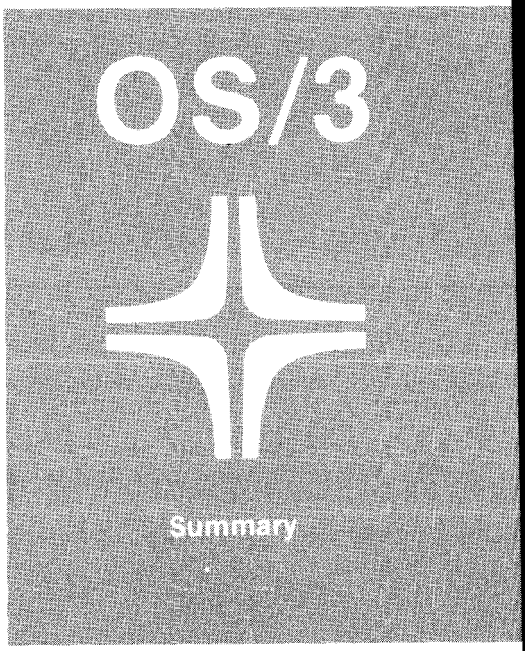
System Operations



SPERRY UNIVAC

UP-8376
Rev. 8

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Preface

This document is a summary of the procedures and commands used in the operation of the SPERRY UNIVAC 90/25, 90/30, 90/30B, and 90/40 Systems and the SPERRY UNIVAC System 80 operated under control of the SPERRY UNIVAC Operating System/3 (OS/3). It is designed for use as a quick-reference guide by the system administrator and experienced operators and programmers who are familiar with the operations of SPERRY UNIVAC systems.

The information presented herein has been condensed from the current versions of several source documents within the OS/3 library; they are:

- System 80

  — System 80 operations handbook operator reference, UP-8859

  Describes the commands and operating procedures for the operator

  — Spooling and job accounting concepts and facilities, UP-8869

  Describes the spooling capabilities and controls provided for the system administrator and the programmers and operator

  — System installation user guide/programmer reference, UP-8839

  Describes the system installation procedures and options

  — Supervisor user guide, UP-8075

  Describes the functions of the OS/3 supervisor

  — Job control user guide, UP-8065

  Describes the OS/3 job control procedures and options

— Interactive services commands and facilities user guide/programmer reference, UP-8845

  Describes the use of the workstation and the interactive services capabilities

— System messages programmer/operator reference, UP-8076

  Describes the OS/3 system messages and operator actions

— System 80 operator maintenance guide, UP-8915

  Describes the error definition and reporting procedures

■ Series 90 Systems

— 90/30 and 90/40 operations handbook for operators, UP-8072

  Describes the commands and operating procedures for the operator

— 90/25 and 90/30B operations handbook for operators, UP-8511

  Describes the commands and operating procedures for the operator

— Spooling and job accounting concepts and facilities, UP-8869

  Describes the spooling capabilities and controls provided for the system administrator and the programmers and operator

— System installation user guide/programmer reference, UP-8074

  Describes the system installation procedures and options

— Supervisor user guide, UP-8075

  Describes the functions of the OS/3 supervisor

— Job control user guide, UP-8065

  Describes the OS/3 job control procedures and options

— Interactive services commands and facilities user guide/programmer reference, UP-8845

  Describes the use of the workstation and the interactive services capabilities

— System messages programmer/operator reference, UP-8076

  Describes OS/3 system messages and operator actions

The system operations summary is organized as follows:

- Section 1. General

  Contains information of a general nature, such as conventions used to illustrate the commands and messages appearing in this manual, the procedures for entering commands and messages from the console, the procedures for operating the System 80 console workstation, and the general format characteristics of system commands and system messages.

- Section 2. System Power Turn On and Turn Off

  Describes the procedures for applying and removing power from the 90/25, 90/30, 90/30B, and 90/40 systems and System 80. Also presented are the power turn-on and turn-off procedures for the independently powered SPERRY UNIVAC 0604 Card Punch Subsystem.

- Section 3. System Initialization

  Describes the procedures for system control storage loading and system initial program loading for 90/25, 90/30, 90/30B, and 90/40 systems. Also describes the procedures for manual microprogram loading and initial program loading for System 80.

- Section 4. Job Processing

  Describes the commands used to initiate, schedule, execute, and terminate jobs. Also provides the commands used to perform specific job-related functions during job processing.

- Section 5. Spooling Services

  Describes the commands and procedures associated with the use of spooled files.

- Section 6. Integrated Communications Access Method

  Describes the commands and procedures for loading the ICAM symbiont, changing the ICAM name, initializing and terminating the global user service task, and directing communications operations.

- Section 7. System Utility Symbionts

  Describes the commands used to initialize and terminate the system utility symbiont provided by OS/3. Includes the function codes to initiate the card, tape, disk, and diskette functions.

- Section 8. Interactive Services

  Describes the extended set of commands and messages for operator use in controlling the interactive environment.

Contents

4. JOB PROCESSING

5. SPOOLING SERVICES

STATEMENT CONVENTIONS

Capital letters, parentheses, and punctuation marks	Must be entered exactly as shown
Lowercase letters and terms	Represent variable information that is either displayed or entered by the operator
Braces { }	Represent alternate choices of information
Brackets [ ]	Represent optional entries
Ellipsis ...	Represents an indefinite number of entries
Shading ▒	Represents a default option
Underlining ___	Represents that portion of the entry that must be specified

MESSAGE/COMMAND KEYIN PROCEDURE

Key/Control	Action/Description
MESSAGE WAITING key UNLOCK MSG WAIT key	Press prior to typing command or message. 1. Notifies system that a message or command is to be entered 2. Opens a display line on the screen of the system console for display message/command 3. Issues start of entry (▷) signal 4. Sets cursor (⌐ or ⊠) to position where typing begins
Message keys	Enter command or message — observe the format conventions when making your entry.
TRANSMIT key XMIT key	Press after your command or message entry is completed. Initiates transmittal of the command or message entered

NOTES:

1. Boxed keys pertain to System 80 hardware. Unboxed keys pertain to Series 90 systems hardware.

2. Commands are acted upon immediately or placed in a queue for future processing; they are never ignored or lost. Therefore, commands entered more than once will be acted upon more than once.

3. Unaccepted commands and messages result in a negative acknowledgment (NAK) error message from the system. Error messages of this type are identified by a blinking error symbol (◹) displayed at each end of the message. Reenter the message or command correctly.

SYSTEM 80 CONSOLE WORKSTATION OPERATIONAL PROCEDURES

The following procedures enable the console workstation operator to switch from console operation to workstation operation, return to console operation, and display messages concerning the type of operation (console or workstation) not currently in effect. (Refer to the interactive services commands and facilities user guide/programmer reference for a description of all interactive services provided to a workstation user.)

- **Switching from Console Operation to Workstation Operation**

Key/Control	Action/Description
FUNCTION key	Press and hold.
SYS MODE key or WS MODE key	Press for system mode. Press for workstation mode.

- **Switching from Workstation Operation to Console Operation**

Key/Control	Action/Description
FUNCTION key	Press and hold.
C/CSL key or D/SYS CONT key	Press for console mode. Press for control mode.

- **Displaying Informational Console Messages while Operating as a Workstation (CNSMSG Messages)**

Key/Control/Display	Action/Description
Console workstation display screen	Observe. CNSMSG is displayed on indicator line (line 25).
FUNCTION key	Press and hold.
C/CSL key	Press. Informational messages are displayed on line 2 of console workstation screen; CNSMSG is cleared.

- **Displaying Console Messages Requiring a Response while Operating as a Workstation (CNSREQ Messages)**

Key/Control/Display	Action/Description
Console workstation display screen	Observe. CNSREQ is displayed on indicator line (line 25); XMIT key locks against further workstation entries.
FUNCTION key	Press and hold.
C/CSL key	Press. Messages requiring a response (or accumulated full screen of informational messages not previously displayed) are displayed on line 2 of console workstation screen; CNSREQ is cleared. After you respond to message, you may switch back to workstation operation. XMIT key unlocks for workstation entries.

- **Displaying Informational Workstation Messages while Operating as the Console (WSMSG Messages)**

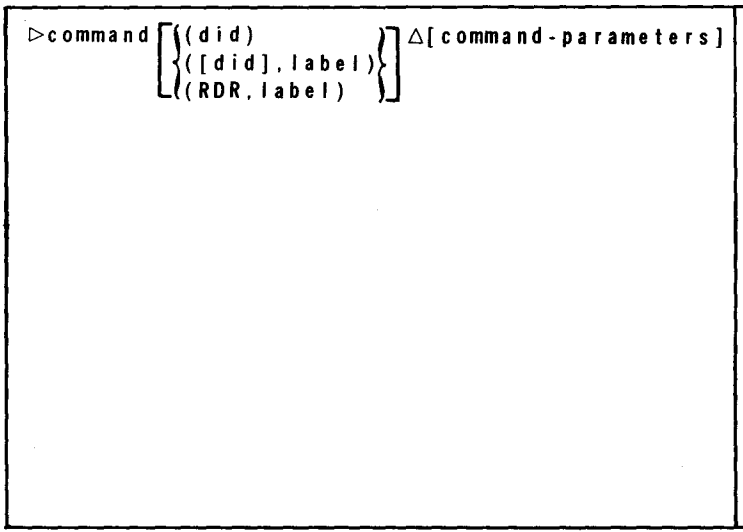
Key/Control/Display	Action/Description
Console workstation display screen	Observe. WSMSG is displayed on indicator line (line 25) for message concerning job initiated previously while operating as a workstation.

FUNCTION key	Press and hold.
SYS MODE key	Press. Informational messages are displayed on line 2 of console workstation screen; WSMSG is cleared.

- **Displaying Workstation Messages Requiring a Response while Operating as the Console (WSREQ Messages)**

Key/Control/Display	Action/Description
Console workstation display screen	Observe. WSREQ is displayed on indicator line (line 25) for message concerning job initiated previously while operating as a workstation. XMIT key does not lock; further console entries are permitted.
FUNCTION key	Press and hold.
SYS MODE key	Press. Messages requiring a response are displayed on line 2 of console workstation screen; WSREQ is cleared. (Use REBUILD command if message rolls off screen before you have had a chance to display and answer it.)

FORMAT CHARACTERISTICS OF SYSTEM COMMANDS



▷
Start of entry symbol; automatically precedes all lines

command
2—8 alphabetical characters (2 minimum) that identify the system command to be processed

did
3-character device address to identify the device used to carry out the command

did,label
Required when a diskette is used to function as a card reader or a card punch. The label entry is 1 to 8 characters. Must be data set label diskette with unblocked and unspanned records 128 bytes or less in size.

RDR,label
Device address to be used is the input reader spool file. The label entry is 1 to 8 characters.

command-parameters
Optional positional parameters used to tailor the effect of the command issued

FORMAT CHARACTERISTICS OF SYSTEM OUTPUT MESSAGES FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

▷ji{?/△/•}message-text	▷ Start of entry symbol; automatically precedes all lines j A 1-digit job number (1—7) assigned to each active job in the system. The job number is used in output messages to identify the job that issued the message. i A 1-digit hexadecimal message number consecutively assigned to each output message; used with the job number to explicitly identify each message in the system ? Identifies an output message that must be responded to before the job that issued that message can continue △ Identifies an information only message; does not require an operator reply

(continued)

	* Identifies a message requiring an operator action. Job issuing this type message is in yield state; a GO command is required from operator to reactivate job. **message-text** Actual message. Content is limited to a maximum of 60 characters.

FORMAT CHARACTERISTICS OF SYSTEM OUTPUT MESSAGES FOR SYSTEM 80

▷jji{?/△/.}message-text	▷ Start of entry symbol; automatically precedes all lines jj A 1- or 2-digit job number (1—14) assigned to each active job in the system. The job number is issued in output messages to identify the job that issued the message.

i

A 1-character message-id consecutively assigned to each output message, beginning with the letter A and ending with the letter Q. Letters I and O are omitted from the sequence to avoid possible confusion with job numbers 1 and 0. Message-id is used with job number to explicitly identify each message in the system.

?

Identifies an output message that requires a response before the job that issued the message can continue

△

Identifies an information only message; does not require an operator reply. Input messages (solicited and unsolicited) must include a space between the message-id and message text.

*

Identifies a message requiring an operator action. Job issuing this type message is in yield state; a GO command is required from operator to reactivate job.

message-text

Actual message. Content is limited to a maximum of 60 characters.

FORMAT CHARACTERISTICS OF SOLICITED INPUT MESSAGES FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

▷ji△message-text	▷ Start of entry symbol; automatically precedes all lines ji Identifies the job and message number of the output message being replied to message-text The actual message reply

FORMAT CHARACTERISTICS OF SOLICITED INPUT MESSAGES FOR SYSTEM 80

▷jji△message-text	▷ Start of entry symbol; automatically precedes all lines **jji** Identifies the job number and message-id of the output message being replied to. A space must be included between the message-id and the message-text. **message-text** The actual message reply

FORMAT CHARACTERISTICS OF UNSOLICITED INPUT MESSAGES FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

▷j0△[symbiont-name][(did)]△message-text	▷ Start of entry symbol; automatically precedes all lines j Number of the job to receive the message ø Message number that identifies this as an unsolicited message symbiont-name A 2-character alphanumeric name of the supervisor symbiont that is to receive the message (job and message numbers are 00). No name is required if symbiont is not recipient of message. did Address of the device being used or controlled by a specific copy of a symbiont in main storage message-text The actual message

FORMAT CHARACTERISTICS OF UNSOLICITED INPUT MESSAGES FOR SYSTEM 80

▷ jjØ△[symbiont-name][(did)]△message-text	▷ Start of entry symbol; automatically precedes all lines jj Number of the job to receive the message Ø Message-id that identifies this as an unsolicited message. A space must follow the message-id. symbiont-name A 2-character alphanumeric name of the supervisor symbiont that is to receive the message (job number and message-id is 00). Not required if symbiont is not recipient of message. did Address of the device being used or controlled by a specific copy of a symbiont in main storage message-text The actual message

SYSTEM TURN-ON AND TURN-OFF PROCEDURES FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

Power to the central hardware and to the peripheral devices of your system is normally controlled (applied and removed) via the POWER ON/POWER OFF switch on the operator/maintenance panel located on the processor cabinet. To control power from this panel, the power switches on the power control panels of the individual devices must be set to their "on" position. The system power turn-on and turn-off procedure provided in the tables that follow assume that the power switch settings for the individual devices within your system are properly set for normal operation. Separate turn-on and turn-off procedures are provided for those devices not controlled by the POWER ON/POWER OFF switch.

