFXSIZ=256,         Maximum size of SNA VBUF
        CNMSGNO=5,           Number of SNA write to operator buffers
        CONPR=1,             Use printer if no console support
        VBUF=14,             Number of SNA TP buffers
        SESSLIM=1,           Number of MSRJE SNA sessions
        CPACTBL=NO,          No SNA compaction table
        PLGN=0               No SNA permanent logon
```

RTAM Description for RES System Generation

```
RTAM TPREAD=6,              Total number of readers
     TPPRINT=6,             Total number of printers
     TPPUNCH=6,             Total number of punches
     MXINTBR=856,           Single interface buffer size
     MSGFCTR=25,            Write to operator increase factor
     STBUFNO=24,            Number of subtask buffers
     RMTOBJ=SYS1.RTAMOBJ,   Object library for RES generation
     PASSWD=RMSC,           Password for SNA
     PORTS=2,               Number of SNA ports
     SNASCII=NO,            No ASCII for SNA
     HALFGEN=NO,            No halfgen
     SNACOMP=YES,           SNA compression/expansion
     CPACT=NO,              SNA compaction
     CPACTDF=NO             SNA compaction table
     APPLID=RTAM            Application ID for RES/VTAM
```

3705 NCP/PEP Generation

The generation procedure for preparing a Network Control Program includes:

- A generation language by which network configuration and program options are specified.

- A library of macrodefinitions from which the source statements are expanded.

Generation Language

The generation language is made up of macroinstructions that fall into four categories according to the type of parameters they define. The types of macros are:

1. System macros

2. Configuration macros

3. Block handling macros

4. A generation delimiter macro

System Macros

The system macros provide information pertaining to hardware features with which the communications controller is equipped, certain network control program options, and program generation information such as data set names.

Configuration Macros

The configuration macros provide the information necessary to construct the control tables needed by the network control program. These tables are used to control the flow of data between the 3705 and remote stations or other 3705s, and between the 3705 and the host system processor.

One group of these macros defines the characteristics of the elements in the network:

- Line groups

- Communications lines

- Cluster controllers

- Terminals

- Components of terminals

- SNA physical and logical units

A macro is coded for each element in the network. The macros must be arranged in a specific order to associate a particular communications line with a particular line group, or a particular station or a particular SNA physical unit.

The rest of the configuration macros provide the following types of information:

- Information needed for data transfer between the communications access method and the network control program.

- Information describing the communication scanner(s) installed in the 3705.

- Definition of the remaining control tables necessary to control the network.

If MSRJE is sharing the communications line, you can use multiple unformatted system services (USS) tables. For example, if MSRJE and 3270 device emulation are sharing a line, you can use:

- One table with messages defined for message levels 0 and 10 for 3270 device emulation

- Another table without messages defined for message levels 0 and 10 for MSRJE

Note: *For MSRJE, you can define messages for message levels 0 and 10 only if you use a formatted logon.*

Block Handling Macros

The block handling macros apply to messages transmitted over binary synchronous communications lines.

Generation Delimiter Macros

The generation delimiter macro ends the program generation input stream.

When the programmer has coded the generation macros that describe the network to be controlled, the control program is generated using the generation procedure. The procedure is executed as a series of jobs in the host processor.

PEP Generation for a 3705-II

```
Date last changed 03/10/81
NCP level 7.1 (NCP REL2)
PTF level PUT - 8011
Configuration supported
   UCB     3705                        LINE    LINE    TERM
  SUBCHAN  LINE ADDR   USE     SPEED   CNTL    NAME    USAGE
            0A6      NCP/LSD   2400    SDLC    L0A6    SNA
            0A0      NCP/SW    2400    SDLC    L0A0    SNA
```

The following shows an example of what you would write for a nonswitched line.

```
LSGRP2    GROUP  DIAL=NO,                  Group macrodefinition
                 LNCTL=SDLC,
                 ACTIVTO=420.0,            (default)
                 REPLYTO=1.0,              (default)
                 TEXTO=3,                  (default)
                 VIRTUAL=NO,               (default)
                 INTPRI=1,                 (default)
                 DATRATE=HIGH,             (default)
                 SPDSEL=NO,                (default)
                 SERVLIM=4,                (default)
                 NEWSYNC=NO,               (default)
                 HDXSP=YES,                (default)
                 MAXOUT=7,                 (default)
                 PASSLIM=7,                (default)
                 PUDR=YES,                 (default)
                 ANS=STOP,                 (default)
                 IRETRY=YES,               (default)
                 BATCH=YES,                (default)
                 LUDR=YES,                 (default)
                 PACING=(7,1),
                 SSCPFM=USSSCS,            (default) VTAM only
                 MODETAB=RMSCMT,           VTAM only
                 USSTAB=RMSCLT,            VTAM only
                 DISCNT=NO,                VTAM only
                 VPACING=7,                VTAM only
                 TYPE=NCP


L0A6     LINE   ADDRESS=(0A6),            Line macrodefinition
                DUPLEX=HALF,
                SPEED=2400,
                NRZI=YES,
                CLOCKING=EXT,
                POLLED=YES,
                PAUSE=0,
                HDXSP=YES,
                RETRIES=(5,10,3),
                MAXPU=8,
                MAXLU=16,                 (default)
                MAXDATA=265,              (default; if the host is a 4300
                                          using ACF/VTAM Version 2 or
                                          VTAME, then MAXDATA must be
                                          262.)

                ISTATUS=INACTIVE
```

```
        SERVICE  ORDER=(PUOA6A,PUOA6B),    Service macrodefinition
                 MAXLIST=8

PUOA6A  PU       ADDR=C1,                  Physical unit definition
                 PUTYPE=2,
                 ISTATUS=INACTIVE

LUOA6A1 LU       LOCADDR=1,                Logical unit definition
                 ISTATUS=INACTIVE

PUOA6B  PU       ADDR=C2,                  Physical unit definition
                 PUTYPE=2,
                 ISTATUS=INACTIVE

LUOA6B1 LU       LOCADDR=1,                Logical unit definition
                 ISTATUS=INACTIVE
```

The following shows an example of what you would write for a switched line.

```
SWGRP2  GROUP DIAL=YES,                    Group macrodefinition
              LNCTL=SDLC,                  (default)
              REPLYTO=1.0,                 (default)
              TEXTTO=3,                    (default)
              VIRTUAL=NO,                  (default)
              HDXSP=YES,                   (default)
              ANS=STOP,                    (default)
              INTPRI=1,                    (default)
              DATRATE=HIGH,                (default)
              SPDSEL=NO,                   (default)
              ANSTONE=NO,                  (default)
              RING=NO,                     (default)
              PAUSE=0,                     (default)
              MAXPU=1,                     (default)
              TYPE=NCP
LOA0    LINE  ADDRESS=(0A0),               Line macrodefinition
              CALL=INOUT,
              DUPLEX=HALF,
              SPEED=2400,
              NRZI=YES,
              CLOCKING=EXT,
              HDXSP=YES,
              PAUSE=0,
              POLLED=YES,
              RETRIES=(5,10,3),
              ISTATUS=ACTIVE,              VTAM only
              VPACING=(2,1)
PUOA0   PU    PUTYPE=(1,2),
              MAXLU=32
```

```
MEMBER NAME APPLRTAM

RTAM1      VBUILD TYPE=APPL

RTAM       APPL   ACBNAME=RTAM,
                  AUTH=(ACQ,NOCNM,PASS,NOPO,VPACE),
                  AUTHEXIT=NO,
                  EAS=10,
                  MODETAB=RMSCMT,
                  PARSESS=NO,
                  PRTCT=RMSC,
                  VPACING=2

           MEMBER NAME SWMSRJE1

SSUNGL     VBUILD TYPE=SWNET,          define as switched major node
                  MAXNO=5,             5 dial numbers
                  MAXGRP=1             1 path group
PU1C       PU     ADDR=C3,             minor node name
                  IDBLK=03E,           bits 16-27 of VTAM station ID
                  IDNUM=00806,         bits 28-47 of VTAM station ID
                  MAXDATA=265,         maxdata that pu can receive in
                                         one PIU
                  DISCNT=(NO,F),       disconnect the phone
                  IRETRY=YES,          repoll immediate after idle
                                         detect
                  ISTATUS=ACTIVE,      PU is activated at start up
                  MAXOUT=7,            send 7 PIUs before PU must
                                         respond
                  MAXPATH=1,           dial in only
                  PASSLIM=7,           same as maxout
                  PUTYPE=2             System/36 is type 2 PU (3770)

PATH1      PATH   DIALNO=60534,        dial characters for dial out
                  GID=1,               group identifier
                  GRPNM=SWGRP2,        group macro name in NCP
                  PID=1,               path identifier
                  REDIAL=0,            don't re-dial
                  USE=NO               don't attempt dial out

LU1C1      LU     LOCADDR=1,           address on physical unit
                  BATCH=YES,           processing priority (yes=low
                                         priority)
                  DLOGMOD=SXXRJE,      default logmode entry name
                  ISTATUS=ACTIVE,      LU is activated at start up
                  LOGTAB=RMSCIT,       interpret table name
                  MODETAB=RMSCMT,      default logmode table name
                  PACING=(3),          data transfer between LU and NCP
                  SSCPFM=USSSCS,       default to VTAM USSSCS
                  USSTAB=RMSCLT,       default to USS log table
                  VPACING=(2)          data transfer VTAM to NCP
```

```
            MEMBER NAME MODETAB

//MODETAB   JOB ,DKOLSON,CLASS=A

//TABLE EXEC ASMHCL,PARM.ASM='OBJ,NODECK',
//           PARM.LKED=(xREF,LIST,LET,NCAL)

//SYSIN   DD *
          TITLE 'RMSC - LOGON MODE TABLE'

RMSCMT    MODETAB
          EJECT

*         MSRJE FOR SYSTEM/36 - programmer

SXXRJE    MODEENT LOGMODE=SXXRJE,            entry name
                  FMPROF=X'03',              FM profile
                  TSPROF=X'03',              TS profile
                  PRIPROT=X'A3',             PLU protocol
                  SECPROT=X'A3',             SLU protocol
                  COMPROT=X'7080',           common protocol
                  SSNDPAC=X'07',             secondary send pacing
                  SRCVPAC=X'07',             secondary receive pacing
                  RUSIZES=X'8585',           RU size (256)
                  PSNDPAC=X'00',             primary send pacing
                  PSERVIC=X'01102000F100C00000010040' LU presentation
                                                      services
          MODEEND
          END     RMSCMT
```

```
          MEMBER NAME USSTAB
//USSTAB   JOB ,DKOLSON,CLASS=B
//TABLE EXEC ASMHOL,PARM.ASM='OBJ,NODECK',
//          PARM.LKED=(XREF,LIST,LET,NCAL)
//SYSIN   DD *
          TITLE 'RMSC - UNFORMATTED SYSTEM SERVICES DEFINITION TABLE'
RMSCLT    USSTAB    TABLE=STDTRANS
LOGON     USSCMD    CMD=LOGON
          USSPARM PARM=APPLID
          USSPARM PARM=LOGMODE
          USSPARM PARM=DATA


LOGOFF    USSCMD    CMD=LOGOFF
          USSPARM PARM=APPLID
          USSPARM PARM=TYPE,DEFAULT=UNCOND
          USSPARM PARM=HOLD,DEFAULT=NO


SIGNOFF   USSCMD    CMD=SIGNOFF
          USSPARM PARM=APPLID
          USSPARM PARM=TYPE,DEFAULT=UNCOND
          USSPARM PARM=HOLD,DEFAULT=NO


MESSAGES USSMSG MSG=1,TEXT='INVALID COMMAND SYNTAX'
          USSMSG MSG=2,TEXT='% COMMAND NOT RECOGNIZED'
          USSMSG MSG=3,TEXT='% PARAMETER UNRECOGNIZED'
          USSMSG MSG=4,TEXT='% PARAMETER INVALID'
          USSMSG MSG=5,TEXT='UNSUPPORTED FUNCTION'
          USSMSG MSG=6,TEXT='SEQUENCE ERROR'
          USSMSG MSG=7,TEXT='SESSION NOT BOUND'
          USSMSG MSG=8,TEXT='INSUFFICIENT STORAGE'
          USSMSG MSG=9,TEXT='MAGNETIC CARD DATA ERROR'
          USSMSG MSG=11,TEXT='SESSION ENDED'
          USSMSG MSG=12,TEXT='REQUIRED PARAMETER OMITTED'
          USSMSG MSG=13,TEXT='IBMECHO %'


STDTRANS DC    X'000102030405060708090A0B0C0D0E0F'
          DC    X'101112131415161718191A1B1C1D1E1F'
          DC    X'202122232425262728292A2B2C2D2E2F'
          DC    X'303132333435363738393A3B3C3D3E3F'
          DC    X'404142434445464748494A4B4C4D4E4F'
          DC    X'505152535455565758595A5B5C5D5E5F'
          DC    X'606162636465666768696A6B6C6D6E6F'
          DC    X'707172737475767778797A7B7C7D7E7F'
          DC    X'808182838485868788898A8B8C8D8E8F'
          DC    X'909192939495969798999A9B9C9D9E9F'
          DC    X'A0A1A2A3A4A5A6A7A8A9AAABACADAEAF'
          DC    X'B0B1B2B3B4B5B6B7B8B9BABBBCBDBEBF'
          DC    X'C0C1C2C3C4C5C6C7C8C9CACBCCCDCECF'
          DC    X'D0D1D2D3D4D5D6D7D8D9DADBDCDDDEDF'
          DC    X'E0E1E2E3E4E5E6E7E8E9EAEBECEDEEEF'
          DC    X'F0F1F2F3F4F5F6F7F8F9FAFBFCFDFEFF'
          END   USSEND
          END   RMSCLT
```

OS/VS Host BSC to SNA Conversion Considerations

You may have to change the setting of the RECFM in the DCB parameter list from FB to FBA to indicate that ANSI form control characters are included in the data.

VSE/POWER Host System Generation for SNA/MSRJE

To generate POWER for operation with System/36 MSRJE, you must specify
parameters of the POWER generation macros and subsequently process these
macros. For a complete description of VSE/POWER generation, see the
VSE/POWER Installation and Operation Guide.

POWER Macro

The following parameters of the POWER macro are used in defining System/36
MSRJE work stations.

COPYSEP: Specifies whether VSE/POWER should produce separator
pages/cards between each copy of an output file. If NO is specified, the separator
pages/cards are suppressed. If YES is specified, separator pages/cards are
included between each copy of an output file. However, copy separation is done
only for nonzero JSEP specification, defined either during VSE/POWER
generation or in a JECL (Job Entry Control Language) statement.

Default: YES.

DBLK: Specifies the block size of data file records and, consequently, the size of
each data buffer. Data buffers are used as I/O areas by the execution processors,
readers/writers, and RJE routines. The value specified for DBLK must be an
integer in the range 544 to 2008.

JSEP=n,m: Specifies that special pages or cards are to be included in the output to
separate job entries. n specifies the number of separator pages to be printed across
perforations. m specifies the number of separator cards. n and m may be any digit
from 0 through 9. The minimum number of separator cards is 3. For print output,
one additional page as specified by n will be printed except if 0 is specified. If
JSEP is omitted, (0,0) is assumed.

SNA: Specifies POWER as a VTAM application program. The following SNA
subparameters are used in defining System/36 MSRJE work stations.

> **LUCOUNT:** Specifies the total number of LU-to-LU sessions that can exist at
> one time. Each work station potentially represents multiple sessions. A value in
> the range 1 through 200 can be specified. System/36 MSRJE supports up to 46
> LU-to-LU sessions.

> **PASSWORD:** Specifies in 1 through 8 alphameric characters, the password
> presented to VTAM. If specified, the password must match the PRTCT
> parameter of the VTAM APPL application definition statement.

> Default: No password.

> **APPLID:** Specifies, in 1 through 8 alphameric characters, the name that the
> host has assigned to POWER. If specified, the value must match the name field
> of the VTAM APPLID definition for POWER.

> Default: POWER.

PRMT Macro

The PRMT macro and its parameters define the hardware characteristics of an RJE terminal. At least one PRMT macro must be supplied for each user. The PRMT macros must be specified in ascending sequence according to their remote-IDs, and the definitions for non-SNA remote-IDs must precede the definitions for SNA remote-IDs. The following parameters make up the PRMT macro.

REMOTE: Specifies an identification number for the work station. Work stations are numbered consecutively from 1 to 200. The first must be specified as 1, and succeeding work stations must be specified in increments of 1.

TYPE: For SNA support, the terminal must be specified as LUT1.

CONSOLE: May be specified only for an SNA work station and only if this work station has a line printer in addition to the normal terminal console.

YES causes VSE/POWER to interrupt the outbound printer flow whenever messages are generated for the remote operator.

NO prevents VSE/POWER from interrupting an outbound printer flow for the transmission of messages to the remote operator. In this case, the messages are collected and submitted to the operator after POWER END OF JOB has been reached.

PSWRD: Specifies the security password that may have been defined for the remote work station being described. The password must match the password contained in the user data of the LOGON command.

The value specified must match the entry made for the **password** operand of the **DATA** parameter in the host LOGON specified on display 35.0 during MSRJE subsystem configuration at System/36.

SESSLIM: Specifies the maximum number of SNA sessions that can exist concurrently. The maximum value that can be specified is 6.

The value specified here must be at least as large as the value specified for the prompt **Minimum number of sessions** on display 34.0 during MSRJE subsystem member configuration at System/36.

CMPACT: Specifies the name of the default compaction table to be used for this remote work station. System/36 does not support compaction.

LU: Specifies the symbolic name, or names, of this work station as they are known to VTAM. These names must be the same ones used in the VTAM logical unit definitions.

Note: *If multiple locations are configured for a single line member definition (using CNFIGICF on System/36), then all LU names that correspond to MSRJE sessions defined in the System/36 line member should be defined here. This will allow any location to use any LU.*

For additional information on VSE/POWER generation, refer to the *VSE/POWER Installation and Operations Guide.*

Appendix A. Host Subsystem Work Sheets

The following work sheets should be used to coordinate System/36 MSRJE configuration and the host subsystem generation. The values that must be the same for System/36 and the host subsystem are defined by indicating the System/36 CNFIGICF procedure display number and prompt and the host subsystem generation parameter.

It is recommended that you either have the host system personnel fill out the work sheet and then use those values to configure MSRJE, or configure MSRJE, fill out the work sheet and then give the work sheet to the host system personnel.

Note: *Changes to the host subsystem parameters and their default values sometimes occur between releases. Therefore, the information given here may not exactly reflect the host subsystem release with which you are operating.*

SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
JES2 HOST SUBSYSTEM WORK SHEET

JES2 BSC SIGNON

Enter the text to be used as the SIGNON command that the JES2 host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration at System/36 must match the value expected by JES2.

```
      1                    2                    3                    4
1     0                    0                    0                    0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
4     5                    6                    7                    8
1     0                    0                    0                    0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
```

JES2 uses the following SIGNON command format:

```
              1        2                    7
              6        5                    31
/*SIGNON     ⎧REMOTEnn⎫ [passwrd1]         [passwrd2]
             ⎩RMTnnn  ⎭
                                           S7909030-0
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **REMOTEnn** or **RMTnnn** parameter begins in position 16 and must match the value specified for System/36 in the **RMTnnn** parameter of the JES2 work station definition.	35.0		
The **passwrd1** parameter is optional and, if used, begins in position 25 and must match the value specified for the **PASSWORD** subparameter of the **LINEnnn** parameter during definition of remote work stations for JES2 at the host system.	35.0		No password
The **passwrd2** parameter is optional and, if used, must begin in position 73 and must match the value specified for the **PASSWORD** subparameter of the **RMTnnn** parameter during remote work station definition for JES2 at the host system.	35.0		No password

JES2 BSC Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value specified for the **MLBFSIZ** JES2 initialization parameter. The value specified for **Buffer length** on display 11.0 during line member configuration at System/36 must match this value.	11.0		400
The value specified for the **NUMRD** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		1
The value specified for the **NUMPR** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at the system/36 must be at least as large as this value.	36.0		1
The value specified for the **NUMPU** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0
Whether **TRANSP** or **NOTRANSP** is specified on the **LINEnnn** parameter and the **RMTnnn** parameter for JES2. **TRANSP** indicates that transparency is supported; **NOTRANSP** indicates that transparency is not supported. **TRANSP** must be specified on both the **LINEnnn** and **RMTnnn** parameters if transparency is to be used with System/36. Transparency can be selected at System/36 for the **Transparency?** prompt on display 37.0 during subsystem member configuration.	37.0		NOTRANSP

BSC
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
JES3 HOST SUBSYSTEM WORK SHEET

JES3 BSC SIGNON

Enter the text to be used as the SIGNON command that the JES3 host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration at System/36 must match the value expected by JES3.

```
           1                   2                   3                   4
1          0                   0                   0                   0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
4          5                   6                   7                   8
1          0                   0                   0                   0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
```

JES3 uses the following SIGNON command format:

```
              1    2  2       3
1             6    2  5       5
/*SIGNON      namex[A] passwrd1 passwrd2
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **namex** parameter begins in position 16 and must match the value specified for System/36 by the **N** parameter in the **RJPTERM** statement during JES3 generation at the host system.	35.0		
The **A** in position 22 is optional and, if used, defines System/36 as a programmable RJE work station with readers that do not require operator intervention (automatic readers).	35.0		
The **passwrd1** parameter begins in position 25 and must match the value specified for the **P** subparameter of the **RJPLINE** parameter during JES3 generation at the host system. The value is 1 through 8 alphameric characters.	35.0		8 blanks
The **passwrd2** parameter begins in position 35 and must match the value specified for the **P** subparameter in the **RJPTERM** statement during JES3 generation at the host system. The value is 1 through 8 alphameric characters.	35.0		8 blanks

JES3 BSC Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value specified for the **B** subparameter of the **RJPTERM** statement during JES3 work station definition at the host system. The value specified for **Buffer length** on display 11.0 during line member configuration at System/36 must match this value.	11.0		400
The value specified for the **RD** subparameter of the **RJPTERM** statement during JES3 work station definition. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		0
The value specified for the **PR** subparameter of the **RJPTERM** statement during JES3 work station definition. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0
The value specified for the **PU** subparameter of the **RJPTERM** statement during JES3 work station definition. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0
Whether **F=NTRS** is specified on the **RJPTERM** statement during JES3 work station definition. **F=NTRS** indicates that transparency is not supported. Transparency can be selected at System/36 for the **Transparency?** prompt on display 37.0 during subsystem member configuration.	37.0		Transparency is assumed

BSC
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
RES HOST SUBSYSTEM WORK SHEET

RES BSC LOGON

Enter the text to be used as the LOGON command that the RES host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration at System/36 must match the value expected by RES.

```
      1              2              3              4
 1    0              0              0              0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
 4    5              6              7              8
 1    0              0              0              0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
```

RES uses the following LOGON command format:

```
LOGON userid[/password] TERM(termid) [PROC(procname)] [{NOTICES  }][{MAIL  }]
                                                        {NONOTICES} {NOMAIL}
```

S7909031-0

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **userid** parameter must match the value specified for System/36 on the ADD subcommand of the account command.	35.0		
The **password** parameter is optional and, if used, must be separated from the **userid** by a slash (/) and must match the value specified in the ADD command (during RTAM generation) for the associated **userid**. The value is 1 through 8 alphameric characters.	35.0		
The **TERM** parameter identifies the RJE work station and must match the value specified for System/36 in the **TERMID** parameter of the **TERMINAL** macro for the RTAM generation.	35.0		
The **PROC** parameter allows you to specify a cataloged procedure at the host system that is to be executed as a part of the logon process.	35.0		

RES BSC Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
NOTICES/NONOTICE allows you to specify whether all general notices from RES are to be listed at System/36 after logon. **NOTICES**, the default, specifies that notices will be listed; **NONOTICES** specifies that notices are not to be listed.	35.0		
MAIL/NOMAIL allows you to specify whether messages directed to System/36 are to be automatically listed after logon. **MAIL**, the default, specifies that messages are to be listed. **NOMAIL** specifies that messages are not to be automatically listed.	35.0		
The value specified for the **TPBFSIZ** parameter of the **RTAM** macro for the RTAM stage 1 generation at the host system. The value specified for **Buffer length** on display 11.0 during line member configuration at System/36 must match this value.	11.0		512
The value specified for the **RDRS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		1
The value specified for the **PTRS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		1
The value specified for the **PCHS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		1
The value specified for subparameter 4 of the **TDESCR** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. If that value is **2**, transparency for the terminal is not supported. If the value is **3**, transparency for the terminal is supported. The value specified for subparameter 2 of the **LDESCR** parameter of the **LINE** macro for the RTAM stage 1 generation. If that value is **0**, transparency for the line is not supported. If the value is **1**, transparency for the line is supported. These values correspond to the **Transparency?** prompt on display 37.0 during subsystem member configuration at System/36.	37.0		

BSC
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
VM/370 RSCS HOST SUBSYSTEM WORK SHEET

VM/370 RSCS SIGNON

Enter the text to be used as the SIGNON command that the RSCS host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration as System/36 must match the value expected by RSCS.

```
       1                2                3                4
1      0                0                0                0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
4      5                6                7                8
1      0                0                0                0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
```

RSCS uses the following SIGNON command format:

```
                  1       2
1                 6       5
/*SIGNON          REMOTEnn[password]
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **REMOTEnn** parameter begins in position 16 and must match the value specified by the **Mrn** parameter for System/36 in the **START** command for RSCS at the host system.	35.0		
The **password** parameter is optional and, if used, begins in position 25 and must match the value specified for **password** in the **START** command at the host system. The value is 1 through 8 alphameric characters.	35.0		No password

VM/370 RSCS Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value specified for the **Bnnnn** parameter of the RSCS **START** command. The value specifed for **Buffer length** on display 11.0 during line member configuration at System/36 must match this value.	11.0		400
RSCS supports one reader only. Specify **1** for the **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36.	37.0	1	
RSCS supports **0** or **1** printer. If your application generates print output that is returned to System/36, specify **1**; otherwise, specify **0**. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		
RSCS supports **0** or **1** punch. If your application generates punch output that is returned to System/36, specify **1**; otherwise, specify **0**. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		
RSCS always sends punch data in transparent mode and accepts transparent data. Specify **Y** for the **Transparency?** prompt on display 37.0.	37.0	Y	

SNA
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
NCP/VTAM CONFIGURATION WORK SHEET

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value specified for the **IDBLK** parameter of **PU** macro during NCP/VTAM generation must be 03E for System/36.	13.0		
The values specified for the **IDNUM** parameter of **PU** macro during NCP/VTAM generation. The value specified for **Local system's station XID in hexadecimal** on display 13.0 during line member configuration at System/36 must be equal to this value.	13.0		
The value specified for the **ADDR** parameter of the **PU** macro during NCP/VTAM generation. The value specified for **Local system's station address** on display 13.0 during line member configuration at System/36 must be the same as this value.	13.0		
The value specified in the **START** procedure for NCP/VTAM as the system services control point identifier (SSCPID). The value specified for **SSCP identification** on display 13.0 during line member configuration at System/36 must be the same as this value.	13.0		•
The values specified for the **LOCADDR** parameters of the **LU** macros during NCP/VTAM generation. The values selected on display 14.0 during line member configuration at System/36 must equal these values. Up to 255 LU addresses can be assigned to System/36.	14.0		
The name assigned to the log mode table to be used for MSRJE. The name is specified by the **MODETAB** parameter of the **PU** macro.	35.0		

SNA
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
JES2 HOST SUBSYSTEM WORK SHEET

JES2 SNA LOGON

Enter the text to be used as the LOGON command that the JES2 host subsystem is expecting from the System/36. The value specified on display 35.0 during subsystem member configuration at System/36 must match the value expected by JES2.

```
           1            2            3            4
1          0            0            0            0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
4          5            6            7            8
1          0            0            0            0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
```

JES2 uses the following LOGON command format:

```
LOGON APPLID(JES2)[LOGMODE(modename)][DATA(RMTnn [,password1] [,password2])]
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value for the **APPLID** parameter is normally specified as **JES2**.	35.0		JES2
The value entered for the **LOGMODE** parameter, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. You should obtain the name of the **LOGMODE** entry from the host system personnel. The table that contains the entry specified is selected by the **MODETAB** parameter of the **PU** macro during NCP/VTAM generation at the host system. The table itself is defined using the **MODEENT** macro.	35.0		
The values entered for the **DATA** parameter.			
The **RMTnnn** parameter specifies the terminal number of System/36 as specified in the **RMTnnn** parameter of the host system's remote terminal description.	35.0		
The **password1** parameter is optional and, if specified, is 1 through 8 alphameric characters and must match the password specified for the **PASSWORD** subparameter of the **LINEnnn** parameter during the definition of a remote work station for JES2 at the host system.	35.0		8 blanks

JES2 SNA Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **password2** parameter is optional and, if used, is 1 through 8 alphameric characters and must match the value specified for the **PASSWORD** parameter of the **RMTnnn** parameter during remote work station definition for JES2 at the host system.	35.0		No password
The value specified for the **NUMRD** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		1
The value specified for the **NUMPR** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0
The value specified for the **NUMPU** subparameter of the **RMTnnn** parameter on the JES2 work station definition. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0

SNA
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
JES3 HOST SUBSYSTEM CONFIGURATION WORK SHEET

JES3 SNA LOGON

Enter the text to be used as the LOGON command that the JES3 host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration as System/36 must match the value expected by JES3.

```
     1                    2                    3                    4
1    0                    0                    0                    0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
4                    5                    6                    7                    8
1                    0                    0                    0                    0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
```

JES3 uses the following LOGON command format:

```
LOGON APPLID(JES3) [LOGMODE(modename)] [DATA(wsname,password)]
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value for the **APPLID** parameter is normally specified as **JES3**.	35.0		JES3
The value entered for the **LOGMODE** parameter, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. You should obtain the name of the **LOGMODE** entry from the host system personnel. The table that contains the entry specified is selected by the **MODETAB** parameter of the **PU** macro during NCP/VTAM generation at the host system. The table itself is defined using the **MODEENT** macro.	35.0		
The values entered for the **DATA** parameter.			
The **wsname** parameter must match the value specified for System/36 by the **N** parameter in the **RJPWS** statement during JES3 generation at the host system.	35.0		
The **password** parameter must match the value specified for the **P** parameter of the **RJPWS** parameter during JES3 generation at the host system. The value is 1 through 8 alphameric characters.	35.0		

JES3 SNA Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value specified for the **RD** subparameter of the **RJPWS** statement during JES3 work station definition. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		1
The value specified for the **PR** subparameter of the **RJPWS** statement during JES3 work station definition. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		1
The value specified for the **PU** subparameter of the **RJPWS** statement during JES3 work station definition. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		0

SNA
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
RES HOST SUBSYSTEM CONFIGURATION WORK SHEET

RES SNA LOGON

Enter the text to be used as the LOGON command that the RES host subsystem is
expecting from System/36. The value specified on display 35.0 during subsystem
member configuration as System/36 must match the value expected by RES.

```
      1                 2                 3                 4
1     0                 0                 0                 0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
4            5                 6                 7                 8
1            0                 0                 0                 0
_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_|_
```

RES uses the following LOGON command format:

```
LOGON APPLID(RTAM)[ LOGMODE(mode)]
⎡DATA('userid[/password] TERM(termid)[ PROC(procname)]⎧NOTICES  ⎫⎡MAIL  ⎤')⎤
⎣                                                      ⎩NONOTICES⎭⎣NOMAIL⎦   ⎦
                                                                S7909032-0
```

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value for the **APPLID** parameter is normally specified as **RTAM**.	35.0		RTAM
The value entered for the **LOGMODE** parameter, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. You should obtain the name of the **LOGMODE** entry from the host system personnel. The table that contains the entry specified is selected by the **MODETAB** parameter of the **PU** macro during NCP/VTAM generation at the host system. The table itself is defined using the **MODEENT** macro.	35.0		
The values entered for the **DATA** parameter.			
The **userid** parameter must match the value specified for System/36 on the **ADD** subcommand of the **ACCOUNT** command.	35.0		

RES SNA Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **password** parameter is optional and, if used, must be separated from the **userid** by a slash (/) and must match the value specified in the ADD command (for the RTAM generation) for the associated **userid**. The value is 1 through 8 alphameric characters.	35.0		
The **TERM** parameter identifies the RJE work station and must match the value specified for System/36 in the **TERMID** parameter of the **TERMINAL** macro for the RTAM generation at the host system.	35.0		
FIT'3'.The **PROC** parameter allows you to specify a cataloged procedure at the host system that is to be executed as a part of the logon process.	35.0		
NOTICES/NONOTICE allows you to specify whether all general notices from RES are to be listed at System/36 after logon. **NOTICES**, the default, specifies that notices will be listed; **NONOTICES** specifies that notices are not to be listed.	35.0		
MAIL/NOMAIL allows you to specify whether messages directed to System/36 are to be automatically listed after logon. **MAIL**, the default, specifies that messages are to be listed. **NOMAIL** specifies that messages are not to be automatically listed.	35.0		
The value specified for the **RDRS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation at the host system. The value specified for **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36 must be less than or equal to this value.	37.0		1
The value specified for the **PTRS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		1
The value specified for the **PCHS** parameter of the **TERMINAL** macro for the RTAM stage 1 generation. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		1

SNA
SYSTEM/36 MULTIPLE SESSION REMOTE JOB ENTRY
VSE/POWER HOST SUBSYSTEM WORK SHEET

VSE/POWER SNA LOGON

Enter the text to be used as the LOGON command that the VSE/POWER host subsystem is expecting from System/36. The value specified on display 35.0 during subsystem member configuration as System/36 must match the value expected by VSE/POWER.

```
        1               2               3               4
1       0               0               0               0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
4       5               6               7               8
1       0               0               0               0
_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_I_
```

VSE/POWER uses the following LOGON command format:

```
LOGON APPLID(POWER)[LOGMODE(mcdename)][DATA('remid,[password],[user information]')]
```
S7909036-0

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The value for the **APPLID** parameter is normally specified as **POWER**.	35.0		POWER
The value entered for the **LOGMODE** parameter, if used, specifies the name of an entry in a table at the host system that contains the operating parameters for SNA communications. The table that contains the entry specified is selected by the **MODETAB** parameter of the **PU** macro during NCP/VTAM generation at the host system. The table itself is defined using the **MODEENT** macro.	35.0		
The values entered for the **DATA** parameter.			
The **remid** parameter identifies the remote ID assigned to System/36 during VSE/POWER generation at the host system. It must match the value specified for the **REMOTE** parameter in the **PRMT** statement during VSE/POWER generation.	35.0		
The **password** parameter, if used, is 1 through 8 alphameric characters and must match the value specified for the **PSWRD** subparameter of the **PRMT** statement.	35.0		

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
The **user information**, if used, can be up to 16 bytes of data. Ask the host system personnel whether this information is needed.	35.0		

VSE/POWER SNA Configuration

Generation Parameter Description	System/36 CNFIGICF Display	Host Configuration Entry	Host Default Value
VSE/POWER supports one reader only. Specify **1** for the **Maximum number of host readers** on display 37.0 during subsystem member configuration at System/36.	37.0	1	
VSE/POWER supports up to 3 printers. If your application generates print output that is returned to System/36, specify **1, 2**, or **3**; otherwise, specify **0**. The value specified for **Maximum number of printers** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		
VSE/POWER supports **0** or **1** punches. If your application generates punch output that is returned to System/36, specify **1**; otherwise, specify **0**. The value specified for **Maximum number of punches** on display 36.0 during subsystem member configuration at System/36 must be at least as large as this value.	36.0		

Appendix B. System/36 SNA MSRJE Bind Command Format

VTAM is responsible for sending the bind command to System/36. Receipt of a correctly formatted bind command is required before MSRJE can be successfully started.