■ Power Turn On for 90/25, 90/30, 90/30B, and 90/40 Systems

Key/Control	Action/Indication
System circuit breakers (wall mounted)	Set to ON.
POWER ON/POWER OFF switch	Set to POWER ON. POWER CYCLING indicator: Lights during power-up sequence. All other indicators on operator/maintenance panel remain off. POWER ON indicator: Lights at completion of power-up sequence. All other indicators on operator/maintenance panel are extinguished.

(continued)

NOTES:

If both the POWER CYCLING and the POWER ON indicators remain lit at the end of the power-up sequence and all other indicators are extinguished, a stall condition exists. To remedy this condition:

1. Set POWER ON/POWER OFF switch to POWER OFF position.

2. Make certain that the power switch settings for all the central hardware devices and peripheral devices are set to their "on" position.

3. Set POWER ON/POWER OFF switch to POWER ON position.

If stall condition persists, refer situation to your Sperry Univac customer engineer.

■ **Power Turn Off for 90/25, 90/30, 90/30B, and 90/40 Systems**

Key/Control	Action/Indication
POWER ON/POWER OFF switch	Set to POWER OFF. All indicators on operator/maintenance panel light momentarily then extinguish
System circuit breakers (wall mounted)	Set to OFF if system is to remain unused for a period of time.

■ **Power Turn On for 0604 Card Punch Subsystems**

Key/Control	Action/Indication
1CB1 circuit breaker (0604 operator control panel)	Set to on (up) position. Blower motors start.

(continued)

Key/Control	Action/Indication
OFF/LINE switch/indicator (0604 operator control panel)	Press and release if OFF LINE indicator is not lit. OFF LINE indicator lights.
POWER MAN ON INTL/READY switch/indicator (0604 operator panel)	Press and release. POWER MAN ON INTL/READY indicator lights. POWER MAN OFF AC/DC indicator lights. CLEAR HOPPER indicator lights if card hopper is empty. All other indicators are extinguished.
OFF LINE switch/indicator (0604 operator control panel)	Press and release. OFF LINE indicator is extinguished.

■ **Power Turn Off for 0604 Card Punch Subsystems**

Key/Control	Action/Indication
OFF LINE switch/indicator (0604 operator panel)	Press and release. OFF LINE indicator lights.
POWER MAN OFF switch/ indicator (0604 operator panel)	Press and release. All indicators are extinguished.
1CB1 circuit breaker (0604 power control panel)	Set to off (down). Blower motors stop.

NOTE:

Use the DOWN function of the SET IO command to prevent the 0604 card punch from being accessed while offline.

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SYSTEM TURN ON AND TURN OFF PROCEDURES FOR SYSTEM 80

Normally, circuit breakers on the processor cabinet, expansion cabinet, and all peripheral devices where the circuit breaker is separate from the ON/OFF switch are left in the ON position. Power is controlled (applied and removed) through a main system circuit breaker. Once power is applied, the console workstation, integrated disks, and all diskettes are turned on and off by using the SYSTEM POWER switch; all other peripheral subsystems, such as printers and additional disk subsystems, are turned on and off at the specific device. Before turning system power on or off, be sure that files are protected at each disk drive or portions of data will be erased.

Whenever power has been removed from the system, the initial microprogram load and initial program load procedures must be performed each time power is reapplied. The system turn-on procedure, using the system resident (SYSRES) integrated disk, automatically initiates the initial program load (IMPL) procedure to load the resident portion of OS/3 (the supervisor). Operator action is not required until interactive IPL, when you select how the supervisor is initialized. To use another load device for the IMPL and IPL, initiate the manual IMPL when the automatic IMPL/IPL sequence completes. Section 3 provides instructions on how to manually initiate the IMPL and IPL procedure, as well as how to select supervisor initialization options during the interactive IPL.

■ Power Turn On for System 80

Key/Control/Display	Action/Indication
MAIN POWER circuit breaker (rear of cabinet)	Set to ON. (Performed at initial power turn on only.)
Expansion cabinet circuit breaker (rear of cabinet)	Set to ON.

(continued)

Key/Control/Display	Action/Indication
ON/OFF switch for nonintegrated peripheral subsystems	Set to ON. (Workstations are turned on and off, as required, by the workstation user.)
SYS PWR ON/OFF switch	Set to SYS PWR ON. SYS PWR switch: Flashes during power-on confidence test. SYS PWR switch and console screen: Light at completion of power-on confidence test.
Console workstation display screen	System state line (line 17): Loading message is displayed. Proceed with interactive IPL (Section 3). Whenever LOAD *ERROR STOP* is displayed (1) refer to the OS/3 system messages manual, (2) identify the error code display, and (3) take appropriate operator action. Then turn to the IMPL procedure (Section 3) and retry the IMPL. Whenever *CHECK STOP* is displayed, press the POCLR button under the console workstation table on the right-hand side. POCLR clears main storage and then initiates the automatic IMPL/IPL sequence. Proceed with interactive IPL (Section 3).

	Whenever STOPPED *HPR* is displayed refer to the OS/3 system messages manual, identify the HPR code (INSTR=hpr-instruction-code), and take appropriate operator action. For a nonrecoverable error, perform the entire IPL procedure described in Section 3.

NOTE:

The automatic IMPL and IPL use SYSRES for the load device. If another IMPL or IPL device is to be used, specify that device by manually initiating the IMPL or IPL procedure after the initial phase of the IPL completes.

■ **Power Turn Off for System 80**

Key/Control	Action/Indication
Console workstation	Enter the command: **SJ SHUT** Message indicating completed shutdown is displayed.
SYS PWR ON/OFF switch	Set to SYS PWR OFF. SYS PWR switch and console screen lights go out.
ON/OFF switch for nonintegrated peripheral subsystems	Set to OFF. (Workstations are turned on and off, as required, by the workstation user.)
MAIN POWER and expansion cabinet circuit breakers (rear of cabinets)	Set to OFF. (Used only for emergency or as a normal site requirement.)

CONTROL STORAGE LOAD PROCEDURE FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

The control storage load procedure must be performed whenever the 90/25, 90/30, 90/30B, or 90/40 system is turned on from a full power-off condition or the initial program load (IPL) operation cannot be completed successfully.

Control	Action/Indication
SYSRES disk pack containing control storage code	Place on suitable disk drive.
Disk drive selected	Set to the run state.
Operator/maintenance panel	
INHIBIT TIMER switch	Set to off (down) position.
INHIBIT PROC CHECK switch	Set to off (down) position.
HALT ON ERROR switch	Set to off (down) position.

(continued)

Control	Action/Indication
Operator/maintenance panel (cont)	
MODE SELECT switch	Set to NORMAL.
INITIAL LOAD CONTROL switch	Set to CONT STOR LOAD.
DATA ENTRY CHANNEL NO. switch	Set to channel number connected with selected disk drive unit. Assigned channel numbers are: 3 Integrated disk adapter 4 Selector channel 1 6 Selector channel 2
DATA ENTRY SUBCHANNEL NO. switch	Set to subchannel number assigned to selected disk drive. Assigned channel numbers are: 0 Integrated disk adapter 0—7 Selector channel 1 0—7 Selector channel 2
DATA ENTRY DEVICE NO. switch	Set to actual physical unit number assigned to selected disk drive (0 through F).

SYSTEM RESET switch	Press twice. (TEST MODE indicator lights.)
RUN switch	Press top portion. (INITIAL LOAD indicator lights and remains lit until control storage is successfully loaded — signified by lighting of HPR STOP indicator.)

NOTES:

1. Unsuccessful loading of control storage is indicated if the INITIAL LOAD indicator fails to extinguish and the PROC CHECK or CONTROL STORAGE indicators light. Repeat the last two steps of the procedure.

2. Do not disturb any switch setting until control storage loading is completed.

3. If the proper indications cannot be obtained, try loading from another disk drive unit. If problems persist, contact your Sperry Univac customer engineer.

INITIAL PROGRAM LOAD PROCEDURE FOR 90/25, 90/30, 90/30B, AND 90/40 SYSTEMS

The resident portion of the OS/3 supervisor must be loaded into main storage and initialized before the system can be used to run productive jobs. This operation is referred to as the initial program load (IPL) procedure. It can be performed only after control storage is loaded and initialized and must be performed whenever control storage is loaded or a nonrecoverable error occurs.

CAUTION

Make certain the system is in the idle condition (no jobs are active) before you perform the IPL procedure. Otherwise, the SYSRES volume table of contents (VTOC) may be left in a nonrecoverable state requiring that a new SYSRES volume be generated.

Step	Control/Display	Action/Indication
1.	SYSRES disk pack containing the initial program load routine	Place on suitable disk drive.
2.	Selected disk drive	Set to run state.
3.	Operator/maintenance panel	
a.	INHIBIT TIMER switch	Set to off (down) position.
b.	INHIBIT PROC CHECK switch	Set to off (down) position.
c.	HALT ON ERROR switch	Set to off (down) position.
d.	MODE SELECT switch	Set to NORMAL.
e.	INITIAL LOAD CONTROL switch	Set to PROGRAM LOAD.

(continued)

Step	Control/Display	Action/Indication
3.	Operation/maintenance panel (cont)	
f.	DATA ENTRY CHANNEL NO. switch	Set to channel number connected with selected disk drive unit. Assigned channel numbers are: 3 Integrated disk adapter 4 Selector channel 1 6 Selector channel 2
g.	DATA ENTRY SUBCHANNEL NO. switch	Set to subchannel number assigned to selected disk drive. Assigned channel numbers are: 0 Integrated disk adapter 0—7 Selector channel 1 0—7 Selector channel 2
h.	DATA ENTRY DEVICE NO. switch	Set to actual physical unit number assigned to selected disk drive unit (0 through F).

i.	SYSTEM RESET switch	Press top portion. (TEST MODE indicator lights.)
j.	RUN switch	Press top portion. (INITIAL LOAD and RUN indicators light. The INITIAL LOAD indicator is extinguished and only the POWER ON, TEST MODE, and RUN indicators remain lit after the IPL routine is loaded into the system.)
k.	PROC CHECK and HPR STOP indicators	Observe. If either indicator is lit, the IPL operation was unsuccessful and steps 3i and 3j must be repeated until the proper indications are obtained. If the PROC CHECK indicator remains lit, refer the problem to the Sperry Univac customer engineer. If the HPR STOP indicator remains lit, perform the following procedure to determine the cause of error: 1. Set DISPLAY SELECT 1 switch to UPPER. 2. Set LEGEND SELECT 1 switch to position 7.

(continued)

Step	Control/Display	Action/Indication
3.	Operation/maintenance panel (cont)	3. Read the first four sets of the DISPLAY 1 indicators (10 through 115). HPR codes displayed by these indicators are listed and described in the OS/3 system messages programmer/operator reference, UP-8076 (current version).
k.	PROC CHECK and HPR STOP indicators (cont)	If possible, correct the cause of the HPR STOP and then repeat steps 3i and 3j. If the HPR code identifies a condition that you cannot correct or if the HPR STOP persists, contact your Sperry Univac customer engineer.
l.	INITIAL LOAD CONTROL switch	Set to OFF; TEST MODE indicator extinguishes and the following message appears on system console screen: IPL TO LOAD STANDARD SUPERVISOR UNLESS NEW NAME KEYED IN ⌐_____, {L / C / D}

m.	TRANSMIT key on system console	Press if standard supervisor is to be loaded into system. If a different supervisor is to be loaded, enter the name of the new supervisor and then press the TRANSMIT key.
4.	System console	
a.	Display screen	Observe the following statements; respond to each statement as directed. Lines not requiring answers may be bypassed by pressing the RETURN key, thus selecting the displayed default value. The MESSAGE WAITING key need not be pressed before initiating any keyin during this procedure. **CAUTION** *Be sure to respond to all statements before pressing the TRANSMIT key. Otherwise, the questions and answers are lost and the entire procedure must be restarted if the procedure was not performed correctly.*

(continued)

Step	Control/Display	Action/Indication
4.	System console (cont)	OS/3 VERSION nn DATE? ({YY/MM/DD {MM/DD/YY {DD/MM/YY) __/__/__ TIME? (HH/MM/SS) __:__:__ RUN LIBS DEVICE ADDR? (DEFAULT=system-generation-option)___ RECOVER FILES? JOB QUEUE (N, Y, H DEFAULT=N) ERROR LOG (N, Y DEFAULT=Y) SPOOL FILES (N, A, C, L, H DEFAULT=system-generation-option) SPOOLING DVC ADDR? (DEFAULT={blank {vsn {SYSRES) ___ MODIFY SUPERVISOR? (N, Y DEFAULT=N) NUMBER OF 32K BYTES FOR CACHE (Ø-4:Ø=NO CACHE,DEF=3)#
a.	Display screen (cont)	

b.	TRANSMIT key	Press after you have responded to all the information requested in the preceding message statements.
		
		If you selected Y for the MODIFY SUPERVISOR message in step 4, enter the required modifications by responding to system output messages. Refer to the operations handbook for details.
		
		When the selected supervisor has been loaded and initialized, the system is ready to process user jobs when the following header and message are displayed:
		
		`(1) (2) (3) (4) (5) (6) (7)`
		`90/nn OS/3 version-no supname COS-n yy/mm/dd hh:mm:ss`
		(continued)

Step	Control/Display	Action/Indication
4.	System console (cont)	
b.	TRANSMIT key (cont)	If Y or H was selected for the JOB QUEUE message in step 4a, the following message is displayed: **JOB QUEUE RECOVERED — n JOBS QUEUED** If N was selected for the ERROR LOG message in step 4a, the following message is displayed: **ERROR LOG NOT RECOVERED** If either the PROC CHECK or HPR STOP indicator on the operator/maintenance panel lights during step 4b, the messages won't be displayed because the supervisor was not loaded or properly initialized, and you must repeat the IPL operation beginning with step 3e of this procedure.

5.		Operator/maintenance panel	
	a.	PROC CHECK and HPR STOP indicators	If, after repeating the IPL procedure, the PROC CHECK indicator remains lit, reload control storage and then repeat the IPL operation. If the HPR STOP indicator continues to light, perform the following procedure to determine the cause of the error: 1. Set the DISPLAY SELECT 1 switch to UPPER. 2. Set the LEGEND SELECT 1 switch to position 7. 3. Read the first four sets of DISPLAY 1 indicators (10 through 115). The possible HPR codes that can be displayed by these indicators during this phase of the IPL operation are described in the OS/3 system messages programmer/operator reference, UP-8076 (current version). If one of the special supervisor initialization HPR codes is displayed, set the LEGEND SELECT 1 switch to position 6 and read the DISPLAY 1 indicators representing registers Z00 through Z15 to further identify the cause of the HPR stop. (continued)

Step	Control/Display	Action/Indication
5.	Operator/maintenance panel (cont)	If possible, correct the cause of the HPR stop condition and retry the IPL operation. If the IPL operation still cannot be completed successfully or if the HPR code identifies a condition that cannot be corrected, reload control storage and then retry the IPL operation.
a.	PROC CHECK AND HPR STOP indicators (cont)	If either the PROC CHECK or HPR STOP error condition persists, contact your Sperry Univac customer engineer.