Note: *If System/36 rejects the received bind command, you should contact the host personnel to verify the contents of the entire bind command. This is necessary because when System/36 detects an invalid byte in the bind command, it rejects that bind command and performs no further checking. Therefore, even if you correct the detected invalid byte, any remaining invalid bytes will cause further rejections of the bind command.*

The bind command received by System/36 must contain the following entries:

Byte (Decimal)	Recommended Hex Value	MODETAB Operand Name	Meaning
2	03	FMPROF	Function management (FM) profile.
3	03	TSPROF	Transmission services (TS) profile.
4	A1 or A3[1]	PRIPROT	Primary logical unit profile.
5	A1 or A3[1]	SECPROT	Secondary logical unit profile.
6,7	7080	COMPROT	Common protocol. Hex 7080 specifies that function management headers are used, brackets are used, bracket termination rule 1 is used, and alternate code is used.
8	07	SSNDPAC	Secondary send pacing.
9	07	SRCVPAC	Secondary receive pacing.
10,11	8585	RUSIZES	Request/response unit size. Hex 8585 specifies 256 bytes, as required by MSRJE.

---

[1] Specify A3 if you want compression.

Byte (Decimal)	Recommended Hex Value	MODETAB Operand Name	Meaning
14-25		PSERVIC	Presentation services (PS) profile (12 bytes).
14	01	PSERVIC, byte 1	Hex 01 specifies logical unit presentation services profile 1.
15	10	PSERVIC, byte 2	Hex 10 specifies function management header subset 1.
16,17	2000	PSERVIC, bytes 3 and 4	Specifies the primary function management header subset flags. Hex 2000 specifies that PDIRs should be sent.
18	F1	PSERVIC, byte 5	Primary data stream subset flags. Hex F1 specifies interactive data stream, horizontal format data stream, vertical tab data stream, vertical select data stream, and transparency data stream.
19	00	PSERVIC, byte 6	Not used. Specify hex 00.
20	C0	PSERVIC, byte 7	Primary media flags. Hex C0 specifies document output and card format.
21,22	0000	PSERVIC, bytes 8 and 9	Specifies the secondary function management header subset flags. Specify 0000.
23	01	PSERVIC, byte 10	Secondary data stream subset flags. Specify hex 01 for transparency data stream.
24	00	PSERVIC, byte 11	Not used. Specify hex 00.
25	40	PSERVIC, byte 12	Specifies the secondary media flags. Specify hex 40 for card format.

For a complete description of the bind command format, see the *VTAM System Programmer's Guide*.

Appendix C. MSRJE Examples

Two examples of MSRJE are provided in this appendix. Included for each are the configuration displays (from the CNFIGICF procedure), the MSRJE utility control statements, and the host system JCL sent by MSRJE to the host system.

The definition of the forms control table is also shown. The same table is used for both examples.

System/36 MSRJE to RES (BSC)

This example illustrates using System/36 MSRJE to communicate with a BSC host system that is running RES under OS/VS1. Communications will occur over a nonswitched communications line.

Line Member Configuration

The following displays show the attributes specified for the BSC line member, which is named REBSCL1 and is in library RJELIB.

```
  1.0              SSP-ICF CONFIGURATION MEMBER DEFINITION                W1


1. Configuration member name  . . . . . . . . . . . . . . . . . REBSCL1

2. Library name . . . . . . . . . . . . . . . . . . . . . . . . RJELIB

3. Select one of the following:
        1. Create new member
        2. Edit existing member
        3. Create new member from existing member
        4. Remove a member
        5. Review a member
     Option . . . . . . . . . . . . . . . . . . . . . . . . 1-5   1




  Cmd7-End      Cmd19-Cancel

     Help text available throughout CNFIGICF by pressing the help key
```

The name (REBSCL1) entered for prompt 1 is referenced on display 20.0 during subsystem member configuration.

```
    2.0                    SSP-ICF CONFIGURATION MEMBER TYPE              REBSCL1    W1

Select one of the following options:
        1. INTRA
        2. BSC
        3. SNA
        4. ASYNC

    Option  2                                      ´




    Cmd3-Previous display                               Cmd19-Cancel
                                                             COPR IBM Corp. 1986
```

```
    3.0                    BSC CONFIGURATION MEMBER TYPE                  REBSCL1    W1

1. BSC member type . . . . . . . . . . . . . . . . . . 1,2    2
        1. BSC subsystem member
        2. BSC line member







                                                    Cmd19-Cancel
                                                         COPR IBM Corp. 1986
```

```
  3.0                    BSC CONFIGURATION MEMBER TYPE               REBSCL1    W1

1. BSC member type . . . . . . . . . . . . . . . . . . . 1,2    2
        1. BSC subsystem member
        2. BSC line member


2. Is this for MSRJE     . . . . . . . . . . . . . . . . . Y,N    Y








                                                     Cmd19-Cancel
                                                          COPR IBM Corp. 1986
```

```
  10.0                    BSC LINE MEMBER ATTRIBUTES               REBSCL1    W1

1. Line type  . . . . . . . . . . . . . . . . . . . . . . . 2
                          2-Nonswitched pt-pt     3-Switched pt-pt
2. Error retry count  . . . . . . . . . . . . . . . . . 1-255    7










                          Cmd19-Cancel
```

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│    10.5                    REMOTE SYSTEM SELECTION          REBSCL1    W1  │
│                                                                       │
│   1. Select from the following options:                               │
│        1-Create                                                       │
│                                                                       │
│      Option . . . . . . . . . . . . . . . . . . . . . . . . 1         │
│   2. Remote system name . . . . . . . . . . . . . . . . . . . NBSRES   │
│   ------------------------------------------------------------------   │
│    OPTION   REMOTE SYSTEM   OPTION  REMOTE SYSTEM   OPTION  REMOTE SYSTEM │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                Cmd8-Reset          Cmd19-Cancel                       │
│                                                                       │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────────────┐
│                                                                       │
│    11.0                    REMOTE SYSTEM ATTRIBUTES         REBSCL1    W1  │
│                  Remote system NBSRES                                 │
│                                                                       │
│                                                                       │
│    2. Buffer length  . . . . . . . . . . . . . . . . . 200-4096  1880  │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│                                                                       │
│    Cmd7-End      Cmd19-Cancel                                         │
│                                                                       │
└─────────────────────────────────────────────────────────────────────┘
```

The name (NBSRES) entered for prompt 1 is referenced during subsystem member
configuration on display 29.0.

The value (1880) entered for prompt 3 must match the value specified at the host
system for the TPBFSIZ parameter of the RTAM macro during RTAM stage 1
generation.

Subsystem Member Configuration

The following displays show the attributes specified for the BSC subsystem member, which is named REBSCS1 and is in library RJELIB.

```
  1.0              SSP-ICF CONFIGURATION MEMBER DEFINITION              W1


  1. Configuration member name  . . . . . . . . . . . . . . . . .  REBSCS1

  2. Library name . . . . . . . . . . . . . . . . . . . . . . . .  RJELIB

  3. Select one of the following:
        1. Create new member
        2. Edit existing member
        3. Create new member from existing member
        4. Remove a member
        5. Review a member
     Option . . . . . . . . . . . . . . . . . . . . . . . . 1-5   1




  Cmd7-End      Cmd19-Cancel
```

Note that the library specified for prompt 2 must be the same library in which the associated line member (REBSCL1) is stored.

```
  2.0                 SSP-ICF CONFIGURATION MEMBER TYPE          REBSCS1    W1

  Select one of the following options:
        1. INTRA
        2. BSC
        3. SNA
        4. ASYNC

     Option  2






  Cmd3-Previous display                        Cmd19-Cancel
                                                   COPR IBM Corp. 1986
```

```
┌─────────────────────────────────────────────────────────────┐
│   3.0                  BSC CONFIGURATION MEMBER TYPE              REBSCS1    W1 │
│ 1. BSC member type . . . . . . . . . . . . . . . . . . . 1,2     1 │
│         1. BSC subsystem member                                 │
│         2. BSC line member                                      │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                                                 │
│                                     Cmd19-Cancel                │
│                                            COPR IBM Corp. 1986   │
└─────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────┐
│   20.0                BSC SUBSYSTEM MEMBER SELECTION             REBSCS1    W1 │
│                                                                 │
│                                                                 │
│ 1. Line member name . . . . . . . . . . . . . . . . . . . . REBSCL1 │
│                                                                 │
│ 2. Select subsystem type from the following options:           │
│         1. BSC CCP                                              │
│         2. BSC CICS                                             │
│         3. BSCEL                                                │
│         4. BSC IMS/IRSS                                         │
│         5. BSC 3270                                             │
│         6. BSC MSRJE                                            │
│      Option . . . . . . . . . . . . . . . . . . . . . . . 1-6   6 │
│                                                                 │
│                                                                 │
│                                                                 │
│    Cmd3-Previous display                      Cmd19-Cancel      │
│                                                                 │
│                                                                 │
└─────────────────────────────────────────────────────────────┘
```

The line member name was specified on display 1.0 during line member
configuration.

```
   29.0                     REMOTE LOCATION SELECTION              REBSCS1    W1

1. Select from the following options:
      1-Create

   Option  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
2. Remote location name  . . . . . . . . . . . . . . . . . . . . . . LOC1
3. Remote system name  . . . . . . . . . . . . . . . . . . . . . . . NBSRES
  -----------------------------------------------------------------------------
OPTION    LOCATION       REMOTE SYSTEM                         Page 1 of 1
                           NBSRES




              Cmd8-Reset         Cmd19-Cancel        Roll-Page
```

The remote system in the line member is NBSRES, as specified on display 11.0
during line member configuration.

```
   30.0                    REMOTE LOCATION DEFINITION            REBSCS1    W1

        Remote system NBSRES                Remote location LOC1

1. Activate location at ENABLE? . . . . . . . . . . . . . . . Y,N   Y








                                Cmd19-Cancel
```

The value (NBSRES) is carried over from display 29.0, and was originally defined on display 11.0 during line member configuration. The location name (LOC1) is the value used in the MSRJE procedure command to start a session with this location.

```
  34.0               MSRJE SUBSYSTEM MEMBER ATTRIBUTES              REBSCS1    W1


      Remote system NBSRES          Remote location LOC1

  1. Host name  . . . . . . . . . . . . . . . . . . . . . . . . . .   RES

  2. Termination delay in minutes  . . . . . . . . .  0-99,blank

  3. Priority . . . . . . . . . . . . . . . . . . . . . . H,M,N,L  N




  6. Display informational messages?  . . . . . . . . . . . . . Y,N  Y


                                              Cmd19-Cancel
```

```
  35.0                   MSRJE LOGON ATTRIBUTES                     REBSCS1    W1

       Remote system NBSRES          Remote location LOC1




  3. Enter host LOGON/SIGNON command below:
  ....10....:...20....:...30....:...40....:...50....:...60....:...70....:....
  LOGON DEV03 TERM(3) PROC(MRJEPROC)




                                              Cmd19-Cancel
```

The value (MRJEPROC) specified for the PROC parameter of the LOGON command identifies a procedure at the host system that is to be started when System/36 logs on to the host system. The procedure is stored in SYS1.PROCLIB.

```
  36.0                 MSRJE PRINTER/PUNCH ATTRIBUTES              REBSCS1     W1

        Remote system NBSRES          Remote location LOC1

  1. Forms control table name . . . . . . . . . . . . . . . . . . . .   FCT

  2. Forms set  . . . . . . . . . . . . . . . . . . . . . . . . 0-8   0

  3. Maximum number of printers . . . . . . . . . . . . . . . . 0-7   01

  4. Printer file sequence number . . . . . . . . . . . . . . 1-99   01

  5. Maximum number of punches  . . . . . . . . . . . . . . . . 0-7   01

  6. Punch file sequence number . . . . . . . . . . . . . . . 1-99   01


                                            Cmd19-Cancel
```

The forms control table (FCT) is described under "Creating the Forms Control Table" later in this appendix. Note that the forms control table specified here must be created before this subsystem member is used for MSRJE.

```
  37.0                    MSRJE READER ATTRIBUTES                  REBSCS1     W1

        Remote system NBSRES          Remote location LOC1

  1. Maximum number of MSRJE readers  . . . . . . . . . . . 1-32  01

  2. Maximum number of host readers . . . . . . . . . . . . . 1-7  01

  3. Transparency?  . . . . . . . . . . . . . . . . . . . . . Y,N  N

  4. Specify default value for TYPE . . . . . . . . . . . . P,D,S  P

  5. Specify default value for CMD  . . . . . . . . . . . . . Y,N  Y

  6. Specify default value for DEL  . . . . . . . . . . . . . Y,N  N


                                            Cmd19-Cancel
```

Running MSRJE

The following procedure command is used at System/36 to specify communications line 1 as being a nonswitched line:

```
ALTERCOM 1,NONSWTCH
```

The ENABLE command is used to start the subsystem and location on line 1. The subsystem name is REBSCS1, as defined on display 1.0 during subsystem member configuration. There is only one location (LOC1) in the subsystem member, and it is specified as being activated when the subsystem is enabled.

```
ENABLE REBSCS1,RJELIB,1
```

The MSRJE procedure command is entered to start MSRJE and to start the MSRJE console. Note that the location name (LOC1) is as defined on display 30.0 during MSRJE subsystem configuration.

```
MSRJE LOC1,,,,,,CONSOLE
```

A second MSRJE procedure command is entered from another display station to start an MSRJE reader and to send a procedure member (REDGPRT) to the host system. Once the reader is started, the display station is released. Note that the library used is the current library, REDGPRT is a procedure member (the default specified for type on display 37.0 during MSRJE subsystem member configuration is P), and the member does not contain MSRJE utility control statements (the default for the CMD parameter is N, as specified on display 37.0 during subsystem member configuration).

Print output is returned from the host system after the member has been sent.

```
MSRJE LOC1,REDGPRT,,,,,RELEASE
```

A third MSRJE procedure command is entered to start an MSRJE reader and to send a procedure member (REDGPUN) to the host system. Once the reader is started, the display station is released. Note that the library used is the current library, REDGPUN is a procedure member (the default specified for type on display 37.0 during MSRJE subsystem member configuration is P), and the member does not contain MSRJE utility control statements (the default for the CMD parameter is N, as specified on display 37.0 during subsystem member configuration).

Punch output is returned from the host system after the member has been sent.

```
MSRJE LOC1,REDGPUN,,,,,RELEASE
```

After MSRJE processes the punch data, procedure TEST1 in library RJELIB is started. You specify this procedure and library when updating the punch entry, FU1, in the forms control table. TEST1 contains a LISTFILE procedure that lists the contents of the file you just created:

```
LISTFILE ?2?,?1?
```

The following is the data that is sent to the host system when procedure member REDGPRT is read by MSRJE.

```
//REDGPRT JOB ,Z
//S1 EXEC PGM=IEBDG,PARM='LINECNT=9999'
//SYSPRINT DD SYSOUT=A
//SYSOUT1   DD SYSOUT=(A,,FR1),DCB=(LRECL=133,BLKSIZE=133,
          RECFM=FBA)
//SYSIN     DD *
      DSD   OUTPUT=(SYSOUT1)
      FD    NAME=FIELD1,LENGTH=50,STARTLOC=1,PICTURE=50,
      '0100 RECORDS OF RJE PRINTER OUTPUT ------------- '
      FD    NAME=FIELD2,LENGTH=51,STARTLOC=51,PICTURE=51,
      'SPECIAL FORM = FR1 --------- THIS IS RECORD NUMBER '
      FD    NAME=FIELD3,LENGTH=04,STARTLOC=102,FORMAT=ZD,
      INDEX=1
      CREATE QUANTITY=0100,NAME=(FIELD1,FIELD2,FIELD3)
END
/*
//
```

The fourth record in the member

```
//SYSOUT1   DD SYSOUT=(A,,FR1),DCB=(LRECL=133,BLKSIZE=133,
          RECFM=FBA)
```

specifies the forms name that will be returned to System/36 (FR1). The forms control table (FCT) specified on display 36.0 during subsystem member configuration is searched for an entry name FR1 when the output is returned.

The following is the data that is sent to the host system when procedure member REDGPUN is read by MSRJE.

```
//REDGPUN JOB ,Z
//S1 EXEC PGM=IEBDG
//SYSPRINT DD SYSOUT=A
//SYSOUT1  DD SYSOUT=(B,,FU1),DCB=(LRECL=80,BLKSIZE=80,
           RECFM=FB)
//SYSIN    DD *
     DSD  OUTPUT=(SYSOUT1)
     FD   NAME=FIELD1,LENGTH=35,STARTLOC=1,PICTURE=35,
     '0100 RECORDS OF PUNCH OUTPUT -- SPE'
     FD   NAME=FIELD2,LENGTH=41,STARTLOC=36,PICTURE=41,
     'CIAL FORM = FU1 -- THIS IS RECORD NUMBER '
     FD   NAME=FIELD3,LENGTH=04,STARTLOC=77,FORMAT=ZD,
     INDEX=1
     CREATE QUANTITY=0100,NAME=(FIELD1,FIELD2,FIELD3)
END
/*
//
```

The fourth record in the member

```
//SYSOUT1  DD SYSOUT=(B,,FU1),DCB=(LRECL=80,BLKSIZE=80,
           RECFM=FBA)
```

specifies the forms name that will be returned to System/36 (FU1). The forms control table (FCT) specified on display 36.0 during subsystem member configuration is searched for an entry named FU1 when the output is returned.

The following is the procedure (MRJEPROC) at the host system (in SYS1.PROCLIB) that is executed when System/36 logs on to the host system. This is the same procedure as specified for the PROC parameter in the LOGON command on display 34.0 during subsystem member configuration.

```
//
  SF ,RD1
  SF ,RD2
  SF ,RD3
  SF ,PU1
  SF ,PR1
 MN JOBNAMES,T
```

Note that host readers RD2 and RD3 are not used by MSRJE because display 37.0 specifies one host reader.

System/36 MSRJE to RES (SNA)

This example illustrates using System/36 MSRJE to communicate with a SNA host system that is running RES under OS/VS1. Communications will occur over a nonswitched communications line.

Line Member Configuration

The following displays show the attributes specified for the SNA line member, which is named RESNAL1 and is in library RJELIB.

Note: *If you are interested in an example of an SNA/X.25 line member configuration see the System Reference manual.*

```
   1.0                SSP-ICF CONFIGURATION MEMBER DEFINITION              W1


   1. Configuration member name  . . . . . . . . . . . . . . . .   RESNAL1

   2. Library name . . . . . . . . . . . . . . . . . . . . . . .   RJELIB

   3. Select one of the following:
          1. Create new member
          2. Edit existing member
          3. Create new member from existing member
          4. Remove a member
          5. Review a member
      Option . . . . . . . . . . . . . . . . . . . . . . . . 1-5   1




   Cmd7-End      Cmd19-Cancel

      Help text available throughout CNFIGICF by pressing the nelp key
```

The name (RESNAL1) entered for prompt 1 is referenced on display 21.0 during subsystem member configuration.

```
  2.0                SSP-ICF CONFIGURATION MEMBER TYPE              REBSCL1    W1

Select one of the following options:
        1. INTRA
        2. BSC
        3. SNA
        4. ASYNC

   Option  2









   Cmd3-Previous display                        Cmd19-Cancel
                                                   COPR IBM Corp. 1986
```

```
  4.0                   SNA CONFIGURATION MEMBER TYPE              RESNAL1    W1

1. SNA member type . . . . . . . . . . . . . . . . . .  1,2,3  2
        1. SNA subsystem member
        2. SNA/SDLC line member
        3. SNA/X.25 line member










                                                Cmd19-Cancel
                                                   COPR IBM Corp. 1986
```

```
 4.0                    SNA CONFIGURATION MEMBER TYPE              RESNAL1    W1

1. SNA member type . . . . . . . . . . . . . . . . . . . . 1,2,3   2
        1. SNA subsystem member
        2. SNA/SDLC line member
        3. SNA/X.25 line member


2. Will APPC be used ?  . . . . . . . . . . . . . . . . . . Y,N   N





                                              Cmd19-Cancel
                                                    COPR IBM Corp. 1986
```

```
12.0              SNA LINE MEMBER ATTRIBUTES                  RESNAL1    W1

1. Data link protocol . . . . . . . . . . . . . . . . . . . . 2
   1-Primary                 2-Secondary

2. Line type  . . . . . . . . . . . . . . . . . . . . . . . 1
   1-Nonswitched     2-Switched        3-X.21 Short hold mode








             Cmd19-Cancel
```

```
12.0              SNA LINE MEMBER ATTRIBUTES              RESNAL1    W1

1. Data link protocol . . . . . . . . . . . . . . . . . . . . 2
   1-Primary              2-Secondary

2. Line type  . . . . . . . . . . . . . . . . . . . . . . . . 1
   1-Nonswitched     2-Switched        3-X.21 short hold mode




5. Local system's station address . . . . . . . . . . . 01-FE  C1

6. Local system's station XID in hexadecimal . . . . . . . . . 00FC1




              Cmd19-Cancel
```

```
12.5                  REMOTE SYSTEM SELECTION              RESNAL1    W1

1. Select from the following options:
     1-Create

   Option . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
2. Remote system name . . . . . . . . . . . . . . . . . . . . . RES
-----------------------------------------------------------------------------
OPTION   REMOTE SYSTEM     OPTION   REMOTE SYSTEM     OPTION   REMOTE SYSTEM








          Cmd8-Reset          Cmd19-Cancel
```

```
 13.0                    REMOTE SYSTEM ATTRIBUTES                    RESNAL1    W1

         Remote system RES

 1. Remote system type . . . . . . . . . . . . . . . . . . . . . .  1
    1-Host                2-Peer












    Cmd7-End        Cmd19-Cancel
```

The name (RES) entered for prompt 1 is referenced during subsystem member
configuration on display 29.0. After the Enter key is pressed, another prompt is
added to display 13.0:

```
  13.0                    REMOTE SYSTEM ATTRIBUTES                    RESNAL1    W1

          Remote system RES

  1. Remote system type . . . . . . . . . . . . . . . . . . . . .  1
     1-Host                2-Peer










     8. SSCP identification  . . . . . . . . . . . . . . . . . 0-65535  00002

     Cmd7-End        Cmd19-Cancel
```

Display 14.0 defines the logical unit sessions that are to be used by MSRJE.

```
 14.0          REMOTE SYSTEM LOGICAL UNIT ASSIGNMENTS            RESNAL1      W1
Specify the subsystem associated with each LU:
  A-SNUF,      B-3270,      C-MSRJE,                   E-DHCF

LU Code   LU Code   LU Code   LU Code   LU Code   LU Code   LU Code   LU Code
   1  C      2  C      3  C      4  C      5  C      6  C      7  C      8  C

   9  C     10  C     11  C     12  C     13  C     14  C     15  C     16  C

  17  C     18  C     19  C     20  C     21  C     22  C     23  C     24  C

  25  C     26  C     27  C     28  C     29  C     30  C     31  C     32  C

  33        34        35        36        37        38        39        40

  41        42        43        44        45        46        47        48

  49        50        51        52        53        54        55        56

  57        58        59        60        61        62        63        64

ROLL-Page       Cmd3-Previous display     Cmd7-End      Cmd19-Cancel
```

Subsystem Member Configuration

The following displays show the attributes specified for the SNA subsystem member, which is named RESNAS1 and is in library RJELIB.

```
   1.0               SSP-ICF CONFIGURATION MEMBER DEFINITION               W1


  1. Configuration member name  . . . . . . . . . . . . . . . .  RESNAS1

  2. Library name . . . . . . . . . . . . . . . . . . . . . . .  RJELIB

  3. Select one of the following:
         1. Create new member
         2. Edit existing member
         3. Create new member from existing member
         4. Remove a member
         5. Review a member
      Option . . . . . . . . . . . . . . . . . . . . . . . . 1-5   1




  Cmd7-End      Cmd19-Cancel
```

Note that the library specified for prompt 2 must be the same library in which the associated line member (RESNAL1) is stored.

```
   2.0                  SSP-ICF CONFIGURATION MEMBER TYPE        RESNAS1    W1

  Select one of the following options:
         1. INTRA
         2. BSC
         3. SNA
         4. ASYNC

    Option   3








  Cmd3-Previous display                      Cmd19-Cancel
                                                COPR IBM Corp. 1986
```

```
  4.0                    SNA CONFIGURATION MEMBER TYPE              RESNAS1    W1

1. SNA member type . . . . . . . . . . . . . . . . . . . 1,2,3   1
        1. SNA subsystem member
        2. SNA/SDLC line member
        3. SNA/X.25 line member












                                                Cmd19-Cancel
                                                   COPR IBM Corp. 1986
```

```
  21.0                   SNA SUBSYSTEM MEMBER SELECTION            RESNAS1    W1


1. Line member name . . . . . . . . . . . . . . . . . . . . . RESNAL1

2. Select subsystem type from the following options:
        1. Peer
        2. SNA Upline
        3. SNA 3270
        4. Finance
        5. SNA MSRJE
        6. APPC
   Option . . . . . . . . . . . . . . . . . . . . . . . . 1-6   5




Cmd3-Previous display                          Cmd19-Cancel
```

The line member name was specified on display 1.0 during line member
configuration.

```
29.0                     REMOTE LOCATION SELECTION          RESNAS1   W1

1. Select from the following options:
      1-Create

   Option  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1
2. Remote location name  . . . . . . . . . . . . . . . . . . . . . LOC1
3. Remote system name  . . . . . . . . . . . . . . . . . . . . . . RES
 -------------------------------------------------------------------------------
OPTION    LOCATION       REMOTE SYSTEM                        Page 1 of 1
                            RES




            Cmd8-Reset          Cmd19-Cancel         Roll-Page
No remote locations are configured
```

The remote system in the line member is RES, as specified on display 11.0 during line member configuration.

```
30.0                     REMOTE LOCATION DEFINITION         RESNAS1   W1

      Remote system RES                    Remote location LOC1

1. Activate location at ENABLE? . . . . . . . . . . . . . . . Y,N   Y










                                    Cmd19-Cancel
```

The value (RES) is carried over from display 29.0, and was originally defined on display 11.0 during line member configuration. The location name (LOC1) is the value used in the MSRJE procedure command to start a session with this location.

```
┌──────────────────────────────────────────────────────────────────┐
│  34.0              MSRJE SUBSYSTEM MEMBER ATTRIBUTES      RESNAS1    W1 │
│                                                                    │
│        Remote system RES            Remote location LOC1           │
│                                                                    │
│  1. Host name  . . . . . . . . . . . . . . . . . . . . . . . .     │
│                                                                    │
│  2. Termination delay in minutes   . . . . . . . . .  0-99,blank   │
│                                                                    │
│  3. Priority . . . . . . . . . . . . . . . . . . . . . H,M,N,L  H  │
│                                                                    │
│  4. Maximum number of sessions . . . . . . . . . . . . .  1-46  32 │
│                                                                    │
│  5. Minimum number of sessions . . . . . . . . . . . .  1-46  01   │
│                                                                    │
│  6. Display informational messages?  . . . . . . . . . . . Y,N  Y  │
│                                                                    │
│                                                                    │
│                                           Cmd19-Cancel             │
│                                                                    │
│                                                                    │
└──────────────────────────────────────────────────────────────────┘
```

```
┌──────────────────────────────────────────────────────────────────┐
│  35.0                  MSRJE LOGON ATTRIBUTES            RESNAS1    W1 │
│        Remote system RES            Remote location LOC1           │
│                                                                    │
│  1. Is LOGON formatted?  . . . . . . . . . . . . . . . . . Y,N  N  │
│                                                                    │
│  2. Should MSRJE send first LOGON? . . . . . . . . . . . . Y,N  Y  │
│                                                                    │
│  3. Enter host LOGON/SIGNON command below:                        │
│  ....:....10....:....20....:....30....:....40....:....50....:....60....:....70....:....│
│  LOGON APPLID(RTAM) LOGMODE(S36MSRJE) DATA('DEV06 T(18) PROC(FSPROC)')│
│                                                                    │
│                                                                    │
│                                                                    │
│                                                                    │
│                                           Cmd19-Cancel             │
│                                                                    │
│                                                                    │
└──────────────────────────────────────────────────────────────────┘
```

The value (FSPROC) specified for the PROC parameter of the LOGON command
identifies a procedure at the host system that is to be started when System/36 logs
on to the host system. The procedure is stored in SYS1.PROCLIB.

```
36.0               MSRJE PRINTER/PUNCH ATTRIBUTES              RESNAS1    W1


      Remote system RES              Remote location LOC1

1. Forms control table name . . . . . . . . . . . . . . . . . .   FCT

2. Forms set  . . . . . . . . . . . . . . . . . . . . . . . 0-8  1

3. Maximum number of printers . . . . . . . . . . . . . . 0-15  01

4. Printer file sequence number . . . . . . . . . . . . . 1-99  01

5. Maximum number of punches  . . . . . . . . . . . . . . 0-15  01

6. Punch file sequence number . . . . . . . . . . . . . . 1-99  01



                                      Cmd19-Cancel
```

The forms control table (FCT) is described under "Creating the Forms Control
Table" later in this appendix. Note that the forms control table specified here must
be created before this subsystem member is used for MSRJE.

```
37.0                     MSRJE READER ATTRIBUTES              RESNAS1    W1


      Remote system RES              Remote location LOC1

1. Maximum number of MSRJE readers  . . . . . . . . . . . 1-32  01

2. Maximum number of host readers . . . . . . . . . . . . 1-15  01

3. Transparency?  . . . . . . . . . . . . . . . . . . . . . Y,N  Y

4. Specify default value for TYPE . . . . . . . . . . . . P,D,S  P

5. Specify default value for CMD  . . . . . . . . . . . . . Y,N  N

6. Specify default value for DEL  . . . . . . . . . . . . . Y,N  N



                                      Cmd19-Cancel
```

Running MSRJE

The following procedure command is used at System/36 to specify communications line 1 as being a nonswitched line:

```
ALTERCOM 1,NONSWTCH
```

The ENABLE command is used to start the subsystem and location on line 1. The subsystem name is RESNAS1, as defined on display 1.0 during subsystem member configuration. There is only one location (LOC1) in the subsystem member, and it is specified as being activated when the subsystem is enabled.

```
ENABLE RESNAS1,RJELIB,1
```

The MSRJE procedure command is entered to start MSRJE and to start the MSRJE console. Note that the location name (LOC1) is as defined on display 30.0 during MSRJE subsystem configuration.

```
MSRJE LOC1,,,,,,CONSOLE
```

A second MSRJE procedure command is entered from another display station to start an MSRJE reader and to send a procedure member (REDGPRT) to the host system. Once the reader is started, the display station is released. Note that the library used is the current library, REDGPRT is a procedure member (the default specified for type on display 37.0 during MSRJE subsystem member configuration is P), and the member does not contain MSRJE utility control statements (the default for the CMD parameter is N, as specified on display 37.0 during subsystem member configuration).

Print output is returned from the host system after the member has been sent.

```
MSRJE LOC1,REDGPRT,,,,,RELEASE
```

A third MSRJE procedure command is entered to start an MSRJE reader and to send a procedure member (REDGPUN) to the host system. Once the reader is started, the display station is released. Note that the library used is the current library, REDGPUN is a procedure member (the default specified for type on display 37.0 during MSRJE subsystem member configuration is P), and the member does not contain MSRJE utility control statements (the default for the CMD parameter is N, as specified on display 37.0 during subsystem member configuration).

Punch output is returned from the host system after the member has been sent.

```
MSRJE LOC1,REDGPUN,,,,,RELEASE
```

After MSRJE processes the punch data, procedure TEST1 in library RJELIB is started. You specify this procedure and library when updating the punch entry, FU1, in the forms control table. TEST1 contains a LISTFILE procedure that lists the contents of the file you just created:

```
LISTFILE ?2?,?1?
```

The following is the data that is sent to the host system when procedure member REDGPRT is read by MSRJE.

```
//REDGPRT JOB ,Z
//S1 EXEC PGM=IEBDG,PARM='LINECNT=9999'
//SYSPRINT DD SYSOUT=A
//SYSOUT1  DD SYSOUT=(A,,FR1),DCB=(LRECL=133,BLKSIZE=133,
             RECFM=FBA)
//SYSIN    DD *
      DSD  OUTPUT=(SYSOUT1)
      FD   NAME=FIELD1,LENGTH=50,STARTLOC=1,PICTURE=50,
      '0100 RECORDS OF RJE PRINTER OUTPUT ------------ '
      FD   NAME=FIELD2,LENGTH=51,STARTLOC=51,PICTURE=51,
      'SPECIAL FORM = FR1 --------- THIS IS RECORD NUMBER '
      FD   NAME=FIELD3,LENGTH=04,STARTLOC=102,FORMAT=ZD,
      INDEX=1
      CREATE QUANTITY=0100,NAME=(FIELD1,FIELD2,FIELD3)
END
/*
//
```

The fourth record in the member

```
//SYSOUT1  DD SYSOUT=(A,,FR1),DCB=(LRECL=133,BLKSIZE=133,
             RECFM=FBA)
```

specifies the forms name that will be returned to System/36 (FR1). The forms control table (FCT) specified on display 36.0 during subsystem member configuration is searched for an entry name FR1 when the output is returned.

The following is the data that is sent to the host system when procedure member REDGPUN is read by MSRJE.