Note that any integrated disk units (8415, 8416, and 8418) that were offline when the supervisor was initialized are not available for system use until they are identified as available via the SET IO command, or a disk pack is mounted on them and they are initialized. Note also that the supervisor cannot distinguish between a low density 8418 disk unit and an 8416 disk unit. Thus, if a low density 8418 is placed online after system initialization, the following SET IO command must be keyed in to identify this fact to the supervisor:

```
SET IO,did,TY,2002
```

Jobs requiring more than the available devices will be terminated with an R277 message. You may review device ready status with the MIX command and change the status with the SET IO command.

INITIAL MICROPROGRAM LOAD PROCEDURE FOR SYSTEM 80

The initial microprogram load (IMPL) procedure is used to manually load and initialize control storage. Control storage must be manually loaded and initialized from the console workstation whenever a LOAD *ERROR STOP* message is displayed during an IMPL or during an automatic IMPL/IPL (initiated by the system turn on, POCLR button use, or a previous manual IMPL using SYSRES), or when the IPL cannot be completed successfully. The IMPL loads and initializes control storage in two phases from the load device you specify. When SYSRES is the load device for the first IMPL phase, SYSRES is automatically the load device for the second IMPL phase and for the IPL. When you specify an alternate load device for the first IMPL phase, you have the option of specifying an alternate device for the second IMPL phase and for the IPL.

The console workstation must be operating in control mode to initiate an IMPL. To set the console workstation to control mode if another operating mode is currently in effect, press and hold the FUNCTION key, then press the D/SYS CONT key. Proceed with step 1 of the IMPL procedure.

Step	Control/Display	Action/Indication
1.		Initiate the IMPL.
a.	FUNCTION key	Press and hold.
b.	IMPL key	Press.
	Console workstation display screen	Observe. The following message appears below the system state line (line 17):
		IMPL=CDD?

(continued)

Step	Control/Display	Action/Indication
		The 3-digit keyin of the IMPL load did (device address) is specified as follows: DEVICE ADDRESS Device — Channel — Subchannel — Device No. SYSRES Integrated Disk — 1 — Ø — Ø All Other Disks — 1 — Ø — 1 — 7* Diskettes — 3 — 2 — Ø — 3* *Represents the actual physical unit number assigned to the selected disk or diskette drive
2.	XMIT key	Identify the load device.
a.		Loading from SYSRES (did 1ØØ).

XMIT key		For the IMPL (phase one and two) and the IPL: Press to use SYSRES. Proceed with interactive IPL step 1.
Console workstation display screen		System state line: Loading message is displayed. Observe for error message displayed if IMPL or IPL is unsuccessful. Whenever LOAD *ERROR STOP* is displayed, refer to the OS/3 system messages manual, identify the error code display, and take appropriate operator action. Retry the IMPL beginning with step 1. If the error condition persists, record the error code and refer to the System 80 operator maintenance guide for error definition and reporting procedures. Whenever *CHECK STOP* is displayed, press the POCLR button under the console workstation table on the right-hand side. POCLR clears main storage and then initiates the automatic IMPL/IPL sequence. Proceed with interactive IPL. Whenever the IPL is unsuccessful and STOPPED *HPR* is displayed, refer to the OS/3 system messages manual to identify the HPR code (INSTR=hpr-instruction-code) and take appropriate operator action. For a nonrecoverable error, perform

(continued)

Step	Control/Display	Action/Indication
		the manual IPL procedure to retry the IPL. If the error condition persists, record the error code and refer to the System 80 operator maintenance guide.
b.		Loading from an alternate device.
	XMIT key	For the first IMPL phase: Keyin the alternate device 3-digit did and then press XMIT.
	Console Workstation display screen	System state line: Loading message is displayed. Observe for error message displayed if IMPL is unsuccessful. If error condition occurs, refer to operator action described in step 2.a. At the completion of the first IMPL phase, the following message is redisplayed below the system state line: IMPL=CDD?

	XMIT key	For the second IMPL phase and for the IPL: Press to use SYSRES. Proceed with interactive IPL step 1. (If the IMPL or IPL is unsuccessful, refer to step 2.a.) Otherwise, for the second IMPL phase: Key in the alternate device 3-digit did and then press XMIT.
	Console workstation display screen	System state line: Loading message is displayed. Observe. If the IMPL is unsuccessful, refer to step 2.a. At the completion of the IMPL, the following message appears below the system state line: IPL=CDD? Proceed with step 2 of the manual IPL procedure.

INITIAL PROGRAM LOAD PROCEDURE FOR SYSTEM 80

Upon completion of the initial microprogram load (IMPL), the initial program load (IPL) is performed from the console workstation to load and initialize the resident portion of OS/3 (the supervisor) in main storage. The IPL procedure contains the steps required to manually initiate the IPL and select the load device, followed by the steps required to complete the IPL and interactively select how the supervisor is initialized. Usually you will use the automatic IMPL/IPL (initiated either by the system turn on or the manual IMPL using SYSRES) and the manual IPL steps are completed for you. Then you need only use the interactive IPL procedure to select supervisor options.

You use the manual IPL procedure whenever a STOPPED *HPR* message is displayed with an unrecoverable error, when a LOAD *ERROR STOP* message is displayed during a manually initiated IPL, or when you are directed to retry the IPL for an IPLnn message.

The console workstation must be operating in control mode to initiate an IPL. To set the console workstation to control mode if another operating mode is in effect, press and hold the FUNCTION key and then press the D/SYS CONT key. Proceed with step 1 of the manual IPL.

CAUTION

Make certain the system is in the idle condition (no jobs are active) before you perform the IPL procedure. Otherwise, the SYSRES volume table of contents (VTOC) may be left in a nonrecoverable state requiring that a new SYSRES volume be generated.

■ **Manual IPL — Selecting the IPL Load Device**

Step	Control/Display	Action/Indication
1.		Initiate the IPL.
a.		When unrecoverable STOPPED *HPR*, LOAD *ERROR STOP*, or IPLnn retry message is displayed *during IPL*:
	FUNCTION key	Press and hold.
	IPL key	Press. Go to 1.c.
b.		When unrecoverable STOPPED *HPR* is displayed *during job processing*:
	FUNCTION key	Press and hold.
	RESTART key	Press.

(continued)

Step	Control/Display	Action/Indication
c.	Console workstation display screen	The following message appears below the system state line (line 17): IPL=CDD? The 3-digit keyin of the IPL load did (device address) is specified as follows:

DEVICE ADDRESS

Device	Channel	Subchannel	Device No.
SYSRES Integrated Disk	1	Ø	Ø
All Other Disks	1	Ø	1 — 7*
Diskettes	3	2	Ø — 3*

*Represents the actual physical unit number assigned to the selected disk or diskette drive

2.		XMIT key	Identify the IPL load device.
	a.	Console workstation display screen	To use SYSRES (did 100) for the IPL load device: Press. Proceed with interactive IPL step 1. System state line: IPL messages are displayed. Observe for error message displayed if IPL is unsuccessful. Whenever LOAD *ERROR STOP* is displayed, refer to the OS/3 system messages manual, identify the error code display, and take appropriate operator action. Retry the manual IPL. If the error condition persists, record the error code and refer to the System 80 operator maintenance guide for error definition and reporting procedures. Whenever STOPPED *HPR* is displayed, refer to the OS/3 system messages manual to identify the HPR code (INSTR=hpr-instruction-code) and take appropriate operator action. For a nonrecoverable error, repeat the manual IPL. If the error condition persists, record the error code and refer to the System 80 operator maintenance guide. (continued)

Step	Control/Display	Action/Indication
		Whenever *CHECK STOP* is displayed, press the POCLR button under the console workstation table on the right-hand side. POCLR clears main storage and then initiates the automatic IMPL/IPL sequence. Proceed with interactive IPL.
b.		To use an alternate load device for the IPL:
	XMIT key	Key in the alternate device 3-digit did and then press XMIT. When the alternate device is a diskette, proceed with interactive IPL step 1. (If the IPL is unsuccessful, refer to the operator action described in step 2.a.)
	Console workstation display screen	When the alternate load device is a disk, the following message is displayed with the IPL=CDD? message below the system state line: CYL=CCC?
c.	XMIT key	Press to proceed with interactive IPL.

■ **Interactive IPL — Selecting Supervisor Initialization Options**

Step	Control/Display	Action/Indication

1.	Console workstation display screen and INTENSITY control	After the IPL load device is selected (either automatically or through manual IPL), the following message is displayed above the system state line. Adjust the INTENSITY control for a comfortable viewing level (if required), then proceed with step 2.
		
		`IPL01 KEY IN AND TRANSMIT`
		`SUPERVISOR NAME (DEFAULT=SY$STD)`
		`OPTION S=SUPERVISOR, D=DEBUG,`
		`L=S/A LOAD (DEFAULT=S)`
		`LOAD DEVICE ADDRESS (DEFAULT=did)`
		`SY$STD,S,did`
		
		The default did is variable; the load did used for the IPL is displayed or the default did 100 (SYSRES integrated disk) is used.

(continued)

Step	Control/Display	Action/Indication
2.		Set the console workstation to console mode.
a.	FUNCTION key	Press and hold.
b.	C/CSL key	Press. Cursor (⧅) is positioned at point where an alternate supervisor name, loading option, and load did may be specified according to the format: **nnnnnn,o,did**
3.	XMIT key	Press if standard supervisor SY$STD (nnnnnn), normal supervisor load option S (o), and IPL load device address (the default conditions) are to be used. If an alternate supervisor, load option, or device address is required, enter the complete format and then press XMIT.
	Console workstation display screen	Below the system state line: Observe; IPLnn messages are displayed if the supervisor load is unsuccessful.

Whenever IPLnn error message is displayed, refer to the OS/3 system messages manual for the explanation and appropriate operator action. When directed, retry the manual IPL by setting the console workstation to control mode and proceeding with step 1. If the error condition persists, record the IPLnn error message and refer to the System 80 operator maintenance guide, for error definition and reporting procedures.

System state line: Observe; error message is displayed if IPL is unsuccessful.

Whenever STOPPED *HPR* is displayed, refer to the OS/3 system messages manual to identify the HPR code (INSTR=hpr-instruction-code) and take appropriate operator action. For a nonrecoverable error, set the console workstation to control mode and repeat the manual IPL beginning with step 1. If the error condition persists, record the error code and refer to the System 80 operator maintenance guide.

Whenever *CHECK STOP* is displayed, press the POCLR button under the console workstation table on the right-hand side. POCLR clears main storage and then initiates the automatic IMPL/IPL sequence. Proceed with step 1 of the interactive IPL.

(continued)

Step	Control/Display	Action/Indication
4.		Set the console workstation to console mode and select supervisor options.
a.	FUNCTION key	Press and hold.
b.	C/CSL key	Press.
c.	Console workstation display screen	Observe the following statements; respond to each statement as directed. Cursor (⊠) is positioned at point of entry for the date. Lines not requiring answers may be bypassed by pressing the RETURN key, thus selecting the displayed default value. The UNLOCK/MSG WAIT key need not be pressed before initiating any keyin during this procedure.

CAUTION

Be sure to respond to all statements before pressing the XMIT key. Otherwise, the questions and answers are lost and the entire procedure must be restarted if the procedure was not performed correctly.

```
**OS/3 VERSION nn***
DATE? ({YY/MM/DD}) __/__/__
      ({MM/DD/YY})
      ({DD/MM/YY})
TIME?   (HH/MM/SS) __:__:__
RUN LIBS DEVICE ADDR?
  (DEFAULT=system-generation-option) ___
RECOVER FILES?
JOB QUEUE (N, Y, H DEFAULT=system-generation-option)
ERROR LOG (N, Y  DEFAULT=Y)
SPOOL FILES (N, A, C, L, H)
  DEFAULT=system-generation-option)
SPOOLING DVC ADDR? (DEFAULT= {blank}) ---
                             {vsn  }
                             {SYSRES}
MODIFY SUPERVISOR? (N, Y DEFAULT=N)
```

(continued)

Step	Control/Display	Action/Indication

5.	XMIT key	Press after you have responded to all the information requested in the preceding message statements.
		
		If Y was selected for the MODIFY SUPERVISOR message in step 4, enter the required modifications by responding to system output messages. Refer to the operations handbook for details.
		
		When the selected supervisor has been loaded and initialized, the system is ready to process user jobs when the following header and message are displayed:
		
		`(1) (2) (3) (4) (5) (6) (7)`
		`(8) (9) (10) (11) (12) (13) (14)`
		`System 80 OS/3 version-no supnam yy/mm/dd hh:mm:ss`
		
		If Y or H was selected for the JOB QUEUE message in step 4, the following message is displayed:
		
		`JOB QUEUE RECOVERED – n JOBS QUEUED`

If N was selected for the ERROR LOG message in step 4, the following message is displayed:

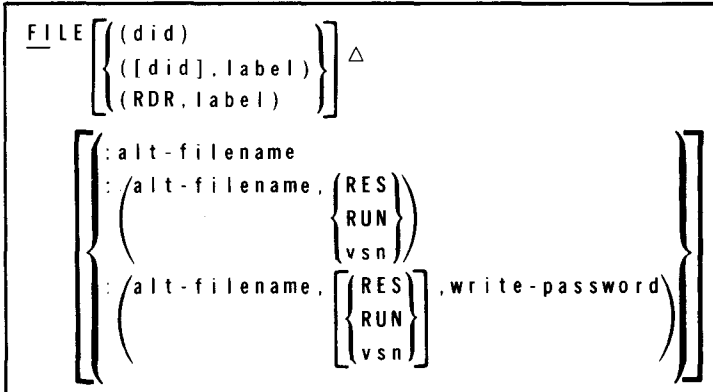
ERROR LOG NOT RECOVERED

During the IPL operation, the system automatically sets all devices or subsystems, except workstations, not online (not turned on) to not available. The devices or subsystems are not available for system use until you identify them as available via the SET IO command or, for a disk drive, until you mount a disk pack and initialize the drive. You can review the availability status for devices by using the MIX command. Jobs requiring more than the available devices are terminated with an R277 message.