```
//REDGPUN JOB ,Z
//S1 EXEC PGM=IEBDG
//SYSPRINT DD SYSOUT=A
//SYSOUT1  DD SYSOUT=(B,,FU1),DCB=(LRECL=80,BLKSIZE=80,
             RECFM=FB)
//SYSIN    DD *
      DSD  OUTPUT=(SYSOUT1)
      FD   NAME=FIELD1,LENGTH=35,STARTLOC=1,PICTURE=35,
      '0100 RECORDS OF PUNCH OUTPUT -- SPE'
      FD   NAME=FIELD2,LENGTH=41,STARTLOC=36,PICTURE=41,
      'CIAL FORM = FU1 -- THIS IS RECORD NUMBER '
      FD   NAME=FIELD3,LENGTH=04,STARTLOC=77,FORMAT=ZD,
      INDEX=1
      CREATE QUANTITY=0100,NAME=(FIELD1,FIELD2,FIELD3)
END
/*
//
```

The fourth record in the member

```
//SYSOUT1  DD SYSOUT=(B,,FU1),DCB=(LRECL=80,BLKSIZE=80,
             RECFM=FBA)
```

specifies the forms name that will be returned to System/36 (FU1). The forms control table (FCT) specified on display 36.0 during subsystem member configuration is searched for an entry named FU1 when the output is returned.

The following is the procedure (FSPROC) at the host system (in SYS1.PROCLIB) that is executed when System/36 logs on to the host system. This is the same procedure as specified for the PROC parameter in the LOGON command on display 34.0 during subsystem member configuration.

```
//
  SF ,RD1
  SF ,PR1
MN JOBNAMES,T
```

Note that the host punch (PU1) is not started by this procedure. It must be started by the RJE operator before punch output can be received.

Creating the Forms Control Table

The control table created here is used to control the destination of output received from the host system. It is named FCT and is used in both the BSC and SNA examples.

```
                        MSRJE CONTROL TABLE UTILITY

                          Work with control tables
                                                              Optional-*

   Select one of the following:
     1. Create a new table
     2. Update entries in an existing table
     3. Add entries to an existing table
     4. Remove entries from an existing table
     5. Remove a table
     6. Print entries from an existing table
     7. Print a table
     8. Review entries in an existing table
     9. End the control table utility
   Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  1

   Table name . . . . . . . . . . . . . . . . . . . . . . . . . . .  FCT

   Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1        *

   Cmd7-End of job            Cmd2-Page back

                                                  CORP IBM Corp. 1986
```

The name of the table (FCT) is referenced by prompt 1 on display 36.0 during subsystem member configuration.

```
                        MSRJE CONTROL TABLE UTILITY              FCT

                          Create a control table entry


   Select a type of entry to work with:
     1. Print
     2. Print default
     3. Punch
     4. Punch default
   Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . .  1

   Table entry name . . . . . . . . . . . . . . . . . . . . . . . .  FR1




      Cmd3-Save entry, display table menu    Cmd7-Save table, end of job

                                                  COPR IBM Corp. 1986
```

The entry name matches the host forms name used for print output in the BSC and
SNA examples.

```
                         MSRJE CONTROL TABLE UTILITY              FCT
                                                                  FR1
                          Create a control table entry


Select where the output is to go:
  1. Printer
  2. Disk file
  3. Disk file with carriage information
  4. Compressed disk file for a printer
  5. Compressed disk file for a disk file
  6. Compressed disk file for a disk file with carriage information
Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1




    Cmd3-Save table, display table menu     Cmd7-Save table, end of job
                                                    COPR IBM Corp. 1986
```

```
                         MSRJE CONTROL TABLE UTILITY              FCT
                                                                  FR1
                    Create an MSRJE forms control table print entry

Use host printer balancing . . . . . . . . . . . . . . . . . N,Y  N




    Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry
                                                    COPR IBM Corp. 1986
```

The entry name matches the host forms name used for print output in the BSC and SNA examples.

```
                    MSRJE CONTROL TABLE UTILITY              FCT
                                                             FR1
              Create an MSRJE forms control table print entry
                                                          Optional-*

Local forms name . . . . . . . . . . . . . . . . . . . . . . . .  LFR1      *

Printer ID or SYSTEM . . . . . . . . . . . . . . . . . . . . . .  SYSTEM

Align the forms before printing? . . . . . . . . . . . . . N,Y   N

Spool? . . . . . . . . . . . . . . . . . . . . . . . . . . Y,N   Y

Final quality printing? . . . . . . . . . . . . . . . . . N,Y   N

Issue end of forms message? . . . . . . . . . . . . . . . Y,N   Y

Select a printwheel ID for the printer? . . . . . . . . . N,Y   N


Cmd3-Save entry, display entry menu       Cmd7-End of job, cancel entry

                                                   (c) 1985 IBM Corp.
```

```
                    MSRJE CONTROL TABLE UTILITY              FCT
                                                             FR1
              Create an MSRJE forms control table print entry
                                                          Optional-*

Lines per inch . . . . . . . . . . . . . . . . . . . . . . 4,6,8          *

Characters per inch  . . . . . . . . . . . . . . . . . . . 10,15          *

Lines per page . . . . . . . . . . . . . . . . . . . . . . 1-112    68    *

Line number of the last line per page  . . . . . . . . . . 1-112    68    *

Line skips for forms:
     01 -   1        02 -   0        03 -   0        04 -   0
     05 -   0        06 -   0        07 -   0        08 -   0
     09 -   0        10 -   0        11 -   0        12 -   0


Cmd3-Save entry, display entry menu       Cmd7-End of job, cancel entry

                                                   (c) 1983 IBM Corp.
```

```
                       MSRJE CONTROL TABLE UTILITY              FCT
                                                                FR1
             Create an MSRJE forms control table print entry
                                                           Optional-*

Hold in the spool file after printing? . . . . . . . . . . N,Y  N

Begin printing when the job step ends? . . . . . . . . . . Y,N  Y

Continue printing the same job stream? . . . . . . . . . . N,Y  N

Number of copies to be printed . . . . . . . . . . . . . 1-255   1      *

Priority on the spool file . . . . . . . . . . . . . . . . 0-5  1

Expected activity of spooled print file  . . . . . . . N,H,L,M  N




Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                          (c) 1983 IBM Corp.
```

```
                       MSRJE CONTROL TABLE UTILITY              FCT
                                                                FR1
                     Create a control table entry


Update the compressed disk file information? . . . . . . . N,Y,  N






Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                          (c) 1985 IBM Corp.
```

```
                    MSRJE CONTROL TABLE UTILITY              FCT
                       Create a control table entry


Select a type of entry to work with:
   1. Print
   2. Print default
   3. Punch
   4. Punch default
Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3

Table entry name . . . . . . . . . . . . . . . . . . . . . FU1






   Cmd3-Save entry, display table menu      Cmd7-Save table, end of job

                                                 COPR IBM Corp.  1986
```

```
                    MSRJE  CONTROL  TABLE  UTILITY            FCT
                                                             FU1
                       Create a control table entry


Select where the output is to go:
   1. Printer
   2. Disk file
   3. Disk file with carriage information
   4. Compressed disk file for a printer
   5. Compressed disk file for a disk file
   6. Compressed disk file for a disk file with carriage information
Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1






   Cmd3-Save table, display table menu      Cmd7-Save table, end of job

                                                 COPR IBM Corp.  1986
```

```
                         MSRJE CONTROL TABLE UTILITY              FCT
                                                                  FU1
                  Create an MSRJE forms control table punch entry
                                                                  Optional-*

Name of the file to be created . . . . . . . . . . . . . . .   LFU1

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . .   HOST

Procedure name . . . . . . . . . . . . . . . . . . . . . . .   TEST1      *

Library name . . . . . . . . . . . . . . . . . . . . . . . .   RJELIB

Type of file to be created . . . . . . . . . . . . . . S,D,I   S

Save the file in case of error?  . . . . . . . . . . . . Y,N   Y

Add output to an existing file?  . . . . . . . . . . . . N,Y   N

Free unused file blocks? . . . . . . . . . . . . . . . . Y,N   Y

Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                       (c) 1983 IBM Corp.
```

```
                         MSRJE CONTROL TABLE UTILITY              FCT
                                                                  FU1
                  Create an MSRJE forms control table punch entry
                                                                  Optional-*

Number of blocks to be reserved  . . . . . . . . . .  1-312815      60

Number of blocks to extend the file  . . . . . . . .  0-312815      10

Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1

Record length in bytes . . . . . . . . . . . . . . . .  1-4096      80

Delete capable file? . . . . . . . . . . . . . . . . . . . N,Y  N




Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                       (c) 1983 IBM Corp.
```

Appendix D. Forms Control Table Default Entries

Whenever you create an MSRJE forms control table, the forms control utility automatically places two entries in the table. One of these entries is used for print output when no entry in the table matches the received host forms name, and the other entry is used for punch output received when no entry in the table matches the received host forms name.

If you do not specify a forms control table on display 36.0 during subsystem member configuration, the IBM-supplied values for print and punch default entries are used. As supplied, the default print entry causes received printer data to be printed; received punch data is written to a disk file.

IBM-Supplied Print and Punch Default Values

IBM-Supplied Print Default Entry

The following displays show the values used for the IBM-supplied print default entry. The received print data is printed.

```
                         MSRJE CONTROL TABLE UTILITY              FORMFILE
                         Update a control table entry

      Select a type of entry to work with:
        1. Print
        2. Print default
        3. Punch
        4. Punch default
      Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2

      Table entry name . . . . . . . . . . . . . . . . . . . . . . .




          Cmd3-Save table, display table menu    Cmd7-Save table, end of job

                                                       COPR IBM Corp. 1986
```

```
┌─────────────────────────────────────────────────────────────────┐
│              MSRJE CONTROL TABLE UTILITY               FORMFILE    │
│                  Update a control table entry                     │
│                                                                   │
│   Select where the output is to go:                               │
│     1. Printer                                                    │
│     2. Disk file                                                  │
│     3. Disk file with carriage information                        │
│     4. Compressed disk file for a printer                         │
│     5. Compressed disk file for a disk file                       │
│     6. Compressed disk file for a disk file with carriage information │
│   Option . . . . . . . . . . . . . . . . . . . . . . . . . . . 1  │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│   Cmd3-Save table, display table menu    Cmd7-Save table, end of job │
│                                                                   │
│                                              COPR IBM Corp. 1986  │
└─────────────────────────────────────────────────────────────────┘
```

```
┌─────────────────────────────────────────────────────────────────┐
│              MSRJE CONTROL TABLE UTILITY               FORMFILE    │
│               Update an MSRJE forms control table entry           │
│   Use host printer balancing . . . . . . . . . . . . . N,Y   N    │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│                                                                   │
│   Cmd3-Save table, display entry menu    Cmd7-End of job, cancel entry │
│                                                                   │
│                                              COPR IBM Corp. 1986  │
└─────────────────────────────────────────────────────────────────┘
```

```
                    MSRJE CONTROL TABLE UTILITY            FORMFILE
               Update an MSRJE forms control table print entry
                                                    Optional-*

Local forms name . . . . . . . . . . . . . . . . . . . . . . .           *

Printer ID or SYSTEM . . . . . . . . . . . . . . . . . . . . SYSTEM

Align the forms before printing? . . . . . . . . . . . . N,Y  N

Spool? . . . . . . . . . . . . . . . . . . . . . . . . . . Y,N  Y

Final quality printing?  . . . . . . . . . . . . . . . . N,Y  N

Issue end of forms message?  . . . . . . . . . . . . . . Y,N  Y

Select a printwheel ID for the printer?  . . . . . . . . N,Y  N


Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                                (c) 1985 IBM Corp.
```

```
                    MSRJE CONTROL TABLE UTILITY            FORMFILE
               Update an MSRJE forms control table print entry
                                                    Optional-*

Lines per inch . . . . . . . . . . . . . . . . . . . . . 4,6,8        *

Characters per inch  . . . . . . . . . . . . . . . . . . 10,15        *

Lines per page . . . . . . . . . . . . . . . . . . . . . 1-112        *

Line number of the last line per page  . . . . . . . . . 1-112        *

Line skips for forms:
     01 -  1          02 -  0          03 -  0          04 -  0
     05 -  0          06 -  0          07 -  0          08 -  0
     09 -  0          10 -  0          11 -  0          12 -  0


Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry
                                                (c) 1983 IBM Corp.
```

```
                      MSRJE CONTROL TABLE UTILITY              FORMFILE
               Update an MSRJE forms control table print entry
                                                        Optional-*
Hold in the spool file after printing? . . . . . . . . . . N,Y  N

Begin printing when the job step ends? . . . . . . . . . . Y,N  Y

Continue printing the same job stream? . . . . . . . . . . N,Y  N

Number of copies to be printed . . . . . . . . . . . . . 1-255      *

Priority on the spool file . . . . . . . . . . . . . . . . 0-5  1

Expected activity of spooled print file  . . . . . . . N,H,L,M  N




Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              (c) 1983 IBM Corp.
```

```
                      MSRJE CONTROL TABLE UTILITY              FORMFILE
                        Update a control table entry


Update the compressed disk file information? . . . . . . . N,Y  N










Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              (c) 1985 IBM Corp.
```

IBM-Supplied Punch Default Entry

The following displays show the values used for the IBM-supplied punch default
entry. The received punch data is written to a disk file.

```
                         MSRJE CONTROL TABLE UTILITY                  FORMFILE

                          Update a control table entry


    Select a type of entry to work with:
      1. Print
      2. Print default
      3. Punch
      4. Punch default
    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4

    Table entry name . . . . . . . . . . . . . . . . . . . . . . .





    Cmd3-Save table, display table menu     Cmd7-Save table, end of job

                                                      COPR IBM Corp. 1986
```

```
                         MSRJE CONTROL TABLE UTILITY                  FORMFILE

                          Update a control table entry


    Select where the output is to go:
      1. Printer
      2. Disk file
      3. Disk file with carriage information
      4. Compressed disk file for a printer
      5. Compressed disk file for a disk file
      6. Compressed disk file for a disk file with carriage information
    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2




    Cmd3-Save table, display table menu     Cmd7-Save table, end of job

                                                      COPR IBM Corp. 1986
```

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
              Update an MSRJE forms control table punch entry
                                                         Optional-*
Name of the file to be created . . . . . . . . . . . . . . . . MSRJE
User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . . MSRJE
Procedure name . . . . . . . . . . . . . . . . . . . . . . .        *
Library name . . . . . . . . . . . . . . . . . . . . . . . . #LIBRARY
Type of file to be created . . . . . . . . . . . . . . S,D,I  S
Save the file in case of error?  . . . . . . . . . . . . Y,N  Y
Add output to an existing file?  . . . . . . . . . . . . N,Y  N
Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y
Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              (c) 1983 IBM Corp.
```

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
              Update an MSRJE forms control table punch entry

Number of blocks to be reserved  . . . . . . . . . . 1-560872      60
Number of blocks to extend the file  . . . . . . . . 0-560872      10
Preferred disk location  . . . . . . A1,A2,A3,A4,block number A1
Record length in bytes . . . . . . . . . . . . . . . 1-4096      80
Delete capable file? . . . . . . . . . . . . . . . . . . . N,Y  N




    Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry
                                              COPR IBM Corp. 1986
```

Changing the Default Entries

You can change the default entries by using the update entry option (option 2 on the Control Table display). The name of a default entry is always 8 blanks.

Changing the Destination in a Print Default Entry

The IBM-supplied print default entry directs output to the printer. If you change the destination to a compressed disk file for a printer, but do not change the values within the entry, the following values are used:

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                         Update a control table entry


    Select a type of entry to work with:
      1. Print
      2. Print default
      3. Punch
      4. Punch default
    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 2

    Table entry name . . . . . . . . . . . . . . . . . . . . . .




    Cmd3-Save table, display table menu     Cmd7-Save table, end of job

                                                    COPR IBM Corp. 1986
```

```
                        MSRJE CONTROL TABLE UTILITY              FORMFILE
                         Update a control table entry


    Select where the output is to go:
      1. Printer
      2. Disk file
      3. Disk file with carriage information
      4. Compressed disk file for a printer
      5. Compressed disk file for a disk file
      6. Compressed disk file for a disk file with carriage information
    Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4




    Cmd3-Save table, display table menu     Cmd7-Save table, end of job

                                                    COPR IBM Corp. 1986
```

```
           MSRJE CONTROL TABLE UTILITY               FORMFILE
    Update an MSRJE forms control table compressed disk file entry
                                                 Optional-*
Name of the file to be created . . . . . . . . . . . . . . .  MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

Number of blocks to be reserved  . . . . . . . . . .  1-560872    60

Number of blocks to extend the file  . . . . . . . .  0-560872    10

Preferred disk location  . . . . . .  A1,A2,A3,A4,block number  A1      *

Save the file in case of error?  . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . Y,N  Y

Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                             COPR IBM Corp. 1986
```

```
           MSRJE CONTROL TABLE UTILITY               FORMFILE
       Update an MSRJE forms control table print entry
                                                 Optional-*
Local forms name . . . . . . . . . . . . . . . . . . . . . .         *

Printer ID or SYSTEM . . . . . . . . . . . . . . . . . . . .  SYSTEM

Align the forms before printing? . . . . . . . . . . . . N,Y  N

Spool? . . . . . . . . . . . . . . . . . . . . . . . . . Y,N  Y

Final quality printing?  . . . . . . . . . . . . . . . . N,Y  N

Issue end of forms message?  . . . . . . . . . . . . . . Y,N  Y

Select a printwheel ID for the printer?  . . . . . . . . N,Y  N


Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                             (c) 1985 IBM Corp.
```

```
                    MSRJE  CONTROL  TABLE  UTILITY                    FORMFILE

              Update an MSRJE forms control table print entry
                                                         Optional-*

Lines per inch . . . . . . . . . . . . . . . . . . . . . 4,6,8          *

Characters per inch  . . . . . . . . . . . . . . . . . 10,15           *

Lines per page . . . . . . . . . . . . . . . . . . . . 1-112           *

Line number of the last line per page  . . . . . . . . 1-112           *

Line skips for forms:
     01 -   1        02 -   0        03 -   0        04 -   0
     05 -   0        06 -   0        07 -   0        08 -   0
     09 -   0        10 -   0        11 -   0        12 -   0



Cmd3-Save entry, save entry menu       Cmd7-End of job, cancel entry

                                               (c) 1983 IBM Corp.
```

```
                    MSRJE  CONTROL  TABLE  UTILITY                    FORMFILE

              Update an MSRJE forms control table print entry
                                                         Optional-*

Hold in the spool file after printing? . . . . . . . . . . N,Y  N

Begin printing when the job step ends? . . . . . . . . . . Y,N  Y

Continue printing the same job stream? . . . . . . . . . . N,Y  N

Number of copies to be printed . . . . . . . . . . . . . 1-255        *

Priority on the spool file . . . . . . . . . . . . . . . . 0-5  1

Expected activity of spooled print file  . . . . . . . N,H,L,M  N



Cmd3-Save entry, display entry menu     Cmd7-End of job, cancel entry

                                               (c) 1983 IBM Corp.
```