JOB INITIALIZATION COMMANDS

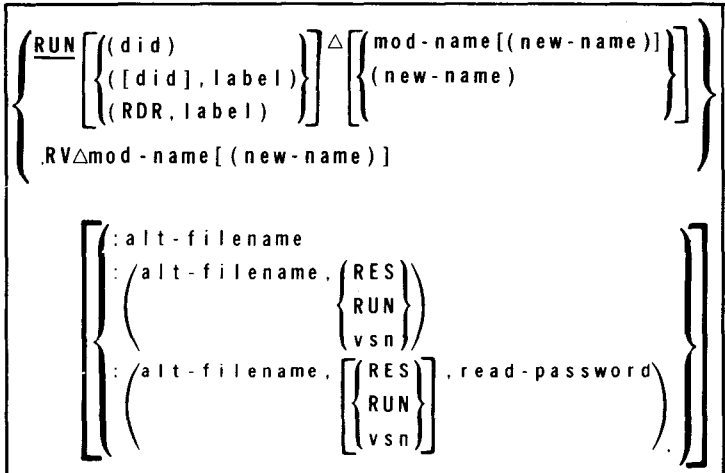
The following commands allow you to file a job control stream for future use or process the job control stream immediately.

- **Filing Job Control Streams (FILE)**



Files jobs and JPROCs (read from an input device) into permanent job control stream library file (YJCS) or an alternate library file. A disk or format label diskette can be used for alternate file. Diskette input must be data set label mode.

■ Running Job Control Streams (RUN/RV)



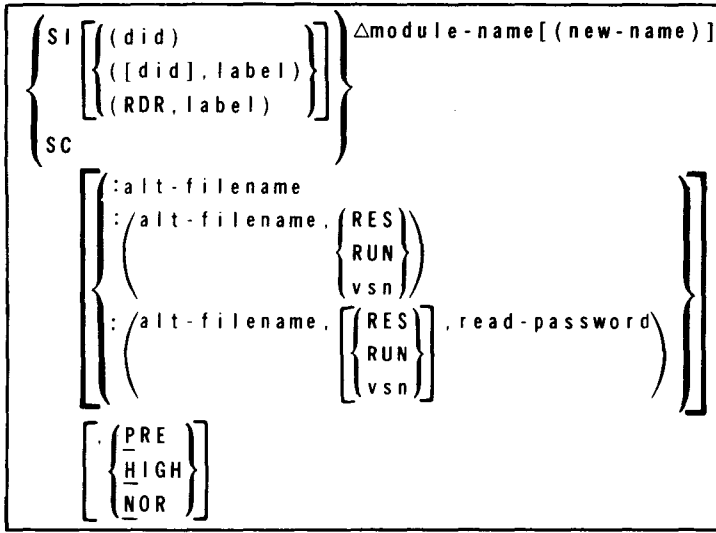
Reads job control stream from either an input device, YJCS, or alternate job control library file and stores it in scheduling priority queue for execution. The RUN command initiates reading of job control stream that requires use of input device (card reader, data set label diskette, or spool file). Input device must be available when RUN is issued, regardless of whether job control stream being read needs one. Otherwise, the command is not accepted.

RV command initiates reading of a prefiled job control stream that does not contain a // CR statement, indicating input to be read and inserted into stream. Therefore, you must include a module name (usually the same as the job name) when you enter RV.

For data set label diskette and spool file input, the last // FIN job control statement is not necessary. // FIN statements that separate groups of card images read with // CR statements are still necessary. Jobs input from data set label diskette to spool file must be single volume. Alternate library file may be on disk or format label diskette. New name cannot contain blanks.

[,{PRE / HIGH / NOR}] [,key-1=val-1,...,key-n=val-n]	Remember, when a system card reader is placed online, the RUN command to read a job control stream from cards in the hopper is initiated when RUN switch on card reader is pressed or when the RUN command is entered at the console. Use one method or the other but not both. Otherwise, an error condition is created.

■ Running Saved Job Control Streams (SI/SC)

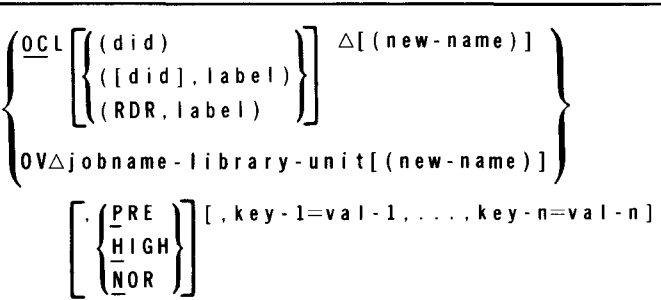


Initiates running of expanded job control stream from YSAVE MIRAM library file or an alternate library file, then stores it in scheduling priority queue for execution. SI command initiates reading of job control stream that requires replacement of embedded data from input device (card reader, data set label diskette, or spool file). When issued, SI is accepted only if input device is available.

SC command initiates reading of job control stream that does not require use of input device to replace embedded data.

For data set label diskette and spool file input, last // FIN job control statement is not necessary. New name cannot contain blanks.

■ Running IBM System/3 Operation Command Language Jobs (OCL/OV)



Runs IBM System/3 control stream in OS/3 environment. OCL command initiates reading of control stream that requires use of input device (card reader, data set label diskette, or spool file). Input device must be available when OCL is issued, regardless of whether control stream being read needs one. Otherwise, the command is not accepted.

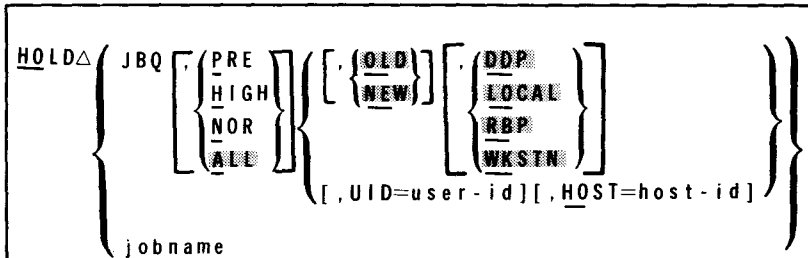
OV command initiates reading of prefiled control stream that does not contain a // CR statement, indicating input to be read and inserted into stream. Therefore, you must include a job name when you enter OV.

OCL statements placed in card reader must be concluded with // FIN job control statement. For data set label diskette and spool file input, last // FIN job control statement is not necessary. // FIN statements that separate groups of card images read with // CR statements are still necessary. Jobs input from data set label diskette to spool file must be single volume. New name cannot contain blanks.

JOB SCHEDULING COMMANDS

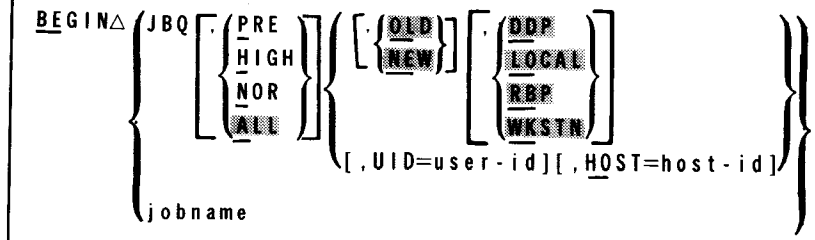
The following commands allow you to control jobs waiting to be scheduled for execution.

- **Deferring Jobs Scheduled for Execution (HOLD)**



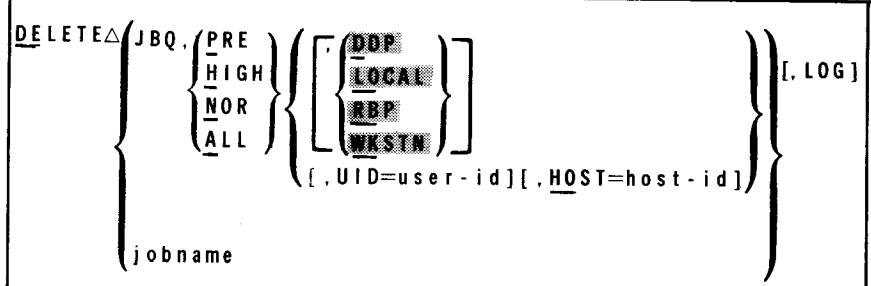
Defers scheduling of all jobs in all queues or in a specific queue, a specific job within a queue, a specific workstation user's jobs in all queues or a specific queue, or a specific host's jobs in all queues or a specific queue. Additional parameters permit the operator to defer either currently residing (old) or newly entered jobs and to defer locally, remotely, or workstation-entered jobs. These additional parameters (parameters 3 and 4) can be interchanged. Scheduling remains deferred until jobs are reactivated via BEGIN command.

■ Scheduling Deferred Jobs (BEGIN)



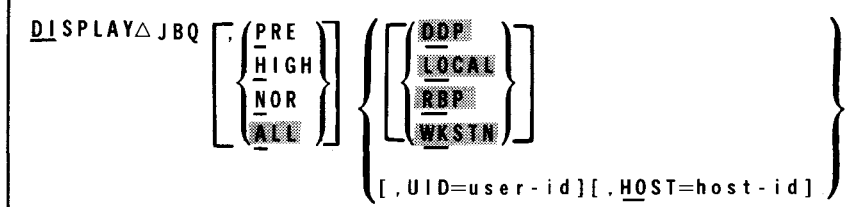
Reinstitutes scheduling for execution of a currently deferred job within a queue, all jobs in all queues or in a specific queue, a specific workstation user's jobs in all queues or a specific queue, or a specific host's jobs in all queues or a specific queue. Additional parameters permit the operator to reinstitute scheduling of either currently residing (old) or newly entered jobs and to reinstitute DDP, local, remote, or workstation-entered jobs. These additional parameters (parameters 3 and 4) can be interchanged. Jobs remain deferred by HOLD command until specifically reactivated via BEGIN command.

■ Deleting Jobs from Scheduling Priority Queues (DELETE)



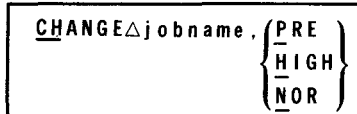
Deletes specific job from a scheduling queue, all jobs in all queues or in a specific queue, a specific workstation user's jobs in all queues or a specific queue, or a specific host's jobs in all queues or a specific queue. DDP, local, remote, or workstation-entered jobs may also be specified. Only jobs residing in a scheduling priority queue can be deleted. Specify LOG to print job log for all deleted jobs.

- **Displaying Jobs in Scheduling Priority Queues (DISPLAY)**



Displays contents of any or all job scheduling queues on console screen. The display format depends on the parameters specified. All jobs requested are displayed; those in deferred status (via HOLD) are displayed with parenthesis around jobname. Before a queue is displayed, system output message is displayed specifying that request was for LOCAL, RBP, DDP, WKSTN, or all jobs (QUEUED); the PRE, HIGH, or NOR queue display to follow; and whether or not a HOLD LOCAL (HL), HOLD REMOTE (HR), HOLD WORKSTATION (HW), or HOLD DDP (HD) command is currently in effect for that queue. If no jobs are found in queue requested, system output message stating that condition is displayed.

- **Changing Job Scheduling Priority (CHANGE)**



Changes scheduling priority of a specific job

JOB EXECUTION COMMANDS

The following commands allow you to control the processing of a job under execution.

- **Suspending Jobs in Progress (PAUSE)**

PAUSE△jobname	Suspends processing of a job. This command may be issued at any time, and job processing suspends immediately. Permits operator to mount new tape or disk volume, replace paper in printer, or add cards to card reader. Suspended job is reactivated by GO command.

- **Activating Suspended Jobs (GO)**

GO△jobname	Reactivates a job suspended by PAUSE command or by job control operations. Also required as response to a message from the system preceded by an asterisk (*).

- **Changing Job Switching Priority (SWITCH)**

SWITCH△jobname,{+number-of-priority-levels / -number-of-priority-levels}[,ALL]	Changes switching priority level for job under execution. The switching priority level is changed either for the currently executing job step or for the current job step and all subsequent job steps. If priority is changed for current step only, subsequent job steps execute under priority established (via // EXEC job control statement or default to lowest level), unless changed by another SWITCH command. A job assigned higher level has priority over lower level jobs for control of central processor. Levels are from 1 to n, where 1 is highest priority and n is lowest. (Total number of levels in your system is determined at SYSGEN.)

JOB TERMINATION COMMANDS

The following commands allow you to terminate the processing of a job, or a symbiont or transient.

- **Cancelling Jobs in Progress (CANCEL)**

CANCEL△ { jobname [, { D / N }] / symbiont , S [, N] }	Immediately halts all processing of a job or symbiont. May be issued at any time during processing of job and results in immediate termination of job step being executed at the time command is given. All subsequent job steps scheduled for job are terminated also. Job run library file for job is deleted. Specify D for dump, N for no dump; symbiont is a 2-character ID used to initiate the symbiont.

- **Stopping Execution of a Dump (END)**

END△DUMP , jobname	Terminates execution of a cancel or end of job dump for a particular job

- **Terminating Jobs (STOP)**

STOP△jobname	Terminates a specific job at end of currently executing job step; provides for orderly termination of job

SELECTED-OCCASION OPERATOR COMMANDS

The following commands allow you to perform certain functions during the course of processing a job.

- **Displaying Portions of Main Storage (DISPLAY)**

DISPLAY△addr [,{jobnumber / 0}]	Displays selected areas of main storage on console screen. The addr is a hexadecimal number used for a specific (absolute) main storage address or a job-relative main storage address. The job number identifies a job-relative address for the job; otherwise, an absolute address is displayed.

- **Dumping a Job Step from Main Storage (DUMP)**

DUMP[(did)]△{jobname / symbiont,S}	Available for Series 90 systems users only. Dumps currently executing job step to printer for printing. At completion of dump, the dumped job step is lost; however, remaining job steps of job (if any) are returned to job control for execution.

■ Displaying System Information (MIX)

MIX△ { **DA** [, { jobname / symbiont-name }] / **VI** / **SQ** / **SI** / **DS**[, did] / **SC** / **FR** / **MM** / **EN** / **EL** }	Displays tables of different aspects of system information. EL is available to System 80 users only.

- **Reconstructing Console Display (REBUILD)**

REBUILD	Clears all information from console, then restores job number header lines and rewrites all outstanding question and action request output messages on the screen. All displays other than unanswered questions and action requests are lost.

- **Setting Simulated Day Clock (SET CLOCK)**

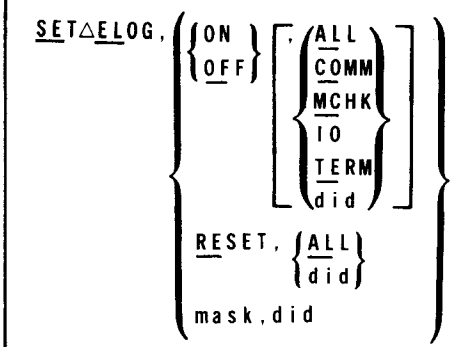
SET△CLOCK,hh:mm:ss	Resets time of day in system-simulated day clock; for example, changes from 24:00:00 to 00:00:00 at midnight.

- **Setting Date Field (SET DATE)**

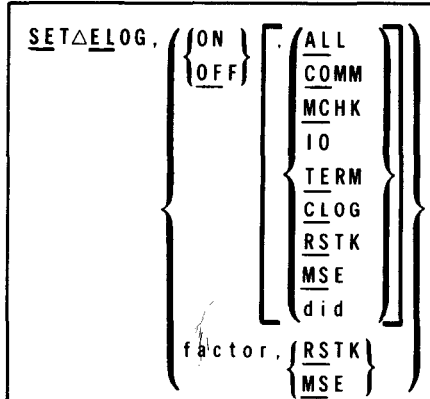
SET△DATE,yy/mm/dd[,yyddd]	Resets calendar date in system information block date field and resets job date for every job currently in main storage (except jobs containing // SET DATE job control statement).

■ Setting Error Log (SET ELOG)

Series 90 systems



Controls physical I/O control system (PIOCS) error logging into the YELOG file on SYSRES. Turns on or off communications, I/O device, machine check, and I/O termination record error logging. IPL procedure automatically turns on error logging and all error logging functions. Previously entered changes to all-on condition are lost when system is reloaded. SET ELOG is also used to redefine characterstics of loggable error for specified device. Mask required to define loggable error is determined by device type and included at SYSGEN. Masks are automatically loaded through IPL procedure. Should your local Sperry Univac representative ask you to change the characteristics of a mask, enter command with actual hexadecimal characters of new mask inserted as value of mask parameter, and with did specified.



Consult your Sperry Univac customer engineer before using SET ELOG command.

Turns on or off communications, I/O device, machine check, and I/O termination record error logging into YELOG file on SYSRES. IPL procedure automatically turns on error logging and all error logging functions; previously entered changes to all-on condition are lost when system reloaded. SET ELOG is also used to specify a 1- to 3-character decimal value used to redefine main storage error (MSE) or retry stack error (RSTK) limits. When limit is exceeded, error is repressed. Factor value entered is multiplied by 32 to redefine millisecond time factor (F) in error limit formula F*S:E, where S is size or number of MSE, or RSTK errors and E is elapsed time since last interrupt of same type.

■ Running ONUERL (RV/RUN ONUERL)

When the LOG FILE IS NEARLY FULL message appears on the console screen, run the system-supplied ONUERL job using either the preset options or overriding them with other options. On Series 90, override the preset options by using // PARAM cards. To override options on System 80, respond to program messages at the console.

Remember that the disk containing the YRUN file and the SYSRES disk must be similar device types (both 8414's, for example).

Series 90 **RV△ONUERL** **RUN△ONUERL,,CARD=YES**	Executes ONUERL program with preset parameters (RV); or with overriding // PARAM cards (RUN) entered through card reader, one parameter per card. A // FIN card must follow last parameter card.
System 80 **RV△ONUERL** **RV△ONELAN**	Executes ONUERL program with preset parameters; or executes ONUERL with ONELAN error log analysis graphs.

■ Setting Physical Unit Blocks (SET IO)

```
SET△IO,did, (AV       ) [,O]
             (DOWN    ) [,H]
             (EON     )
             (EOF     )
             (FEA,type-code)
             (HOME    )
             (NA      )
             (NOSHARE )
             (RDR     )
             (SHARE   )
             (TYPE,type-code)
             (UP      )
```

Sets specific bits in physical unit blocks, which define operational characteristics and assignments of I/O devices. There is one physical unit block comprised of a 3- or 4-character did for each physical device in system. All devices or subsystems must be set DOWN before attempting operations such as forms loading, changing ribbon, etc. Required if processor is to continue operation with other peripheral devices while subject device is undergoing isolated operations. Before a procedure is performed or when power is turned off for the device, enter SET IO,did,DOWN. After offline procedure is completed or after turning on power independently of processor, enter SET IO,did,UP. Positional parameters O and H are for System 80 users only.

- **Reading Mounted Volume Serial Number (AVR)**

AVR△did[,did][,did]	Reads volume serial number of premounted prepped disk pack, diskette, or magnetic tape volume and stores it in device physical unit block. (Required when disk pack or magnetic tape is mounted on unit that does not have attention interrupt capability, such as UNISERVO VI-C Magnetic Tape Subsystems.)

- **Displaying Job Status (DISPLAY JS)**

DISPLAY△JS[,jobname]	Displays status of jobs in system on the console screen. Command allows you to display status of specific job or all jobs in main storage, specific job in scheduling priority queue, or a job being processed by the RUN or OCL processor. Includes job name and CPU time used, reason why job is not executing, or job's scheduling priority queue.

- **Dumping the Contents of Main Storage (SYSDUMP)**

SYSDUMP	Dumps entire contents of main storage to YDUMP file on SYSRES. Use SYSDUMP whenever system dump is required without supervisor reloading (no re-IPL required). After main storage dumps, the SYSDMPnn job is automatically initiated to print the SYSDUMP file (where nn is a unique number assigned by the system). The SYSDUMP file locks until SYSDMPnn completes. To inhibit dump printing, enter NONE when SYSDMPnn message requests type of dump to print. If you delete SYSDMPnn from job queue or cancel it before SD01 output message, enter the SET SY command to unlock YDUMP file.

- **Setting the YDUMP File to Unlocked Condition (SET SY)**

SET△SY,LOFF	Unlocks the YDUMP file after an SY command or system error locks it

■ **Setting Main Storage Condition (SET MEM)**

SET△MEM, {DOWN / UP}, address [, {no-of-blocks / 1}]	Available to System 80 users only. Sets one or more main storage blocks up or down. Normally, main storage is in up (usable) condition. System automatically sets unusable block down and displays listing of all blocks currently set down on console screen. Initialize the error log (at IPL) if adding main storage or taking system-resident pack from smaller system to larger system or the additional storage will be unusable. Normally, SET MEM command is used to set a block up after your customer engineer corrects condition that made it unusable.

■ **Setting the Seek Separation Feature (SET SEEKSEP)**

SET△SEEKSEP, {ON / OFF} [{did / ALL}]	Available to Series 90 users only. Sets the seek separation feature on or off (default). ALL sets seek separation for all disks; did sets it for that device only. ALL is the default.

■ **Setting the Unattended Console Feature (SET UNCON)**

SET△UNCON, { **ON** / **OFF** / **time** }	Available to System 80 users only. Sets the unattended console feature, which is a SYSGEN option. To remove the previously specified (at SYSGEN) option, specify OFF. To reactivate the previously removed option, specify ON. Specify a specific time (in minutes) to change the unattended console auto-answer time.

■ **Terminating System Activity (SHUTDOWN)**

SHUTDOWN△[DDP]	Terminates system activity in an orderly manner. No new files, jobs, or functions are started. Specify DDP to terminate distributed data processing only (when its activity ceases).

GENERAL SPOOLING COMMANDS

Used to display and manipulate subfiles in the spool file; also used to change the operating mode of the spooling function.

The formats for these commands may include:

- **Spool File Directories**

  d i r e c t o r y
  Identifies the specific spool file directory acted upon. When ALL is entered in place of a directory, all directories accessible to the command are acted upon. Allowable entries are:

  D D P P R
  Distributed data processing output is to printer.

  D D P P U
  Distributed data processing output is to card punch.

(continued)

L O G
Job, workstation, and console log input and output data is in designated log subfile.

P R I N T
Subfile output is to the designated printer.

P U N C H
Subfile output is to the designated card punch or data set label diskette.

R B P I N
Remote batch processing input is from card reader.

R B P P R
Remote batch processing output is to printer.

RBPPU
Remote batch processing output is to card punch.

RDR
Subfile input is from designated card reader, tape, or data set label diskette.

- **Spool File Command Modifiers**

modifier-1,...,modifier-n
Optionally used to further identify, within specified directory, the subfiles being referenced. Any number of modifiers may be specified. Allowable modifiers are:

ACCT= { acctno / * }
1—4 characters

CART= { cartridge-id / * }
Print cartridge identification, 1—8 characters

DDPID=host-id
1—4 characters (output writer BX function only)

DEV= { 768 / 770 / 773 / 776 / 778 / 789 / 9300 / * }
Any device of the type designated that is available; 9300 designation refers to SPERRY UNIVAC 9300 System being used as a 90/30 system peripheral device.

FILE= { filename / * }
1—8 characters

FORM = {formname / *}
1—8 characters

ID = remote-id
1—6 characters (output writer BX function only)

JOB = {jobname / *}
1—8 characters

LBL = labelname
1—8 characters for data set label diskette;
1—17 characters for card reader

STEP = stepno
3 characters (left-justified with zeros)

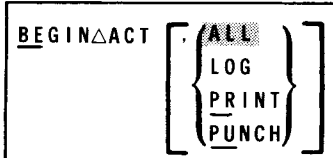
VOL = volno
1—6 characters (diskette only)

NOTES:

1. Command keyins cannot exceed 28 characters in length, including commas.

2. Enter * and a modifier type to group spool file contents for processing on a first-in, first-out basis. Provides a complete spool file listing, grouped according to the modifier specified.

■ **Removing Active Files from Hold Condition (BEGIN ACT)**

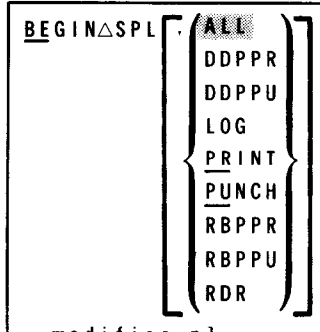


Removes hold status from files currently being created in directory named.

LOG does not affect remote batch or distributed data processing job logs.

Command is ignored if modifiers entered.

■ **Removing Closed Files from Hold Condition (BEGIN SPL)**



Removes hold status from closed files in the directory named, according to modifiers specified. Also loads output writer automatically to process files in burst mode.

LOG does not affect remote batch or distributed data processing job logs.

If RDR is entered without LBL=label modifier, all reader spooled files are removed from hold condition.

If no directory or ALL is entered, only LOG, PRINT, PUNCH, and RDR are affected.

BEGIN△SPL [,{LOG / PRINT / PUNCH}] [,modifier-1,..., modifier-n],OUT=did	Removes hold status from closed files in directory named, according to modifiers specified. Also loads output writer automatically to process files in burst mode. The output is printed on the device specified by OUT=did. LOG does not affect remote batch or distributed data processing job logs.

- **Removing Active and Closed Files from Hold Condition (BEGIN SPQ)**

BEGIN△SPQ [,{ALL / LOG / PRINT / PUNCH}]	Combines BE ACT and BE SPL commands. Removes hold status from both currently active and closed files in directory named. Also loads output writer automatically to process files in burst mode. LOG does not affect remote batch or distributed data processing job logs. Command is ignored if modifiers entered.

■ **Breakpointing an Active File (BRKPT)**

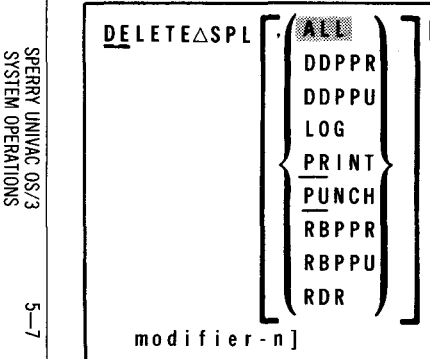
BRKPT△{P | I},{**PR**INT | **PU**NCH},JOB=jobname[,modifier-1,..., modifier-n]	Breakpoints printer or punch file currently being created by job name and modifiers specified. P Breakpoints file at end of the page; I breakpoints file immediately. Diskette files cannot be breakpointed. This command closes files and makes them available to output writer. New file is created that contains remainder of file. You should use this command whenever warning messages indicating spool file is nearly depleted appear on console screen. After breakpoint is taken, you should load output writer in burst mode to process the file.

■ **Breakpointing the Console Log File (BRKPT CNSLG)**

BRKPT△**CN**SLG	Breakpoints console log file and prints it. New console log file starts with first message or command after breakpoint command. After BRKPT is issued for console log file, output writer is loaded automatically. Output writer recognizes the console log file and prints it.

	Console log record collection must be set to ON with option to permit printing (specified via SET SPL,CN command in effect).

- **Deleting Closed Files (DELETE SPL)**

	Deletes closed files in directory named according to modifiers specified. Includes queued files (waiting for output writer processing) and files in hold condition. Active files and files in progress (being processed) cannot be deleted. LOG does not affect remote batch or distributed data processing job logs. If RDR is entered without LBL=label modifier, all reader spooled files are deleted. If ALL is entered, only LOG, PRINT, PUNCH, and RDR are affected.

■ Displaying the Status of Active Files (DISPLAY ACT)

```
DISPLAY△ACT[,(ALL    )][,modifier-1,...,
             (DDPPR  )
             (DDPPU  )
             (PRINT  )
             (PUNCH  )
             (RBPPR  )
             (RBPPU  )]
  modifier-n]
```

Displays the number of files currently being created in directory named, according to modifiers specified.

Solicited messages are used to direct and terminate display. Includes option to display further information about some or all of files specified in detailed or abbreviated format.

- **Displaying the Status of Completed Files (DISPLAY SPL)**

DISPLAY△SPL [,(ALL | DDPPR | DDPPU | LOG | PRINT | PUNCH | RBPIN | RBPPR | RBPPU | RDR)] [,modifier-1,...,modifier-n]	Displays the number of completed files (queued for processing, on hold, and in progress) in directory named, according to modifiers specified. Solicited messages are used to direct and terminate display. Includes option to display further information about some or all of files specified in detailed or abbreviated format. LOG does not affect remote batch or distributed data processing job logs.

- **Displaying the Console Log Status (DISPLAY CNSLG)**

DISPLAY△CNSLG	Displays the number of lines accumulated in current console log file.

■ **Displaying the Spooling Mode of Operation (DISPLAY SPL, STATUS)**

DISPLAY△SPL,STATUS	Displays burst or nonburst mode of operation currently in effect. For burst mode, includes selection criteria when specified.

■ **Placing Active Files in Hold Condition (HOLD ACT)**

HOLD△ACT [,{ALL / LOG / PRINT / PUNCH}]	Places on hold files currently being created in directory named. LOG does not affect remote batch or distributed data processing job logs. Job logs for jobs found in error by run processor are not affected. Command is ignored if modifiers entered.

- **Placing Closed Files in Hold Condition (HOLD SPL)**

HOLD△SPL[,(ALL / DDPPR / DDPPU / LOG / PRINT / PUNCH / RBPPR / RBPPU / RDR)][,modifier-1,...,modifier-n]	Places on hold closed files in directory named, according to modifiers specified. LOG does not affect remote batch or distributed data processing job logs. If no directory or ALL is entered, only LOG, PRINT, PUNCH, and RDR are affected.