Changing the Destination in a Punch Default Entry

The IBM-supplied print default entry directs output to a disk file. If you change the destination to a compressed disk file for a disk file, but do not change the values within the entry, the following values are used:

```
                    MSRJE CONTROL TABLE UTILITY                 FORMFILE
                       Update a control table entry


   Select a type of entry to work with:
     1. Print
     2. Print default
     3. Punch
     4. Punch default
   Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . 4

   Table entry name . . . . . . . . . . . . . . . . . . . . . .




   Cmd3-Save table, display table menu     Cmd7-Save table, end of job

                                              COPR IBM Corp. 1986
```

```
                    MSRJE CONTROL TABLE UTILITY                    FORMFILE
                      Update a control table entry


Select where the output is to go:
  1. Printer
  2. Disk file
  3. Disk file with carriage information
  4. Compressed disk file for a printer
  5. Compressed disk file for a disk file
  6. Compressed disk file for a disk file with carriage information
Option . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5







  Cmd3-Save table, display table menu    Cmd7-Save table, end of job

                                                     COPR IBM Corp. 1986
```

```
                    MSRJE CONTROL TABLE UTILITY                    FORMFILE
      Update an MSRJE forms control table compressed disk file entry
                                                     Optional-*

Name of the file to be created . . . . . . . . . . . . . . . . MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . . . MSRJE

Number of blocks to be reserved  . . . . . . . . . 1-560872      60

Number of blocks to extend the file  . . . . . . . 0-560872      10

Preferred disk location  . . . . . . A1,A2,A3,A4,block number  A1        *

Save the file in case of error?  . . . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . . . Y,N  Y

  Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                                     COPR IBM Corp. 1986
```

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
              Update an MSRJE forms control table punch entry
                                                     Optional-*

Name of the file to be created . . . . . . . . . . . . . . .  MSRJE

User ID  . . . . . . . . . . . . . . . . . . . . . . . . . .  MSRJE

Procedure name . . . . . . . . . . . . . . . . . . . . . . .          *

Library name . . . . . . . . . . . . . . . . . . . . . . . .  #LIBRARY

Type of file to be created . . . . . . . . . . . . . . S,D,I  S

Save the file in case of error?  . . . . . . . . . . . . Y,N  Y

Add output to an existing file?  . . . . . . . . . . . . N,Y  N

Free unused file blocks? . . . . . . . . . . . . . . . . Y,N  Y

Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              (c) 1983 IBM Corp.
```

```
                    MSRJE CONTROL TABLE UTILITY              FORMFILE
              Update an MSRJE forms control table punch entry
                                                     Optional-*

Number of blocks to be reserved  . . . . . . . . . 1-560872    60

Number of blocks to extend the file  . . . . . . . . 0-560872    10

Preferred disk location  . . . . . . A1,A2,A3,A4,block number  A1      *

Record length in bytes . . . . . . . . . . . . . . . . 1-4096    80

Delete capable file? . . . . . . . . . . . . . . . . . . N,Y  N




Cmd3-Save entry, display entry menu    Cmd7-End of job, cancel entry

                                              COPR IBM Corp. 1986
```

Appendix E. Establishing a Communications Link

The following forms show an example of the procedure that should be followed to initiate MSRJE communications on a switched line. The example is for a manual answer BSC line (System/36 line number 1).

The subsystem that is to be used is called BSC and is stored in library COMMLIBR. MSRJE uses remote location BSCLOC in the subsystem member.

In the example, the operator signs on to MSRJE as the console and specifies a disk file to be used as reader input.

It is recommended that these forms (which can be found in the *Operating Your Computer*) be filled out for each communications application that uses a switched line.

USING MULTIPLE SESSION REMOTE JOB ENTRY

To Establish the Communications Link

1. At a display station, perform the following steps:

   Enter ALTERCOM 1,SWITCHED,MA
   _____
   Enter ENABLE BSC,COMMLIBR,1
   _____
   Enter MSRJE BSCLOC,SENDREC,,
   _____
        DISK,,,CONSOLE
   _____

   _____
   _____
   _____

2. At the system console, one of the following messages may be displayed:

   a. `RJE-4631 Line (line number) Operator dial is required . . .`

   This message is displayed because you have a BSC switched line, and you must call a remote location. Perform the following steps:

   _____
   _____
   _____
   _____
   _____
   _____

   b. `SYS-3401 SDLC (line number) Operator dial is required . . .`

   This message is displayed because you have an SDLC switched line, and you must call a remote location. Perform the following steps:

   _____
   _____
   _____
   _____
   _____
   _____

   c. `RJE-4632 Line (line number) Operator answer is required . . .`

   This message is displayed because you have a BSC switched line, and you must answer a call from a remote location. Perform the following steps:

   Respond to the message with
   _____
    option ∅.
   _____
   When the telephone rings, answer it.
   _____
   Press the data button on the telephone.
   _____
   Replace the handset.
   _____

   _____

S7909006-0

d. `SYS-3400 SDLC (line number) Operator`
   `answer is required . . .`

   This message is displayed because you have an
   SDLC switched line, and you must answer a call
   from a remote location. Perform the following steps:

   _____
   _____
   _____
   _____
   _____
   _____

e. `Other message`

   See the *System Messages* manual for an explanation
   of the message and the steps that you should follow.

To End the Communications Link

Perform the following steps:

After receiving job PAYROLL,
enter..$END.
When MSRJE is ended,
enter DISABLE BSC.

_____
_____

S7909007-0

.

Appendix F. MSRJE Problem Determination

This appendix contains a problem determination procedure that can help you find the cause of an MSRJE problem.

MSRJE Problem Determination Procedure

The following procedure helps you to determine whether the MSRJE feature, improper operation, or an incorrect configuration value is causing the problem. The procedure either tells you how to correct the problem or tells you who to call at the host system for assistance. If a problem continues to occur, the procedure directs you to call for service. In most cases, you would be calling for your System/36 programming service representative.

Note: *If you correct a problem as requested by the following procedure and another problem occurs, go back to **step 1**, discard any previously printed displays, and go through the procedure again using the new symptom. If the problem cannot be corrected by the procedure, you should refer to "Calling for Service" (at the end of this appendix), collect the information described there, and then call your service representative.*

1. **Are there any System/36 messages (messages preceded by the 4-digit identification code) associated with this job?**

    These messages can be seen:
    – At your display,
    – At the System/36 system console, or
    – In the System/36 history file. (Use the HISTORY procedure to look at the messages that have system console routing.)

    Yes No

    Call and ask the host system operator: Are there any messages at the host system associated with this remote job entry?

    Yes No

    Do the following:

    A. Use the **D I command** and the Print key to display and print MSRJE subsystem status.

    B. On the subsystem status display, locate the line number that is associated with your subsystem. Then use the **D C command** and the Print key to display and print the communications status for the communications line being used by MSRJE (for each communications line, there are three display segments). You should print the set of displays that is associated with the line shown on the D I display for your subsystem.

    C. Your MSRJE subsystem configuration is defined by values specified in both a subsystem member and a line member. Use the **CNFIGICF procedure** to display and print all the displays for both the *subsystem* member and *line* member that are being used by this subsystem configuration.

        – The subsystem member name is the first parameter on the ENABLE procedure command. Enter this name for prompt 1 of CNFIGICF display 1.0. Also, enter the right library name for prompt 2, and enter a 5 for prompt 3.
        – The location name is the first parameter on the MSRJE procedure command. Enter the location name on prompt 2 of CNFIGICF display 30.0.
        – The line member name is shown on prompt 1 of CNFIGICF display 21.0, which is one of the subsystem member displays. Enter this name on prompt 1 of CNFIGICF display 1.0, and enter the library name for prompt 2 and a 5 for prompt 3.

        (See Chapter 2 for information about the CNFIGICF procedure.)

    You will use the above information in most of the following problem determination steps. **Now go to step 2.**

(continued on next page)