- **Placing Active and Closed Files in Hold Condition (HOLD SPQ)**

HOLD△SPQ [.{ALL / LOG / PRINT / PUNCH}]	Combines HO SPL and HO ACT commands. All closed files in directory named are immediately placed in hold condition; all active and future files in directory are placed on hold when closed. LOG does not affect remote batch or distributed data processing job logs. Job logs for active jobs found in error by run processor are not affected; job logs for closed jobs that were found in error are held. Command is ignored if modifiers entered.

- **Setting Spooling System Operating Mode (SET SPL,BURST/NBURST)**

SET△SPL,{BURST[,modifier] / NBURST}	Sets spooling system operating mode for processing output files to burst or nonburst (NBURST). All subsequently loaded output writers run in mode selected. Previously loaded output writers are not affected. A modifier tailors file selection for burst mode processing.

■ **Setting Console Log and Workstation Log File Specifications (SET SPL,CNSLG)**

SET△SPL,CNSLG [,{ON / OFF}] [,{RETAIN / DELETE}] [,{PRINT / NOPRINT}]	Turns console log and workstation log record collection function on and off, deletes or accumulates (RETAIN) console log for transfer to SYSLOG, and prints or does not print console log. Must be set to ON to accumulate or print console log or to accumulate or print workstation log via SET SPL,PRINT and SET SPL,DUMP commands respectively. If any optional parameters are omitted, console log file remains in same condition or mode for that parameter that it was in before the command. Blinking marker symbol (◥) in rightmost position of console line indicates message not written to console log.

- **Setting Accumulation of Job Log and Workstation Log Files (SET SPL,DUMP/ENDDUMP)**

SET△SPL, { DUMP / ENDDUMP }	Deletes or accumulates job log and workstation log files after printing for transfer to SYSLOG. DUMP specifies files are accumulated for later routing to SYSLOG tape or disk file; ENDDUMP specifies no accumulation. The SET SPL,CN,ON command must be in effect to accumulate workstation logs.

- **Setting Job Log and Workstation Log Printing Specifications (SET SPL,NOACT/NOLOG/NOPRINT/PRINT)**

SET△SPL, { NOACT / NOLOG / NOPRINT / PRINT }	Specifies what job log and workstations log records are to be printed: job log (L and A) records at end of job and workstation log (W and R) records at breakpoint or end of session. NOACT specifies not to print accounting (A) records; NOLOG specifies not to print log (L) records and workstation (W and R) records; NOPRINT specifies not to print job accounting (A) and log (L) records, and workstation (W and R) records; and PRINT specifies printing all job log (A and L) and workstation log (W and R) records. JOBACCT=YES must be specified at SYSGEN to control A record printing; SET SPL,CN,ON command must be in effect to control W record printing.

- **Setting the Spool File Printout Format (SET SPL,NOHDR/HEADER)**

SET△SPL,{HEADER / NOHDR}	Suppresses (NOHDR) or prints (HEADER) 3-page header preceding each spooled print file.

- **Setting Forms Change Message (SET SPL,TEST/NOTEST)**

SET△SPL,{NOTEST / TEST}	Displays (TEST) or suppresses (NOTEST) console message indicating a forms change with option to print test lines.

INPUT READER COMMANDS

Used to load an input reader symbiont to transfer a card or data set label diskette file into the RDR spool directory.

- **Spooling Punched Card Input Files**

IN[(did)]△[{51 / 66}]	Loads input reader for spooling punched card input. Specify either 51- or 66-column punched cards; if omitted, 80-column (or 96-column, if configured) punched cards are read. A // DATA job control statement must precede jobs or data files to be spooled. Punched cards are read until a // FIN or another // DATA statement is detected. If no device (did) is specified, first available card reader (SYSRDR) is expected to contain input file.

- **Spooling Data Set Label Diskette Input Files**

IN([did],label)△[RETAIN][,DELETE]	Loads input reader for spooling diskette input. Label must match LBL job control statement file name with maximum of 8 characters. RETAIN specifies spooled file is retained after job processing. Retained file is available for additional processing until deleted via DELETE command or via the DELETE parameter in a subsequent introduction of a spooled subfile having the same label. The DELETE parameter specifies that spool subfiles with the same label name are to be deleted prior to creating the new subfile. Use only with single volume input.

- **Spooling Tape Input Files**

IN(did)	Loads input reader for spooling tape input, where did is the device address of the tape unit. Tape must be unlabeled, unblocked, and contain no block numbers. A // DATA job control statement must precede jobs or data files to be spooled. Used only with single volume input.

OUTPUT WRITER COMMANDS

Used to load an output writer symbiont according to the operating mode and selection criteria specified. Solicited and unsolicited messages are used to direct the operation of output writers that are active in the system.

Output writers are loaded under three conditions:

1. Automatically by system when files require processing and appropriate device is available.
2. Automatically when operator enters BEGIN spooling command.
3. Manually by operator using output writer commands and messages. Function codes and modifiers are included to change operating mode, select criteria, and tailor processing.

Under certain conditions, such as system set in nonburst mode, the operator manually loads output writers in order to have files printed. Other conditions include:

1. Warm start (recover files at IPL) if set to nonburst at SYSGEN
2. BR function if system is in nonburst mode
3. STOP or HALT function previously entered from console and printing a job's files is incomplete
4. IN function when reintroducing redirected tape, disk, or format label diskette output

Manually Loading Output Writer

{PD / PR / PU}[(did)]△[function-code][modifier-1,..., modifier-n]	Loads output writer for printer (PR), punch (PU), or data set label diskette (PD) file processing. If did (device address) is omitted, system assumes only one device is available and selects first available device. When device address is tape, disk, or diskette unit, output file is redirected to that device (not valid with PD). PD does not require device address; job control device assignment set provides diskette location to be used. Function-code specifies output writer mode of operation and processing criteria. (Function codes are described in later paragraph.) If omitted, output writer is loaded in mode (burst or nonburst) assigned at SYSGEN. After function is entered and request is completed, system usually requests entry of another function. Enter function that is using solicited message reply format (described in following paragraphs), or press transmit key if no additional functions are required. Command modifiers further identify files to be processed.

PR△[function-code],UID=user-id[,modifier-1, ..., modifier-n]	Loads output writer for nonauxiliary destined print files created on behalf of a workstation user. Function-code specifies output writer mode of operation and processing criteria. (Function codes are described in later paragraph.) If omitted, output writer is loaded in mode (burst or nonburst) assigned at SYSGEN. The UID parameter identifies the workstation user for whom the print files were created. Command modifiers further identify files to be processed.
RP△BX,UID=user-id[modifier-1,...,modifier-n]	Loads a print output writer symbiont that will print at a central site output destined for a workstation auxiliaty printer. The BX specifies that the output writer is to function in burst mode. The UID parameter identifies the workstation user for whom the print files were created. Command modifiers further identify files to be processed.

■ Directing Active Output Writer

Used to change operating mode or processing criteria of active output writer. Messages are either solicited (output writer requests function from operator) or unsolicited (operator interrupts output writer processing to enter a function).

Unsolicited messages cannot be entered if output writer is waiting for response to solicited message.

Solicited Message Reply Format

Øi△function-code	Used to respond to function request from output writer. Both job number (0) and message-id (i) must be included in reply. Message-id corresponds to the message-id transmitted by requesting output writer. Allowable functions are described under output writer function codes.

Unsolicited Message Reply Format

ØØ△{PD / PR / PU} [(did)]△function-code	Used to interrupt active output writer to issue a function change. The job number and message-id (00) are used to communicate with output writer (via the supervisor).

(continued)

	PD (diskette), PR (printer), or PU (punch) identifies the output writer to be interrupted. If the did is omitted, system assumes output writer is active at first available device. Allowable functions are described in list of output writer function codes. Use the DEV function code to redirect output currently being processed.

■ **Output Writer Function Codes**

{**BURST** / **BX**} △[,modifier-1,...,modifier-3]	Places the output writer in burst mode. Functions can be further qualified by optional modifiers 1 through 3. Modifiers that may be specified are listed in the description of general spooling commands. (STEP, LBL, and VOL are not used with BU and BX.) If BX is entered with modifiers, the output writer terminates after processing all files that satisfy the modifiers. If BU is entered, the output writer requests another function if more files exist that do not satisfy modifiers.
BYPASS	Terminates processing of the current file. Current file is closed and output writer continues processing next file. Bypassed files can be restarted later.

COPIES,nnn	Sets the number of copies the output writer is to produce for each file it processes. One to 255 copies (nnn) may be specified. If 0 is specified, 1 is assumed. File closed when processing is completed. This function cannot be used with diskette (PD) output writer.
DELETE	Deletes the file being processed, and proceeds with next file to be processed.
DEVICE[,did]	Indicates that output writer is to change device it is currently using to print (punch) its output. If a new did is specified, it is assigned to the output writer and current device is deallocated. If the did is omitted, a device having same characteristics as current device replaces the current device. The new device remains in use as long as same copy of output writer remains in main storage. If output is to be redirected, specify the tape, disk or diskette device (did) in the function code, and all subsequent output files are redirected to that device, as long as that copy of output writer is active. Redirected output to diskette is recorded in format label mode. If some form of restart is to be performed prior to switching of device, enter the RESTART function before entering DEVICE function.

(continued)

■ **Output Writer Function Codes (continued)**

DISPLAY	Displays the status of current file on the console screen. The information displayed is: 1. File name 2. Job name 3. Program name 4. Job step number 5. Current page (card) number 6. Total pages (cards) in file 7. Number of remaining copies 8. Existence of a breakpoint Function is ignored if no file is open.
HALT	Terminates output writer after current file (if any) is processed. If file being processed has multiple copies, remaining copies are produced when output writer is reloaded.

HOLD	Places the current file in a hold state and begins processing next file. Files in hold state are not available for processing until released by BEGIN command.
INPUT,did[,B]	Directs output writer to accept input from tape, disk, or diskette unit (did) identified in function code. Used to reintroduce redirected output so that it can be printed or punched. If input is from disk or format label diskette, the B option may be included to permit specific files to be selected. When B is entered with function, a message is displayed requesting another function. Enter BX function with modifiers to specify particular files to be printed or punched (cannot be used with PD).
NBURST	Places output writer in nonburst mode. If specified while output writer is processing a file, function does not take effect until file processing is completed.

(continued)

■ Output Writer Function Codes (cont)

RETAIN	Retains currently active file in a HOLD state in spool file after it is processed. The retained file is unavailable for additional processing until released via BEGIN command. (Otherwise, delete the retained file via DELETE command.)
RESTART [,nnn / ,PAGE,nnnn / ,CARD,nnnn]	Restarts processing of currently active file from a number of pages or cards. If number is not specified, output writer restarts processing from beginning of file. If only nnn is entered, file processing is restarted nnn pages or cards back from current position of file. If PA or CA is entered with nnnn, file is positioned back to page or card identified by nnnn. RESTART cannot be used with PD. Enter RESTART,nnn first if used in conjunction with DEVICE.
SKIP, {nnnn / PAGE,nnnn / CARD,nnnn}	Directs output writer to skip forward a specific number (nnnn) of pages or cards or to skip forward to specific page number (PAGE,nnnn) or card number (CARD,nnnn). After positioning, request is made for another function. SKIP cannot be used with PD.

STOP[,PAGE]	Directs output writer to stop processing. If PAGE is omitted, output writer terminates immediately. If PAGE is included, output writer terminates after printing the complete current page. File being processed is closed but not deleted. When accessed by another output writer, file is processed from point at which it was closed.

PROCESSING THE SPOOL LOG FILE

Systems that are generated with spooling maintain a log subfile in the spool LOG file for each job processed in the system. The job log subfile contains the job's messages and job control statements (L records) and, when JOBACCT=YES was included during SYSGEN, the job's accounting (A) records. Spooling also maintains a workstation log subfile in the spool LOG file, provided the CONSOLOG parameter was included during SYSGEN. The workstation log subfile contains a record of all system messages written to and read from the workstation.

As each job or workstation session terminates, its associated job log subfile is closed and usually output to a high-speed printer as soon as the device becomes available. If the system is generated with the accumulate system job and workstation log files option (SYSLOG=YES) or if the operator issues the SET SPL,DUMP command after system initialization, the job and workstation log subfiles are marked as having been printed and then accumulated to allow further processing by user job accounting and bookkeeping programs.

(continued)

A record of all messages written to and read from the console is also maintained in the spool LOG file, provided console logs are specified with the CONSOLOG parameter during SYSGEN. Console logs can be printed at any time by the operator and can also be accumulated for future use. They are accumulated when either the SYSGEN parameter RETAINLOG has been specified or when the operator enters the SET SPL,CNSLG command with the RETAIN parameter included.

Two programs are provided to assist the spool LOG file processing: the system log accumulation program (SL$LOG) and, for job logs, the JOBLOG program. SL$LOG transfers selected portions of the accumulated job and workstation log or accumulated console log subfiles from the spool LOG file to a SYSLOG file on disk or tape. After SL$LOG execution, the SYSLOG file is available for processing.

Usually SL$LOG is used to dump the accumulated job and workstation log so it can be used as input to the JOBLOG program. The JOBLOG program generates a job accounting report based on the accumulated job and workstation log in the SYSLOG file. Since the SL$LOG program may also be used to dump the accumulated console log to SYSLOG, the following steps should be performed in the sequence shown to ensure the integrity of SYSLOG output:

1. Execute the SL$LOG program to dump the accumulated job and workstation log records.
2. Execute the JOBLOG program to produce a job accounting report.
3. Execute the SL$LOG program to dump the accumulated console log records.
4. Execute a user-written program to process the console log output.

The SL$LOG program is executed by using the RUN command with a job control stream (named DUMPLOG for disk or DUMPLOGT for tape) supplied by Sperry Univac. The operator also uses the RUN command to execute the JOBLOG program. Using the SYSLOG file as input, JOBLOG calls on the OS/3 independent sort/merge routine to create a sorted SYSLOG output file. After the sorting process is complete, JOBLOG uses the sorted file to produce the accounting report.

- Using Tape for the Job and Workstation Log SYSLOG File (**RUN DUMPLOGT**)

RUN△**DUMPLOGT** [, [, D={**ACT** / **LOG**}] [, V={vsn / **SYSLOG**}] [, C={**Y** / **N**}]]

Establishes SYSLOG file on tape and transfers accumulated job and workstation log records from spool LOG file into SYSLOG.

D={**ACT** / **LOG**}

Specifies accounting (A) records (ACT) or log (L) and workstation (W and R) records (LOG) are transferred. If omitted, all records are transferred.

V={vsn / **SYSLOG**}

Identifies volume serial number of tape to be used. If omitted, SYSLOG is used.

C={**Y** / **N**}

Specifies whether checkpoint records are desired. If omitted, checkpoint records are specified.

■ **Using Disk for the Job and Workstation Log SYSLOG File (RUN DUMPLOG)**

RUN△DUMPLOG , , F=ALLOC [, D= {ACT / LOG}]	Establishes SYSLOG file on disk and transfers accumulated job and workstation log records from spool LOG file into SYSLOG. **F=ALLOC** Specifies SYSLOG file space is allocated on disk. **D=** {ACT / LOG} Specifies accounting (A) records (ACT) or log (L) and workstation (W and R) records (LOG) are transferred. If omitted, all records are transferred.

- **Adding Job and Workstation Log Subfiles to SYSLOG File on Disk (RUN DUMPLOG)**

RUN△DUMPLOG[, , D=**{ACT / LOG}**]	Adds additional accumulated job and workstation log subfiles to existing SYSLOG file. D=**{ACT / LOG}** Specifies accounting (A) records (ACT) or log (L) and workstation (W and R) records (LOG) are transferred. If omitted, all records are transferred.

- **Reinitializing Job and Workstation Log SYSLOG File on Disk (RUN DUMPLOG)**

RUN△DUMPLOG , , F=INIT [, D=**{ACT / LOG}**]	Reinitializes (effectively erases) SYSLOG file and transfers new accumulated job and workstation log subfiles from spool LOG file to SYSLOG. **F=INIT** Specifies SYSLOG file space is reinitialized on disk.

(continued)

■ **Reinitializing Job and Worstation Log SYSLOG File on Disk (RUN DUMPLOG) (cont)**

	D={ACT / LOG} Specifies accounting (A) records (ACT) or log (L) and workstation (W and R) records (LOG) are transferred. If omitted, all records are transferred.

■ **Running JOBLOG Using Tape Input (RUN JBLOGT)**

{RUN / RV} △JBLOGT [, , V={vsn / SYSLOG} , S={A / B / C}]	Sorts tape file input to produce job accounting report. V={vsn / SYSLOG} Identifies volume serial number of tape containing job accounting file. If omitted, SYSLOG is used.

$$S=\left\{\begin{matrix}\mathbf{A}\\ \mathbf{B}\\ \mathbf{C}\end{matrix}\right\}$$

Specifies sort option. The A option sorts jobs in order submitted; B sorts jobs in accounting number and job name order (default condition), with subtotals taken whenever accounting number and job name sequence changes; C sorts jobs in accounting number and job name order, with subtotals taken whenever accounting number field changes.

■ **Running JOBLOG Using Disk Input (RUN JBLOG)**

RUN△JBLOG$\left[\right.$,,V=$\left\{\begin{matrix}\text{vsn}\\ \mathbf{RES}\end{matrix}\right\}$,L=$\left\{\begin{matrix}\text{file-identifier}\\ \mathbf{SYSLOG}\end{matrix}\right\}$

,S=$\left\{\begin{matrix}\mathbf{A}\\ \mathbf{B}\\ \mathbf{C}\end{matrix}\right\}\left.\right]$

Sorts disk file input to produce job accounting report.

$$V=\left\{\begin{matrix}\text{vsn}\\ \mathbf{RES}\end{matrix}\right\}$$

Identifies volume serial number of disk containing job accounting file. If omitted, SYSRES (RES) is used.

(continued)

■ **Running JOBLOG Using Disk Input (RUN JBLOG) (cont)**

L=$\left\{\begin{array}{l}\texttt{file-identifier}\\ \texttt{SYSLOG}\end{array}\right\}$

Identifies file name of job accounting file. If omitted, SYSLOG is name used.

S=$\left\{\begin{array}{l}\texttt{A}\\ \texttt{B}\\ \texttt{C}\end{array}\right\}$

Specifies sort option. The A option sorts jobs in order submitted; B sorts jobs in accounting number and job name order (default condition), with subtotals taken whenever accounting number and job name sequence changes; C sorts jobs in accounting number and job name order, with subtotals taken whenever accounting number field changes.

■ Using Tape for the Console Log SYSLOG File (RUN DUMPLOGT)

RUN△DUMPLOGT,,D=CON [,V={vsn / **SYSLOG**}] [,C={**Y** / N}]

Establishes SYSLOG file on tape and transfers accumulated console log records from spool LOG file into SYSLOG.

D=CON

Specifies console log (C) records only are transferred.

V={vsn / **SYSLOG**}

Identifies volume serial number of tape to be used. If omitted, SYSLOG is used.

C={**Y** / N}

Specifies whether checkpoint records are desired. If omitted, checkpoint records are specified.

■ **Using Disk for the Console Log SYSLOG File (RUN DUMPLOG)**

RUN△DUMPLOG,,F=ALLOC,D=CON	Establishes SYSLOG file on disk and transfers accumulated console log records from spool LOG file into SYSLOG. **F=ALLOC** Specifies SYSLOG file space is allocated on disk. **D=CON** Specifies console log (C) records only are transferred.

■ **Adding Console Log Subfiles to SYSLOG File on Disk (RUN DUMPLOG)**

RUN△DUMPLOG,,D=CON	Adds additional accumulated console log subfiles to existing SYSLOG file. **D=CON** Specifies console log (C) records only are transferred.

- **Reinitializing Console Log SYSLOG File on Disk (RUN DUMPLOG)**

RUN△DUMPLOG,,F=INIT,D=CON	Reinitializes (effectively erases) SYSLOG file and transfers new accumulated console log subfiles from spool LOG file to SYSLOG. **F=INIT** Specifies SYSLOG file space is reinitialized on disk. **D=CON** Specifies console log (C) records only are transferred.

INTEGRATED COMMUNICATIONS ACCESS METHOD (ICAM) PROCEDURES

The ICAM symbiont handles data communications tasks. Each symbiont may contain multiple network definitions (CCAs), and each CCA can handle one or more communications lines. One or more ICAM symbionts can be configured during SYSGEN. Each symbiont satisfies specific communications network requirements. A single ICAM symbiont can be configured to satisfy all communications requirements. You must load the appropriate ICAM symbiont before the programs requiring it can be executed or before interactive services can start for terminals. In addition, when interactive services or global networks are required, you must initiate the running of the global user service task (GUST) after loading ICAM. The ICAM symbiont remains in main storage until the last program or interactive services terminal session is completed and GUST is shut down. Then ICAM shuts itself down unless the system operator loaded ICAM with a KEEP operand. In this case, ICAM must be terminated with a CANCEL command.

LOADING THE ICAM SYMBIONT (Cn/Mn)

ICAM symbionts are named C1—C9 or M1—M9, and are assigned during system generation. The command format to load ICAM is:

{Cn / Mn}	Loads the specified ICAM module to handle the communications task required, where n is 1 to 9. After the module is loaded, the following output message is displayed: **ICAM READY**

CHANGING THE ICAM NAME (SET IC)

SET△IC, {Cn / Mn / C?}	Changes the name of the ICAM symbiont (C1—C9, M1—M9) that is loaded if remote batch output has output ready and ICAM is not loaded. C? causes the system to ask the operator to supply the symbiont name to be used the next time output is ready and ICAM is not loaded.

INITIALIZING AND TERMINATING THE GLOBAL USER SERVICE TASK

You must initialize the global user service task (GUST) before starting interactive services for terminals or before executing user programs requiring global networks. You initiate the running of the job that executes the global user service task program ML$$GI through a console workstation command entry. See your system administrator for the name of the GUST job to initiate. When global network processing is no longer required for interactive services at terminals or for user programs, you enter an unsolicited message to shut GUST down.

- **Running the Global User Service Task Job**

RUN△jobname	Runs the GUST job (jobname) to initiate execution of ML$$GI program. Respond to ML$$GI output messages to provide information required to initialize global network.

- **Terminating the Global User Service Task**

ØØ△{Cn / Mn}△GU△S,network-name,jj	Unsolicited message cancels GUST job to end global network processing. Include name of currently loaded ICAM symbiont (C1—C9 or M1—M9), the 4-character name of active global network (network-name), and the GUST job number (jj).

DIRECTING ICAM OPERATIONS

On occasion, you may be required to enter an unsolicited message to mark up or down the lines, terminals, or ports in an ICAM symbiont. The general format for these messages is:

ØØ△{Cn / Mn}△cc△f,{xxxx / xx},jj	**C n and M n** Specifies name of ICAM symbiont (C1—C9 or M1—M9). **c c** Is command code for action required. **f** Is facility type: line (L), port (P), or terminal (T). **x x x x** Is 1- to 4-character line/terminal name defined in label field of LINE or TERM macroinstruction. **x x** Is the port number on the communications adapter or the SLCA number. **j j** Is job number.

The following are unsolicited messages to ICAM:

ØØ△{Cn / Mn}△UP△L,xxxx,jj	Marks line specified as available (up)
ØØ△{Cn / Mn}△DO△L,xxxx,jj	Marks line specified as unavailable (down)
ØØ△{Cn / Mn}△UP△T,xxxx,jj	Marks terminal specified as available (up)
ØØ△{Cn / Mn}△DO△T,xxxx,jj	Marks terminal specified as unavailable (down)
ØØ△{Cn / Mn}△UP△P,xx,jj	Marks port specified as available (up)
ØØ△{Cn / Mn}△DO△P,xx,jj	Marks port specified as unavailable (down)
ØØ△{Cn / Mn}△CN△L,xxxx,jj	Notifies ICAM that dialing is completed on switched line specified.
ØØ△{Cn / Mn}△CN△L,ALL,jj	Notifies ICAM that dialing is completed on all switched lines

ENTERING A PACKET SWITCHED PUBLIC DATA NETWORK

Packet switched public data network console type-ins have the following format:

ØØ△{Cn / Mn}△cccc△jj,llll,dddd	**Cn and Mn** Specifies name of ICAM symbiont (C1—C9 or M1—M9). **cccc** Is command code for action required. **jj** Is the job number. **llll** Is the 1- to 4-character label of the VLINE macroinstruction for this line. **dddd** Is the 1- to 4-character label of the PDN macroinstruction that identifies the packet switched public data network affected by this type-in.

The following are packet switched public data network console type-ins:

ØØ△{Cn / Mn}△STAT△jj,llll,dddd	Display the level 2 status of the link on the operator's console.
ØØ△{Cn / Mn}△CONN△jj,llll,dddd	Establishes a connection to the level 2 link.
ØØ△{Cn / Mn}△DISC△jj,llll,dddd	Drops a connection to the level 2 link.
ØØ△{Cn / Mn}△TEST△jj,llll,dddd	Initiates level 2 self testing procedures.

SYSTEM UTILITY SYMBIONTS

You use the system utility symbiont (SL$$SU) to request and control the performance of many different functions using cards, tapes, disks, and diskettes.

The SU/TU command loads the system utility symbiont. SU and TU can be used interchangeably for all functions. However, we recommend you use TU for tape operations since TU increases the buffer size for all selector channgel tapes from 8189 to 32,767 bytes.

You can include the required function as a parameter with the SU/TU command. A spooling parameter can also be entered with the command, if spooling is configured in your system. When you enter the command alone to load the symbiont, enter the function as a solicited message.

After the symbiont is loaded, control it by responding with solicited messages. Use unsolicited messages only to terminate the symbiont or current symbiont functions on certain occasions.

■ Initializing the System Utility Symbiont

Command Entry	Description
{SU / TU} △ [function-code [, { H / N / R }]]	The 2- or 3-character function codes are described later under the appropriate CARD, TAPE, DISK, or DISKETTE UTILITY FUNCTIONS headings. H specifies output is placed on HOLD before it is printed or punched. N specifies output is not spooled. R specifies output is placed on HOLD after printing or punching. Y

(continued)

Command Entry	Description
	specifies output is spooled. When Y is specified or taken as the default condition, the output writer automatically prints or punches any spooled output at the end of each SU function. All possible function codes that are recognized by either symbiont can be displayed on the system console by entering XXX in place of the function code. Following this display, the symbiont requests that you enter the required function code.

When the symbiont is loaded, the following message is displayed:

Øi SYSTEM UTILITY SYMBIONT LOADED	If a function code was included in the command entry, the symbiont completes the requested function, then requests that you enter another function. If a function code is omitted, the symbiont requests that you enter a function.

The ENTER REQUIRED FUNCTION message is displayed as follows:

Message Display	Operator Reply
(With Spooling) Ø? ENTER REQUIRED FUNCTION AND SPOOL OPTION [,Y,N,R,H] DEFAULT=Y	Øi function-code, { H / N / R / Y }
If the spool option is incorrectly entered, the message is displayed: Ø? IS { PRINTED / PUNCHED } OUTPUT TO BE SPOOLED FROM SU Y,N,R,H	Øi { H / N / R / Y }
(Without Spooling) Ø? ENTER REQUIRED FUNCTION	Øi function-code

- **Terminating the System Utility Symbiont**

Message Entry	Symbiont Response (Messages)	Description
Øi EOJ	Øi SYSTEM UTILITY SYMBIONT ENDED	Terminates symbiont. Reply is made to function request; ENTER REQ FUNCTION
ØØ {SU / TU} EOJ	Øi SYSTEM UTILITY SYMBIONT ENDED	Unsolicited entry used to terminate symbiont immediately (before function is completed)
ØØ {SU / TU} END	Øi ENTER REQ FUNCTION	Unsolicited entry used to terminate only the current function but not the symbiont

NOTE:

When message replies are entered incorrectly or a reply cannot be honored, the symbiont requests you to reenter the information. If no determination can be made as to why the entry is not accepted, use the unsolicited message to terminate either the current function or the symbiont.

- **Card Utility Functions**

A. Function Codes

Function Code	Function Performed
CC	Reproduces cards punched in Hollerith code
CC96	Reproduces 96-column cards*
CCB	Reproduces cards punched in binary and Hollerith code
CCS	Reproduces and resequences source programs
CS96	Reproduces and resequences source programs contained on 96-column cards*
CT	Writes card to tape in unblocked format
CT96	Writes 96-column cards to tape in unblocked format*
CTR	Writes card to tape in blocked format
CP	Lists cards
CP96	Lists 96-column cards in character format*
CH	Lists cards containing compressed mode
CH96	Lists 96-column cards in vertical hexadecimal format*
JCP	Punches cards from the system console

*Series 90 only.