```
V    V
|    |
|    Correct the problem indicated by the host system message and try
|    the job again.  If the problem indicated by the host system message
|    continues to occur, call your service representative.
|    See "Calling for Service" for more information.
|
```

Correct the problem indicated by the message(s) and try the job
again. Correct the problem using the MSRJE messages manual, the
System Messages manual, and possibly the *System Problem Determination*
manual.

Were you able to solve the problem using the System/36 messages?

Yes No
```
|    |
|    |
|    Call and ask the host system operator:  Are there any messages at
|    the host system associated with this remote job entry?
|
```
Yes No
```
  |    |
  |    |
  |    Call your service representative.  See "Calling for Service"
  |    for more information.
  |
```
```
|    Correct the problem indicated by the host system message and try
|    the job again.  If the problem indicated by the host system message
|    continues to occur, call your service representative.
|    See "Calling for Service" for more information.
|
```
End of problem determination.

2. **Is Startup in progress being displayed continuously (for at**
least 2 minutes)?

Yes No

Does it appear that you are having console problems?
For example, are you unable: to send host system console messages,
to enter MSRJE console utility control statements, or to display
host system console messages or MSRJE console messages?

Yes No

Does it appear that you are having reader problems?
For example, is Waiting for a reader, Reader Input, or
READFILE in progress being displayed continuously (for at
least 2 minutes)?

Yes No

Does it appear that you are having printer or punch
problems? For example, are you waiting for print or punch
output, or was the received output handled incorrectly?

Yes No

Are you having problems ending MSRJE?

Yes No

End of problem determination; call your service
representative. See "Calling for Service" for more
information.

Go to step 12.

Go to step 10.

Go to step 9.

Go to step 6.

Go to step 3.

3.   **Are you using a switched line?**

Yes   No
| |
| Go to step 4.
|

Check display 10.0 (for BSC) or check displays 12.0 and 13.0 (for SNA) of the CNFIGICF displays you printed.

Was autoanswer specified for the switched line?

Yes   No
| |
| Go to step 4.
|

The host system or the host system operator must call System/36 to connect the communications line. Ask the host system operator to call.

Has the problem been corrected?

Yes   No
| |
| **Does the modem support autoanswer?**
|
| **Yes   No**
| | |
| | If the modem does not support autoanswer, System/36 will not
| | answer. Disable the MSRJE subsystem and use CNFIGICF to
| | specify manual answer for this line (on display 10.0 for BSC
| | or display 12.0 for SNA). Then enable the subsystem to make
| | the change effective.
| |
| **Go to step 4.**
|
End of problem determination.

4.   **Are you using BSC MSRJE?**

Yes   No
| |
| Go to step 5.
|

Call the host system operator and make sure that the communications
line has been started. If the line has been started and the
problem still occurs, call your service representative. See
"Calling for Service" for more information.

5. **Call the host system operator and ask if all of the following are active at the host system:**

    A.   The communications line

    B.   The physical unit

    C.   All the LUs (logical units)

Yes No

       Ask the host system operator to vary the line, LU, and/or physical unit active.

Check the following and make any necessary corrections:

    A.   The NRZI parameter (found on the first display segment of the 'D H' display for the line you are trying to use) must be specified with the same value that was specified on the LINE macro in the host system's VTAM/NCP generation. If the value is not the same, use the SETCOMM procedure to change the NRZI parameter to match the value specified at the host system.

    B.   The *local system's station address* specified during CNFIGICF (on display 13.0, prompt 5) must be the same as the address specified for the ADDR parameter on the PU macro in the host system's VTAM/NCP generation.

    C.   The LU (logical unit) assignments entered during CNFIGICF (on display 14.0) must be the same as those assigned during the host system's VTAM/NCP generation.

    D.   The number of LUs assigned for SNA MSRJE (that is, the number of Cs specified on display 14.0 of the line member being used for MSRJE) must be at least as large as the *maximum number of sessions* specified on display 34.0, prompt 4 for the MSRJE subsystem member being used.

    E.   The *minimum number of sessions* specified during CNFIGICF (on display 34.0, prompt 5) must be varied active at the host system.

    Note: *If you need to change a value for your MSRJE subsystem, you should disable the subsystem, make the required change(s), and then enable the subsystem to make the change effective.*

(continued on next page)

Were any corrections made to the items above?

Yes No
| |
| If no changes were made to the items, either in your subsystem's
| configuration or at the host system, call your service
| representative. See "Calling for Service" for more information.

If the problem still occurs after you have made the corrections, you should
return to step 1, discard any previously printed displays, and start again.

6. **Are you unable to send host system console messages, or are you
    unable to enter MSRJE console utility control statements?**

Yes No
| |
| **Are you unable to display host system console messages?**
|
| Yes No
| | |
| | **Are you unable to display MSRJE console messages?**
| |
| | Yes No
| | | |
| | | End of problem determination; call your service
| | | representative. See "Calling for Service" for more
| | | information.
| |
| | **Did you specify CONSOLE on the MSRJE procedure command?**
| |
| | Yes No
| | | |
| | | You must specify CONSOLE to *display* MSRJE console
| | | messages; the console messages are in the history file.
| |
| | Call your service representative. See "Calling for Service"
| | for more information.
|
| **Go to step 8.**

Go to step 7.

7. **Did you specify CONSOLE on the MSRJE procedure command?**

Yes   No

You must specify CONSOLE to send console messages to the host system or to enter MSRJE console utility control statements. Press command key 7 to end this job. Reenter the MSRJE procedure command, specifying CONSOLE.

Is Console Input displayed on line 21?

Yes   No

Press command key 1 to make *Console Input* appear on line 21 of the display. Then you should be able to send host system console messages or enter MSRJE console utility control statements.

Is the input inhibit indicator on continuously (for at least 2 minutes)?

Yes   No

End of problem determination; call your service representative. See "Calling for Service" for more information.

For information about the input inhibit indicator, use the PROBLEM procedure to refer to the Online Problem Determination Aids. If that information does not help, then call your service representative. See "Calling for Service" for more information.

8. **Did you specify CONSOLE on the MSRJE procedure command?**

Yes **No**

You must specify CONSOLE to *display* host system messages. If you did not, then the messages should be in the System/36 history file.

Call and ask the host system programmer: Was the host system generated for console support?

Yes **No**

If you want host system messages to be *displayed*, ask the host system programmer to specify console support in the host system's generation. In the meantime, *if* these messages were sent as printer output, they should be on the MSRJE printer or in a disk file.

Are you using SNA?

Yes **No**

Call your service representative. See "Calling for Service" for more information.

Are any readers, printers, or punches active? (Enter the D M command to display MSRJE status.)

Yes **No**

Call your service representative. See "Calling for Service" for more information.

All LUs (logical units) may be busy (this is more likely to occur if only one logical unit is assigned). Wait until a reader, printer, or punch is not busy. If you still do not receive any host system messages, call your service representative. See "Calling for Service" for more information.

9. **Is Waiting for a reader being displayed continuously (for at least 2 minutes)?**

Yes No
    |
    Is Reader Input being displayed continuously (for at least 2 minutes)?

    Yes No
        |
        Is READFILE in progress being displayed continuously (for at least 2 minutes)?

        Yes No
            |
            Are you waiting for a console message from the host system?

            Yes No
                |
                Are you waiting for printer or punch output?

                Yes No
                    |
                    End of problem determination; call your service representative. See "Calling for Service" for more information.

                Go to step 10.

            Go to step 8.

        This is normal if a large file of data is being sent. If this is not a large file, and/or the reader does not end, call your service representative. See "Calling for Service" for more information.

    Did you enter an EOF statement, or did you press command key 7 or 19?

    Yes No
        |
        Enter another READFILE statement or, to end the reader, enter an EOF statement or press command key 7 or 19.

    Call your service representative. See "Calling for Service" for more information.

Call and ask the host system operator or programmer to make sure:

    A.   There are enough readers generated and available for use.

    B.   There are enough LUs (logical units) assigned and/or started.

    C.   The *host readers* are started.

If actions A, B, and C do not solve the problem, call your service representative. See "Calling for Service" for more information.

10. You can get the information to answer the questions for this step by entering host system commands at the MSRJE console. If you do not know which commands to enter, you should call your host system operator.

Are you waiting for print or punch output?

Yes No

　　　｜
　　　Go to step 11.

Are there any jobs on the host system's output queue?

Yes No

　　　｜
　　　Did you send a job using MSRJE?

　　　Yes No

　　　　　　｜
　　　　　　You should send a job using MSRJE or, if the job should have been started at the host system, call the host system operator to ensure that it was started. If the job appears to have started but it is not producing any output, call and ask the host system programmer for assistance.

　　　Does the display station from which you sent the job have
　　　Console Input **with** *Reader active* **displayed on line 21,**
　　　or does it have *Reader Input* **displayed on line 21?**

　　　Yes No

　　　　　　｜
　　　　　　Did you submit a valid job?

　　　　　　Yes No

　　　　　　　　　｜
　　　　　　　　　Submit a valid job and try again.

　　　　　　The problem appears to be at the host system. Call and ask the host system operator or programmer for assistance.

　　　Do one of the following:

　　　　A.　If *Console Input* and *Reader active* are displayed, press command key 1 to display reader input, and then enter '.. EOF'. The job should now be sent to the host system.

　　　　B.　If *Reader Input* is displayed, enter '.. EOF'. The job should now be sent to the host system.

Are the host system printers and/or punches started for your remote system?

(continued on next page)

Yes No
| |
| Start the printers and/or punches, or ask the host system
| operator to start them.
|
Is the output for your job being held at the host system?

Yes No
| |
| **Are the host printers and/or punches servicing the correct classes?**
|
| **Yes No**
| | |
| | Change the device classes, or ask the host system operator to
| | change them.
| |
| Call and ask the host system programmer to verify that the numbers
| of printers and punches specified in the VTAM/NCP generation at
| the host system are the same as the numbers specified on CNFIGICF
| display 36.0, prompts 3 and 5. If these numbers are the same, call
| your service representative. See "Calling for Service" for more
| information.
|
Release the job, or ask the host system operator to release it.

11. **Did MSRJE handle your output correctly?**

Yes No

Is the forms name, specified in message RJE−4515, correct?

Yes No

One of the following may be causing the problem:

A. The host system was not generated to allow forms moun messages.

B. For BSC, the format of the forms mount message is incorrect. The format of this message should be:

RES:
xx...IEF383Axx... (Where xx... is information not used to determine if it is a forms mount message.)

JES2:
xx...SETUP -- Rxx... or xx...SETUP - Rxx...
(Where xx... is information not used to determine if it is a forms mount message.)

JES3:
xx...IAT7030xx... (Where xx... is information not used to determine if it is a forms mount message.)

RSCS:
xx...PRINT MOUNTxx... (Where xx... is information not used to determine if it is a forms mount message.)

C. For SNA, the peripheral data information record (PDIR) is not being used.

D. The forms set number, as specified on CNFIGICF display 36.0, is incorrect.

Do any of the above situations exist?

Yes No

End of problem determination; call your service representative. See "Calling for Service" for more information.

Make the necessary corrections. If a problem still occurs, **return to step 1**, discard any previously printed displays, and start again.

(continued on next page)

V   V
     |
One of the following, indicated by a message in the System/36
history file, may be causing the problem:

   A.   There is no forms control table.

   B.   The forms control table name was not specified on CNFIGICF
        display 36.0.

   C.   The forms control table cannot be used because of resource
        security.

   D.   The forms control table cannot be shared.

   E.   The forms control table was not created by RJTABLE.

   F.   The specified entry was not found in the table.

   G.   The specified entry is in the table, but it is not correct.

**Does a message in the history file indicate that any of the
above situations exist?**

Yes   No
 | |
 | End of problem determination; call your service
 | representative. See "Calling for Service" for
 | more information.
 |
Make the necessary corrections. Then if a problem still
occurs, you should **return to step 1**, discard any
previously printed displays, and start again.

End of problem determination; call your service representative. See
"Calling for Service" for more information.

12. **Are you waiting for MSRJE to end?**

Yes   No
| |
| **Did MSRJE end unexpectedly?**
|
| **Yes   No**
| | |
| | End of problem determination. If you did not find the
| | problem, call your service representative. See
| | "Calling for Service" for more information.
| |
| **Was a nonblank termination delay value specified
| during CNFIGICF on prompt 2 of display 34.0?**
|
| **Yes   No**
| | |
| | **Was an .. END utility control statement entered by
| | an MSRJE reader?** (Check the history file.)
| |
| | **Yes   No**
| | | |
| | | Call your service representative. For more information,
| | | see "Calling for Service."
| | |
| | This is normal operation. If you want MSRJE to remain active,
| | do not enter the .. END statement from the MSRJE reader.
| |
| This is normal operation. If you want MSRJE to remain active,
| enter blanks for display 34.0, prompt 2.
|
Was a host reader started? To determine this, call the
host system operator or enter the appropriate host system console
command.

Yes   No
| |
| Use the appropriate host system commands to start a host reader.
|
Are any MSRJE readers, printers, and/or punches active?
(Enter the D M command to display MSRJE status.)

Yes   No
↓   ↓
(continued on next page)

Yes No
 |
Was the .. END utility control statement used? (Check the history file.)

Yes No
 |
 Was a nonblank termination delay value specified on display 34.0 during CNFIGICF?

 Yes No
  | |
  | Enter a '.. END' utility control statement at the
  | MSRJE console.
  |
 Is the MSRJE console active at any display station?
 (Enter the D M command to display MSRJE status.)

 Yes No
  | |
  | Wait for the specified delay time. Then, if MSRJE does
  | not end, call your service representative. For more
  | information, see "Calling for Service."
  |
 Either end the MSRJE console by pressing command key 7 or
 enter a '.. END' utility control statement.

Was a delay specified with the .. END statement?

Yes No
 | |
 | Call your service representative. See
 | "Calling for Service" for more information.
 |
Wait for the specified delay time, or enter the '.. END' utility
control statement without the DELAY parameter.

Wait or cancel the readers and/or writers.

Calling for Service

If you do the following before you call for service, you will help the service representative determine what the problem is and correct it as quickly as possible.

1. If you are able to use the system keyboard, do the following:

   a. Run the **APAR procedure** or **DUMP procedure** to save a copy of the dump area for the service representative, if a dump was taken. (See the manual *Procedures and Commands Summary* and the manual *System Problem Determination* for information about these procedures.)

   b. Press the **Print key** to print the information that was displayed when the error occurred.

   c. Run the **HISTORY procedure** to save a copy of the history file for the service representative. (See the manual *Procedures and Commands Summary* for information about the HISTORY procedure.)

   d. Use the **D C command** and the Print key to display and print the communications line status for the line being used for this job. (There are three display segments for each communications line.)

   e. Use the **D M command** and the Print key to display and print the MSRJE status display.

   f. Use the **CNFIGICF procedure** and the Print key to display and print all the MSRJE CNFIGICF displays for your subsystem. (See step 1, item C of the problem determination procedure for how to get the MSRJE displays printed, and, if necessary, see Chapter 2 for information about CNFIGICF.)

   Save the information you collected in actions a through f to give to the service representative.

2. Fill out a *Problem Summary Form*. On this form, you can record information about the system conditions at the time the error occurred. Copies of this form are contained in the *System Problem Determination* manual.

Glossary

#LIBRARY. The library, provided with the system, that contains the System Support Program Product. See *system library*.

abnormal termination. A system failure or operator action that causes a job to end unsuccessfully.

access method. The way that records in files are referred to by the system. The reference can be consecutive (records are referred to one after another in the order in which they appear in the file), or it can be random (the individual records can be referred to in any order).

access mode. See *access method*.

acquire. To assign a display station or session to a program.

adapter. See *communications adapter*.

addressing. (1) In data communications, the way that the sending or control station selects the station to which it is sending data. (2) A means of identifying storage locations.

advanced program-to-program communications (APPC). Communications support that allows System/36 to communicate with other systems having the same support. APPC is the way that System/36 puts the IBM SNA LU-6.2 protocol into effect.

allocate. To assign a resource, such as a disk file or a diskette file, to perform a specific task.

alphabetic character. Any one of the letters A through Z (uppercase and lowercase). Some program products extend the alphabet to include the special characters #, $, and @.

alphameric. Consisting of letters, numbers, and often other symbols, such as punctuation marks and mathematical symbols.

alphanumeric. See *alphameric*.

alternative index. An index that is built after a physical file is created and that provides a different order for reading or writing records in the file. Contrast with *primary index*.

alternative system console. A command display station that can be designated as the system console.

American National Standard Code for Information Interchange (ASCII). The code developed by ANSI for information interchange among data processing systems, data communications systems, and associated equipment. The ASCII character set consists of 7-bit control characters and symbolic characters.

American National Standards Institute (ANSI). An organization sponsored by the Computer and Business Equipment Manufacturers Association for establishing voluntary industry standards.

ANSI. See *American National Standards Institute (ANSI)*.

APPC. See *advanced program-to-program communications (APPC)*.

application program. A program used to perform an application or part of an application.

attribute. A characteristic. For example, an attribute for a displayed field could be blinking.

autoanswer. In data communications, the ability of a station to receive a call over a switched line without operator action. Contrast with *manual answer*.

autocall. In data communications, the ability of a station to place a call over a switched line without operator action. Contrast with *manual call*.

autocall unit. A common carrier device that allows System/36 to automatically call a remote location.

batch. Pertaining to activity involving little or no operator action. Contrast with *interactive*.

batch BSC. The System Support Program Product support that provides data communications with BSC computers and devices via the RPG T specification or the assembler $DTFB macroinstruction.

batch processing. A processing method in which a program or programs process records with little or no operator action. Contrast with *interactive processing*.

binary. (1) Pertaining to a system of numbers to the base two; the binary digits are 0 and 1. (2) Involving a choice of two conditions, such as on-off or yes-no.

binary synchronous communications (BSC). A form of communications line control that uses transmission control characters to control the transfer of data over a communications line. Compare with *synchronous data link control (SDLC)*.

bind command. An SNA command used to define the protocols for a session. Contrast with *unbind command*.

bit. Either of the binary digits 0 or 1. See also *byte*.

block. (1) A group of records that is recorded or processed as a unit. Same as *physical record*. (2) Ten sectors (2560 bytes) of disk storage. (3) In data communications, a group of records that is recorded, processed, or sent as a unit.

block check character. The character used in BSC to check that all of the bits transmitted were received.

bps. Bits per second.

BSC. See *binary synchronous communications (BSC)*.

BSCEL (binary synchronous communications equivalence link) subsystem. The SSP-ICF subsystem that provides BSC communications with another System/36 and many other BSC computers and devices.

buffer. (1) A temporary storage unit, especially one that accepts information at one rate and delivers it at another rate. (2) An area of storage, temporarily reserved for performing input or output, into which data is read or from which data is written.

byte. The amount of storage required to represent one character; a byte is 8 bits.

C & SM. See *Communications and Systems Management (C & SM)*.

call. (1) To activate a program or procedure at its entry point. Compare with *load*. (2) In data communications, the action necessary in making a connection between two stations on a switched line.

cancel. To end a task before it is completed.

CCITT. Consultative Committee on International Telegraphy and Telephone.

channel. A path along which data passes.

channel control character. A value used by MSRJE to determine which line to skip to on a page before printing the next line of output.

character. A letter, digit, or other symbol.

character key. A keyboard key that allows the user to enter the character shown on the key. Compare with *command key* and *function key*.

characters per inch (CPI). The number of characters printed within an inch horizontally across a page.

child. Pertaining to a secured resource, either a file or library, that uses the user list of a parent resource. A child resource can have only one parent resource. Contrast with *parent*.

CICS subsystem. The SSP-ICF subsystem that allows binary synchronous communications with CICS/VS.

CICS/VS. Customer Information Control System, which operates on a host system such as a System/370, or a 30XX or 43XX processor.

clocking. In data communications, a method of controlling the number of data bits sent on a communications line in a given time.

close. To end the processing of a file.

code. (1) Instructions for the computer. (2) To write instructions for the computer. Same as *program*. (3) A representation of a condition, such as an error code.

collating sequence. The sequence in which characters are ordered within the computer for sorting, combining, or comparing.

column separator. A symbol on each side of a position of a field on a display. This symbol does not occupy a position on the display.

command. A request to the system to perform an operation or a procedure.

command display. A display that allows an operator to display and send messages, and use control commands and procedure commands to start and control jobs. Contrast with *standby display*. See also *console display* and *subconsole display*.

command display station. A display station from which an operator can start and control jobs. A command display station can become an alternative system console, can be designated as a subconsole, and can also be used as a data display station. See also *alternative system console, data display station*, and *subconsole*.

command file. In the MSRJE utility, a disk file, procedure member, or source member that can contain MSRJE utility control statements and records to be transmitted to the host system. Contrast with *data file*.

command key. A keyboard key that is used to request specific programmed actions. Compare with *character key* and *function key*.

command processor. The part of the System Support Program Product that processes control commands and that passes procedure commands and operation control language statements to the initiator.

comment. Words or statements in a program or text or on a display that serve as documentation rather than as instructions, choices, or prompts.

common carrier. In data communications, any government-regulated company that provides communication services to the general public.

communications. See *data communications*.

communications adapter. A hardware feature that enables a computer or device to become a part of a data communications network.

Communications and Systems Management (C & SM). A feature of the System Support Program Product that contains the remote management support (also referred to as DHCF), the change management support (referred to as DSNX), and the problem management support (referred to as alerts).

communications control program (CCP). An IBM System/3 Model 15 program that allows communications between System/3 and the SSP-ICF CCP subsystem.

communications line. The line over which data communications takes place; for example, a telephone line.

communications link. See *data link*.

communications security. A System Support Program Product option that allows the identity of a remote location to be verified before that location can run programs on your system.

communications subsystem. See *subsystem*.

compression. In data communications, a technique for removing strings of duplicate characters and for removing trailing blanks before transmitting data.

configuration. The group of machines, devices, and programs that make up a data processing system. See also *system configuration*.

configuration member. (1) A library member that describes the devices, programming, and characteristics of the system. (2) In data communications, a member that defines the attributes of a communications subsystem or line.

configure. (1) To describe (to the system) the devices, optional features, and program products installed on a system. (2) To describe to SSP-ICF both the communications facilities connected to System/36 and the attributes of the subsystem and remote system.

console. A device used for communication between an operator and the system.

console display. A display that can be requested only at the system console. From a console display an operator can display, send, and reply to messages and use all control commands.

constant. A data item with a value that does not change. Contrast with *variable*.

control field. A field that identifies a record's relationship to other records (such as a part number in an inventory record). In RPG, control fields are compared from record to record to determine when certain operations are to be performed. In sort, control fields determine the order of records in the sorted file.

control storage. Storage in the computer that contains the programs used to control input and output operations and the use of main storage. Contrast with *main storage*.

CPI. See *characters per inch (CPI)*.

current library. The first library searched for any required members. The current library can be specified during sign-on or while running programs and procedures.

cursor. A movable symbol on a display, used to indicate to the operator where to type the next character.

data communications. The transmission of data between computers and/or remote devices (usually over a long distance).

data display station. A display station from which an operator can only enter data. A data display station is acquired and controlled by a program. Contrast with *command display station*.

data file. In the MSRJE utility, a disk file, procedure member, or source member that can contain only records to be transmitted to the host system. Contrast with *command file*.

data item. A unit of information to be processed.

data link. The equipment and rules (protocols) used for sending and receiving data.

data link escape (DLE) character. In BSC, a transmission control character usually used in transparent text mode to indicate that the next character is a transmission control character.

| **data management.** See *disk data management.*

data mode. In data communications, a time during which BSC is sending or receiving characters on the communications line.

| **data set.** A set of related print or punch records sent to
| MSRJE by the host. A job that produces output may
| generate multiple data sets. In SNA MSRJE, data sets
| may be preceded by a peripheral data set information
| record (PDIR).

data stream. All information (data and control information) transmitted over a data link.

data terminal equipment (DTE). The data processing unit that uses communications lines.

| **date-differentiated files.** Files with the same name that
| are distinguished by the dates they were created.

DCE. See *data circuit-terminating equipment (DCE).*

deactivate. To make ineffective. For example, to deactivate security.

| **decimal.** (1) Pertaining to a system of numbers to the
| base ten; decimal digits range from 0 through 9. (2) A
| proper fraction in which the denominator is a power of 10.

default. See *default value.*

default value. A value stored in the system that is used when no other value is specified.

delete. To remove. For example, to delete a file.

delete-capable file. A file from which records can be logically removed without compressing the file.

delimiter. A character or sequence of characters that marks the beginning or end of a unit of data.

direct file. A disk file in which records are referenced by the relative record number. Contrast with *indexed file* and *sequential file.*

disable. In interactive communications, to end a subsystem and free the area of main storage used by that subsystem. Contrast with *enable.*

disk. A storage device made of one or more flat, circular plates with magnetic surfaces on which information can be stored.

disk file. A set of related records on disk that is treated as a unit. See also *record file* and *stream file.*

display. (1) A visual presentation of information on a display screen. (2) To show information on the display screen.

display screen. The part of the display station on which information is displayed.

display station. A device that includes a keyboard from which an operator can send information to the system and a display screen on which an operator can see the information sent to or the information received from the system.

Distributed Systems Executive (DSX). A program product available for IBM host systems (System/370, 43XX, and 30XX) that allows the host system to get, send, and remove files, programs, formats, and procedures in a network of computers.

| **Distributed Systems Node Executive (DSNX).** Another
| name for the change management support offered by the
| Communications and Systems Management feature. This
| support processes changes sent by a DSX host system.

DSNX. See *Distributed Systems Node Executive (DSNX).*

DSX. See *Distributed Systems Executive (DSX).*

DTE. See *data terminal equipment (DTE).*

EBCDIC. See *extended binary-coded decimal interchange code (EBCDIC).*

EBCDIC character. Any one of the symbols included in the 8-bit EBCDIC set.

EIA. Electronic Industries Association.

eight-line communications adapter/attachment (ELCA). A feature that allows up to eight communication lines to be connected to a 5360 System Unit.

ELCA. See *eight-line communications adapter/attachment (ELCA).*

emulation. Imitation; for example, the imitation of a computer or device.

enable. In interactive communications, to load and start a subsystem. Contrast with *disable.*

enter. To type in information from a keyboard and press the Enter key in order to send the information to the computer.

exchange station ID. In SDLC, a control field command and/or response for passing station IDs between the primary station and a secondary station.

extendable disk file. A file that the system can increase in size whenever more space is needed.

extended binary-coded decimal interchange code (EBCDIC). A set of 256 eight-bit characters.

| **feature.** A programming or hardware option, usually
| available at an extra cost. For example, Communications
| is a feature of the System Support Program Product.

field. One or more characters of related information (such as a name or an amount).

file. A set of related records treated as a unit.

file name. The name used by a program to identify a file. See also *label*.

| **folder.** A named area on disk that contains documents,
| profiles, mail, or data definitions. Compare with *library*.

folder member. A named collection of statements in a folder. A document is an example of a folder member.

format. (1) A defined arrangement of such things as characters, fields, and lines, usually used for displays, printouts, files, or documents. (2) To arrange such things as characters, fields, and lines. (3) In BASIC, a representation of the correct form of a command or statement. (4) In IDDU, a group of related fields, such as a record, in a file.

function key. A keyboard key that requests an action but does not display or print a character. The cursor movement and Help keys are examples of function keys. Compare with *command key* and *character key*.

handset. The part of a telephone used for talking and listening.

| **hard copy.** A printed copy. Contrast with *online*.

hardware. The equipment, as opposed to the programming, of a system.

Help key. A function key that, when pressed, displays online information or some part of the system help support.

| **help text.** The part of the system help support that offers
| additional information about displays and messages.

hex. See *hexadecimal*.

hexadecimal. Pertaining to a system of numbers to the base sixteen; hexadecimal digits range from 0 (zero) through 9 (nine) and A (ten) through F (fifteen).

history file. A file that contains a log of system actions and operator responses.

horizontal tab table. A table used by MSRJE that contains values indicating the position on a line to skip to before printing.

host system. The primary or controlling computer in a communications network. See also *control station*.

I/O. See *input/output (I/O)*.

ID. Identification.

index. (1) A table containing the key value and location of each record in an indexed file. (2) A computer storage position or register, the contents of which identify a particular element in a set of elements.

informational message. A message that provides information to the operator, but does not require a response.

initial program load (IPL). The process of loading the system programs and preparing the system to run jobs.

initialize. To prepare for use. For example, to initialize a diskette.

input. Data to be processed.

input stream. The sequence of operation control statements and data given to the system from an input device.

input/output (I/O). Pertaining to either input or output, or both.

inquiry. (1) A request for information in storage. (2) A request that puts a display station into inquiry mode. (3) In data communications, a request for information from another system.

inquiry mode. A mode during which the job currently running from a display station is interrupted so that other work can be done. The operator puts the display station in inquiry mode by pressing the Attn key.

interactive. Pertaining to activity involving requests and replies as, for example, between an operator and a program or between two programs. Contrast with *batch*.

Interactive Communications Feature (SSP-ICF). A feature of the System Support Program Product that allows a program to interactively communicate with another program or system.

interactive processing. A processing method in which each operator action causes a response from the program or the system. Contrast with *batch processing*.

interrupt. (1) To temporarily stop a process. (2) In data communications, to take an action at a receiving station that causes the sending station to end a transmission.

IPL. See *initial program load (IPL)*.

job. (1) A unit of work to be done by a system. (2) One or more related procedures or programs grouped into a procedure.

job file. A disk file that exists until the job that uses it ends.

job queue. A list of jobs waiting to be processed by the system.

job step. A unit of work represented by a single program or a procedure that contains a single program. A job consists of one or more job steps.

K-byte. 1024 bytes.

key. One or more characters used to identify the record and establish the record's order within an indexed file.

keyword. A symbol that identifies a parameter.

label. (1) The name in the disk or diskette volume table of contents or on a tape that identifies a file. See also *file name*. (2) The name that identifies a statement.

| **library.** (1) A named area on disk that can contain
| programs and related information (not files). A library
| consists of different sections, called library members.
| Compare with *folder*. (2) The set of publications for a
| system.

library member. A named collection of records or statements in a library. The types of library members are *load member*, *procedure member*, *source member*, and *subroutine member*.

| **load.** (1) To move data or programs into storage. (2) To
| place a diskette into a diskette drive or a magazine into a
| diskette magazine drive. (3) To insert paper into a printer.
| (4) To mount a tape or insert a tape cartridge into a tape
| drive.

load member. A library member that contains information in machine language, a form that the system can use directly. Contrast with *source member*.

load module. A program in a form that can be loaded into main storage and run. The load module is the output of the overlay linkage editor.

local. Pertaining to a device, file, or system that is accessed directly from your system, without the use of a communications line. Contrast with *remote*.

location name. In interactive communications, the identifying name associated with a particular system or device.

logical unit (LU). The part of a system or device in an SNA network that allows a user or program to use the communications network.

LU. See *logical unit (LU)*.

main storage. The part of the processing unit where programs are run. Contrast with *control storage*.

main storage processor. Hardware that performs the machine language instructions in main storage.

manual answer. In data communications, a line type requiring operator actions to receive a call over a switched line. Contrast with *autoanswer*.

manual call. In data communications, a line type requiring operator actions to place a call over a switched line. Contrast with *autocall*.

menu. A displayed list of items from which an operator can make a selection.

message identification. A field in the display or printout of a message that directs the user to the description of the message in a message guide or a reference manual. This field consists of up to four alphabetic characters, followed by a dash, followed by the message identification code.

message identification code (MIC). A four-digit number that identifies a record in a message member. This number can be part of the message identification.

MIC. See *message identification code (MIC)*.

MLCA. See *multiline communications adapter/attachment (MLCA)*.

modem. See *modulator-demodulator (modem)*.

| **modulate.** To vary the frequency of.

modulation. Changing the frequency or size of one signal by using the frequency or size of another signal.

modulator-demodulator (modem). A device that converts data from the computer to a signal that can be transmitted on a communications line, and converts the signal received to data for the computer.

MSRJE. See *Multiple Session Remote Job Entry (MSRJE)*.

multiline communications adapter/attachment (MLCA). A feature that allows up to four communication lines to be connected to System/36.

multiple. More than one.

Multiple Session Remote Job Entry (MSRJE). A feature of the System Support Program Product that allows one or more remote job entry sessions to operate on a host system, such as a System/370, or a 30XX or 43XX processor, at the same time.

multipoint. In data communications, pertains to a network that allows two or more stations to communicate with a single system on one line.

negative response. In data communications, a reply indicating that data was not received correctly or that a command was incorrect or unacceptable.

nest. To incorporate a structure or structures of some kind into a structure of the same kind. For example, to nest one loop (the nested loop) within another loop (the nesting loop); to nest one subroutine (the nested subroutine) within another subroutine (the nesting subroutine).

network. A collection of data processing products connected by communications lines for information exchange between stations.

non-return-to-zero inverted (NRZI). On System/36, a method of data transmission where the signal is changed to transmit a 0 bit. For the 1 bit the signal stays the same. This ensures that the signal does not stay the same for an extended period of time.

nonswitched line. A connection between computers or devices that does not have to be established by dialing. Contrast with *switched line*.

NRZI. See *non-return-to-zero inverted (NRZI)*.

null character. The character hex 00, used to represent the absence of a displayed or printed character.

null character string. Two consecutive single quotation marks that specify a character constant of no characters.

numeric. Pertaining to any of the digits 0 through 9.

object program. A set of instructions in machine-runnable form. The object program is produced by a compiler from a source program.

OCL. See *operation control language (OCL)*.

offline. Neither controlled directly by, nor communicating with, the computer, or both. Contrast with *online*.

online. Being controlled directly by, or directly communicating with, the computer, or both. Contrast with *offline*.

open. To prepare a file for processing.

operand. A quantity of data that is operated on, or the address in a computer instruction of data to be operated on.

operation control language (OCL). A language used to identify a job and its processing requirements to the System Support Program Product.

output. The result of processing data.

output stream. Messages and other output data, displayed on output devices by an operating system or a processing program.

pad. To fill unused positions in a field with dummy data, usually zeros or blanks.

parameter. A value supplied to a procedure or program that either is used as input or controls the actions of the procedure or program.

parent. Pertaining to a secured resource, either a file or library, whose user list is shared with one or more other files or libraries. Contrast with *child*.

password. A string of characters that, when entered along with a user ID, allows an operator to sign on to the system.

password security. A System Support Program Product option that helps prevent the unauthorized use of a display station, by checking the password entered by each operator at sign-on.

PDIR. See *peripheral data set information record (PDIR)*.

peripheral data set information record (PDIR). A record sent to MSRJE by the host system to control the format of printed or punched output.

phone list. A list of telephone numbers to be called using a communications program and the autocall or X.25 feature.

physical record. (1) A group of records that is recorded or processed as a unit. Same as *block*. (2) A unit of data that is moved into or out of the computer.

point-to-point line. A communications line that connects a single remote station to a computer.

poll. To execute a polling sequence.

polling. A method for determining whether each of the stations on a communications line has data to send.

port. A part of the system unit or remote controller to which cables for display stations and printers are attached.

position. The location of a character in a series, as in a record, a displayed message, or a computer printout.

positional parameter. A parameter that must appear in a specified location, relative to other positional parameters.

primary index. The index that is built when a file is created. Contrast with *alternative index*.

print image. A character set that corresponds to the characters on a print belt.

print wheel. An interchangeable print element used in certain printers.

printout. Information from the computer that is produced by a printer.

priority. The relative ranking of items. For example, a job with high priority will be run before one with regular or low priority.

problem determination. The process of identifying why the system is not working. Often this process identifies programs, equipment, data communications facilities, or user errors as the source of the problem.

procedure. A set of related operation control language statements (and, possibly, utility control statements and procedure control expressions) that cause a specific program or set of programs to be performed.

procedure command. A command that runs a procedure.

procedure member. A library member that contains the statements (such as operation control language statements) necessary to perform a program or set of programs.

processing unit. The part of the system unit that performs instructions and contains main storage.

program. (1) A sequence of instructions for a computer. See *source program* and *load module*. (2) To write a sequence of instructions for a computer. Same as *code*.

program product. A licensed program for which a fee is charged.

Programming Request for Price Quotation (PRPQ). A program created especially for a particular group of customers or an application. Documentation for the program is provided only to those customers who order the PRPQ.

prompt. A displayed request for information or operator action.

protocol. A set of rules governing the communication and transfer of data between two or more devices in a communications system.

PRPQ. See *Programming Request for Price Quotation (PRPQ)*.

record. A collection of fields that is treated as a unit.

relative file. Same as *direct file*.

remote. Pertaining to a device, file, or system that is accessed by your system through a communications line. Contrast with *local*.

remote job entry (RJE). Sending job instructions and possibly data to a remote system requesting it to run a job.

request unit. In SNA, the record transmitted to the other system. This record can contain a request, data, or both.

resource security. A System Support Program Product option that restricts the use of information in files, libraries, folders, and folder members to specified users.

response unit. In SNA, the record sent to respond to a request. The response can be either positive or negative and can include control information.

RJE. See *remote job entry (RJE)*.

run. To cause a program, utility, or other machine function to be performed.

SDLC. See *synchronous data link control (SDLC)*.

security. The protection of data, system operations, and devices from accidental or intentional ruin, damage, or exposure. See also *system security*.

sequential file. A file in which records occur in the order in which they were entered. Contrast with *direct file* and *indexed file*.

session. (1) The logical connection by which a System/36 program or device can communicate with a program or device at a remote location. (2) The length of time that starts when an operator signs on the system and ends when the operator signs off the system.

severity code. A code that indicates how serious a compiling error or an operating error is.

sign off. To end a session at a display station.

sign on. (Verb) To begin a session at a display station.

single line communications adapter/attachment (SLCA). In data communications, a feature that allows a single communications line to be connected to System/36.

SLCA. See *single line communications adapter/attachment (SLCA).*

SNA. See *systems network architecture (SNA).*

SNA Upline Facility (SNUF). The SSP-ICF subsystem that allows System/36 to communicate with CICS/VS and IMS/VS application programs. Also, using this subsystem, DHCF communicates with HCF and DSNX communicates with DSX.

SNBU. See *switched network backup (SNBU).*

SNUF. See *SNA Upline Facility (SNUF).*

source member. A library member that contains information in the form in which it was entered, such as RPG specifications. Contrast with *load member.*

source program. A set of instructions that are written in a programming language and that must be translated to machine language before the program can be run.

special character. A character other than an alphabetic or numeric character. For example; *, +, and % are special characters.

spool file. A disk file that contains output that has been saved for later printing.

spooling. The part of the System Support Program Product that saves output on disk for later printing.

SSP. See *System Support Program Product (SSP).*

SSP-ICF. See *Interactive Communications Feature (SSP-ICF).*

station. A computer or device that can send or receive data.

status. A condition. For example, the status of a printer, a job, or a communications line.

subconsole. A display station that controls a printer or printers.

subconsole display. A display that can be requested only from a command display that appears on a subconsole. From a subconsole display an operator can display and send messages, and enter all control commands except those that can be entered only at the system console. See also *console display.*

subroutine member. A library member that contains information that must be combined with one or more members before being run by the system.

subsystem. The part of communications that handles the requirements of the remote system, isolating most system-dependent considerations from the application program.

switched line. In data communications, a connection between computers or devices that is established by dialing. Contrast with *nonswitched line.*

switched network backup (SNBU). In data communications, a technique that provides a switched line connection when a nonswitched line fails.

synchronous. Occurring in a regular or predictable sequence.

synchronous data link control (SDLC). A form of communications line control that uses commands to control the transfer of data over a communications line. Compare with *binary synchronous communications (BSC).*

system. The computer and its associated devices and programs.

system configuration. A process that specifies the machines, devices, and programs that form a particular data processing system.

system console. A display station from which an operator can keep track of and control system operation.

system library. The library, provided with the system, that contains the System Support Program Product and is named #LIBRARY.

system printer. The printer that is used for any printed output that is not specifically directed to another printer.

system services control point (SSCP). A focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support and other session services for network users.

system unit. The part of the system that contains the processing unit, the control panel, the disk drive and the disk, and either a diskette drive or a diskette magazine drive.

systems network architecture (SNA). A set of rules for controlling the transfer of information in a data communications network.

table. A collection of data in which each item is uniquely identified by a label, by its position relative to the other items, or by some other means.

terminal. In data communications, a device, usually equipped with a keyboard and a display device, capable of sending and receiving information over a communications line.

translation table. A table that provides replacement characters for characters that cannot be printed by the 3262 printer.

transmission control characters. In data communications, special characters that are included in a message to control communication over a data link. For example, the sending station and the receiving station use transmission control characters to exchange information; the receiving station uses transmission control characters to indicate errors in data it receives.

transparent data. Data that can contain any hexadecimal value.

transparent text mode. A mode that allows BSC to send and receive messages containing any of the 256 character combinations in hexadecimal, including transmission control characters.

truncate. To shorten a field or statement to a specified length.

turnaround. Changing a communications line from transmit mode to receive mode or from receive mode to transmit mode.

turnaround time. The time interval required to reverse the direction of transmission over a communication line.

unbind command. An SNA command used to reset the protocols for a session. Contrast with *bind command.*

unique. The only one.

unprocessed record. A record that is not transformed by MSRJE before it is stored.

utility control statement. A statement that gives a utility program information about the way the program is to perform or the output it is to produce.

utility program. (1) A program provided to perform a task that is required by many of the programs using the system; for example, a program that copies information from diskette to disk. (2) A System Support Program Product program that performs a common task.

valid. (1) Allowed. (2) True, in conforming to an appropriate standard or authority.

variable. A name used to represent a data item whose value can change while the program is running. Contrast with *constant.*

vertical tab table. A table used by MSRJE that contains values indicating the line on a page to skip to before printing.

voice-grade telephone line. A telephone line that is normally used for transmission of voice communications. The line requires a modem for data communications.

volume table of contents (VTOC). An area on a disk or diskette that describes the location, size, and other characteristics of each file, library, and folder on the disk or diskette.

VTOC. See *volume table of contents (VTOC).*

work station. A device that lets people transmit information to or receive information from a computer; for example, a display station or printer.

World Trade. (1) Pertains to the distinction between the US and the rest of the world. (2) Pertains to the combination of:

- IBM World Trade Americas/Far East Corporation
- IBM World Trade Europe/Middle East/Africa Corporation

X.21. In data communications, a specification of the CCITT that defines the connection of data terminal equipment to an X.21 (public data) network.

X.21 feature. The feature that allows System/36 to be connected to an X.21 network.

X.21 short hold mode. An option specified during system configuration that allows a circuit switched line to be disconnected when the line is not active.

X.25. In data communications, a specification of the CCITT that defines the interface to an X.25 (packet switching) network.

X.75. A standard that defines ways of interconnecting two X.25 networks.

3270 Device Emulation. A feature of the System Support Program Product that allows a System/36 local or remote device to appear as a 3270 device to another system.

3278 Device Emulation. A feature of the System Support Program Product that allows a System/36 local or remote device to appear as a 3278 device to another system.

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