B. Procedure

To request specific card functions, you must:

1. Enter the SU command.
2. Enter the desired function code.
3. Enter spooling option; otherwise, default is Y. (Applicable if spooling is configured)
4. If card file is to be read, place it in the card reader designated as the system reader (SYSRDR).

   a. If system reader is not available, the following message is displayed to identify the reader assigned to read the card file:

      Øi USE READER did

   b. If no card readers are available, the function is aborted and the following message is displayed:

      Øi NO READER AVAILABLE

   c. If no output device is available, the function code is aborted and the following message is displayed:

      Øi NO { PUNCH / TAPE / PRINTER } AVAILABLE

NOTE:

All card input files must be terminated by a card with END OF DATA punched into columns 1—11.

C. Operator Communications

Function Codes	Symbiont Message	Operator Reply
CC	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CC96 (Series 90 only)	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CCB	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CCS	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CS96 (Series 90 only)	Øi? XXX DECK TYPE Øi DECK NAME n CHARACTERS Øi? XXX	Enter: Øi BAL For source program in assembly language Øi COB For source program in COBOL Øi RPG For source program in RPG II Enter the correct characters that are used as the program (deck) name of output cards (8 characters for COBOL source deck; 6 characters for RPG II source deck; and 3 characters for BAL source deck). If you enter less than the specified number of characters, data given is left-justified and space-filled to the right.

C. Operator Communications (cont)

Function Code	Symbiont Message	Operator Reply
CT	Øi?CUUMMB OUTPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the output tape.
	Øi? MOUNT NEXT OUTPUT TAPE. REPLY R OR END	Enter END to terminate the CT function. Dismount the unloaded tape, mount next output tape, and then enter R if the function is to continue.
	Øi? DOES USER WISH TO PREP THIS TAPE? REPLY YES OR NO (This message issued only if you did not enter END for previous message.)	Enter N if no tape prep is required; CT function resumes. Enter Y to prep the tape. Tape prep function is activated; CT function resumes when prep is completed.
CH96 (Series 90 only)	Same as for CT function code	Same as for CT function code

CTR	Ø i? BLK FACTOR Ø i? CUUMMB OUTPUT TAPE B=BLK CNT Ø i? OUTPUT EXCEEDS ALLOCATED BUFFER	Enter blocking factor (1—100 for SU, 1—400 for TU). Enter tape unit device address and mode setting of the output tape. Reenter the function and blocking factor because the factor supplied exceeded maximum allowed and the function was terminated.
CP	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CT96 (Series 90 only)	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CH	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
CT96 (Series 90 only)	Refer to step 4 of the procedure.	Refer to step 4 of the procedure.
JCP	Refer to step 4 of the procedure.	If 60 or more columns are needed, position cursor under the 0—60 in the scale message and transmit. If having a blank in column 1 or 61 is required, enter a right parenthesis instead of a blank in that column. To terminate the JCP function, enter the message END and transmit immediately.

■ **Tape Utility Functions**

A. Function Codes

Function Code	Function Performed
TT	Copies a tape to another tape
TH	Prints a tape in character and hexadecimal format
THR	Prints a tape in character, hexadecimal, deblocked format
TP	Prints a tape containing only standard characters
TPR	Prints a tape in character and deblocked format
TRS	Locates a specific record on tape
TRL	Changes existing records on tape*
TC	Punches cards from tape
INT	Preps a tape

*Series 90 only.

Function Code	Function Performed
FSF	Forward spaces to a specific file
BSF	Backward spaces to a specific file
FSR	Forward spaces to a specific record
BSR	Backward spaces to a specific record
WTM	Writes tape marks
REW	Rewinds a tape
RUN	Rewinds a tape with interlock
ERG	Erases a portion of a tape

B. Procedure

To request specific tape functions, you must:

1. Enter the TU command (or SU if block size does not exceed 8192 bytes).
2. Enter the desired tape function code.
3. Enter spooling option; otherwise, default is Y. (Applicable if spooling is configured)
4. Place the input tape on the available tape unit and identify the tape unit to the symbiont.

C. Identifying Tape Unit to Symbiont (Tape Addressing)

Enter the tape unit identification code in following format:

c u u m m b

where:

c u u
Is the device address (channel, subchannel, and unit).

m m
Is the tape mode setting. (SYSGEN settings are assumed if specification is blank, 00, or omitted.)

b
Is the tape block count characteristics. (Block count is not assumed if specification is omitted.)

D. Operator Communications

Function Code	Symbiont Message	Operator Reply
TT	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of input tape.
	Øi? CUUMMB — OUTPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of output tape.
	Øi? #FILES 1—99	Enter number of files or marked files to be copied (1 through 99).
	Øi? MOUNT NEXT OUTPUT TAPE. REPLY R OR END	Enter END to terminate the TT function. Dismount the unloaded tape, mount next output tape, and then enter R if the function is to continue.
	Øi SUPPLY VOLUME SERIAL NUMBER FOR NEW OUTPUT TAPE Øi? XXXXXX (This message is issued only if operator did not enter END for previous message.)	Enter the volume serial number for the new output tape.
	USER LABEL RESTRICTIONS APPLY. SEE UP 8072	Informational message. Cautions user that SU/TU does not generate user trailer or header labels for multivolume output in addition to those encountered on input tape.

	Øi? END OF VOLUME? Y OR N	Enter Y to write the second marked tape after the file. Enter N if it is not to be written.
TH	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of input tape. If block count is entered, data is considered to begin in position 3, relative to position 0, for a length of blocksize minus 3 bytes.
	Øi? #BLKS OR END	Enter END to print entire tape. Enter the number of blocks to be printed if only a specific portion of tape is to be printed. Function is terminated if end-of-file code is detected before specified number of blocks are printed.
THR	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the input tape.
	Øi? #BLKS OR END	Enter END to print entire tape. Enter the number of blocks to be printed if only a specific portion of the tape is to be printed. Function is terminated if end-of-file code is detected before specified number of blocks are printed.
	Øi? LOGICAL REC LNTH	Enter logical record length.

(continued)

D. Operator Communications (cont)

Function Code	Symbiont Message	Operator Reply
TP	Identical to the TH function	Identical to the TH function except the output is in character format rather than character and hexadecimal.
TPR	Identical to the THR function	Identical to the THR function except the output is in character format rather than character and hexadecimal.
TRS	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the input tape.
	Øi? LOGICAL REC LENGTH	Enter (in bytes) the length of the logical record.
	Øi? LENGTH ARGUMENT (1—30)	Enter (in bytes) the scan argument (data field) length.
	Øi? STARTING DATA POSITION IN REC	Enter the byte position at which th data begins.
	Øi? ENTER IN HEX-H, CHAR-C	Enter H if data is hexadecimal or C if data is character.
	Øi? ENTER 10 BYTES, 1 CHAR PER BYTE	Enter the actual data needed as requested.
	Øi? CONTINUE SCAN? Y/N	Enter Y to continue scan; enter N if scan is to end.

TRL (Series 90 only)	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the input tape.
	Øi? CUUMMB — OUTPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the output tape.
	Øi? #BLKS OR END	Enter END if all records are changed. Enter the number of blocks (relative to current tape position) to the desired record if specific records are changed. Maximum number of records is 9999. If output tape reaches EOV before input tape fully copied, operator has option of mounting another output tape to continue; backward movement of new tape cannot be specified. See TT function for description of new output tape option.
	Øi? COPY FWD OR BACK? F OR B (This message issued only if operator did not enter END for previous message.)	Enter F if tape is to be moved forward. Enter B if tape is to be moved backward.
	Øi? DESIRED REC	Enter Y if desired record is reached for change. Enter N if desired record has not been reached.
	Øi? TAPE MARK, CONTINUE? Y/N	Tape mark encountered before desired record is reached. Enter Y to continue locating sequence. Enter N to terminate the function.

(continued)

D. Operator Communications (cont)

Function Code	Symbiont Message	Operator Reply
TRL (cont)	Øi? CHANGES TO LENGTH? Y/N	Enter Y to change block size. Enter N if block size is not to be changed.
	Øi? DESIRED REC LNTH	Enter new tape block length. If less than old length, block is truncated on the right. If new block is longer than old length, block is extended on right by spaces.
	Øi INPUT EXCEEDS ALLOCATED BUFFER	Indicates record length change exceeded allowable maximum length.
	Øi? #BYTES TO BE CHANGED, (1—30)	Enter number of bytes (1—30) required for change in data during the sequence.
	Øi? STARTING DATA POSITION IN REC	Enter first byte position (relative to 1) to be changed.
	Øi LENGTH EXCEEDS END OF RECORD	Indicates that the number of bytes to be changed plus the starting data position minus one exceeds the length of the active record. The sequence to locate the change field is reentered.
	Øi? ALTER IN HEX-H, CHAR-C	Enter H if new data entered is hexadecimal. Enter C if new data is character.

	Øi ENTER XX BYTES, Y CHAR PER BYTE Øi? 1...5...10...	Enter new data as directed by message; XX is the number of bytes and Y is 1 if alter is in character format or 2 if alter is in hexadecimal format.
	Øi INVALID HEX CHAR	Message displayed if invalid hexadecimal character is detected when alter data is entered in hexadecimal. The sequence to obtain new data is reentered.
	Øi? CHANGES COMPLETE? Y/N	Enter Y if changes to current block are complete and next record locating sequence is to be initiated. Enter N if changes are not complete.
TC	Øi? CUUMMB — INPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the input tape. (The function is terminated when two consecutive tape marks are encountered.)
INT	Øi? CUUMMB — OUTPUT TAPE B=BLK CNT	Enter tape unit device address, mode setting, and block count characteristics of the output tape.
	Øi ENTER NEW VOL# Øi? XXXXXX	Enter VOL1 record number (1—6 digits). If less than six digits entered, the new volume serial number is left justified and spaced filled on the right.
	Øi ENTER NEW FILE LABEL Øi? XXXXXXXXXXXXXXXX	Enter new file identifier (1—17 characters).
FSF	Øi? CUUMM — OUTPUT TAPE	Enter the tape unit device address and mode setting of the tape to be spaced forward.

D. Operator Communications (cont)

Function Code	Symbiont Message	Operator Reply
BSF	Øi? CUUMM — OUTPUT TAPE	Enter tape unit device address and mode setting of the tape to be spaced forward.
FSR	Øi? CUUMM — OUTPUT TAPE	Enter the tape unit device address and mode setting of the tape to be spaced backward.
	Øi? #BLKS	Enter the number of blocks to be advanced (9999 maximum).
BSR	Øi? CUUMM — OUTPUT TAPE	Enter tape unit device address and mode setting of tape to be backspaced.
	Øi? #BLKS	Enter number of blocks to be backspaced (9999 maximum).
WTM	Øi? CUUMM — OUTPUT TAPE	Enter tape unit device address and mode setting of tape to be marked.
REW	Øi? CUUMM — OUTPUT TAPE	Enter the tape unit device address and mode setting of tape to be rewound.
RUN	Øi? CUUMM — OUTPUT TAPE	Enter tape unit device address and mode setting of tape (UNISERVO 16 or 20) to be rewound.
ERG	Øi? CUUMM — OUTPUT TAPE	Enter tape unit device address and mode setting of the tape to be erased.

■ Disk and Format Label Diskette Utility Functions

A. Function Codes

Function Code	Function Performed
DD	Prints a disk or format label diskette in unblocked format
DDR	Prints a disk or format label diskette in reblocked format*
VTP	Prints the volume table of contents (VTOC)
SVT	Prints short format VTOC file
AVX	Displays available extents on console screen
DID	Changes volume serial number (VSN)*

(Series 90 only)

B. Procedure

When operating the system utility on disk or format label diskettes, remember that data length on an end-of-file record is in binary zeros (not applicable to IDA disk subsystems).

To request a specific disk or format label diskette function, you must:

1. Place the subject volume on an available disk unit.
2. Enter the SU command.
3. Enter the desired function code.
4. Enter spooling option; otherwise, default is Y. (Applicable if spooling is configured)

C. Operator Communications

Function Code	Symbiont Message	Operator Reply
DD	Øi? ENTER DVC ADDRESS	Enter device address of the disk pack or format label diskette to be displayed.
	Øi? CCCHH — BEGIN OR FILE-ID	Enter (in decimal) the beginning cylinder (CCC) and head (HH) to be displayed, or the file identifier (1—44 characters) as used on the LBL job control statement when the file was created. If you enter less than 44 characters, the file ID is padded with blanks on the right.
	Øi? CCCHH — END	Enter the last cylinder (CCC) and the head (HH) to be displayed.
	Øi? NO OF TRACKS TO PRINT UP TO 9	If file ID entered, now enter number of tracks to be printed.

DDR (Series 90 only)	Øi? ENTER DVC ADDRESS	Enter disk unit device address of the disk drive containing the disk pack to be displayed.
	Øi? CCCHH — BEGIN	Enter (in decimal) the first cylinder (CCC) and head (HH) to be printed.
	Øi? CCCHH — END	Enter (in decimal) the last cylinder (CCC) and head (HH) to be printed.
	Øi? RECORD SIZE	Enter (in decimal) the logical record size.
	Øi? BLOCK SIZE	Enter (in decimal) the logical block size. If block size is not an exact multiple of the record size, reenter the record size/block size sequence.
VTP	Øi? ENTER DVC/VSN, DI, ALL, FILE-ID, END, OR EOJ	Enter the volume serial number or the disk unit or format label diskette device address of the disk pack whose VTOC is to be printed and the particular option desired: DI — For a listing of device-only information FILE-ID — For a listing of up to 44 characters as used on the LBL statement when the file was created ALL — For a full VTOC listing END — To terminate the VTP function EOJ — To terminate SU

(continued)

C. Operator Communications (cont)

Function Code	Symbiont Message	Operator Reply
SVT	Øi? ENTER DVC OR VSN OR END	Enter the disk unit or format label diskette device address or the volume serial number of the VTOC to be printed. Otherwise, enter END to terminate the SVT function.
AVX	Øi? ENTER DEVICE ADDRESS	Enter the disk unit or format label diskette device address of the disk pack or format label diskette whose available extents are to be displayed.
DID (Series 90 only)	Øi? ENTER DEVICE ADDRESS	Enter disk unit device address of the disk pack VSN to be changed.
	Øi? ENTER OLD VSN OF DISK	Enter old VSN to be changed. (Must match the VSN in the disk VOL label.)
	Øi? ENTER NEW VSN OF DISK	Enter new VSN (up to 6 characters).

- **Data Set Label Diskette Utility Functions (Series 90)**

A. Function Codes

Function Code	Function Performed
DD	Prints a diskette in unblocked format
VTP	Prints the volume table of contents (VTOC) of a diskette
DID	Changes volume serial number (VSN) of a diskette

B. Procedure

To request specific diskette functions, you must:

1. Place subject diskette volume on the available diskette unit.
2. Enter the SU command.
3. Enter desired diskette function code.
4. Enter spooling option; otherwise, default is Y. (Applicable if spooling is configured)

C. Operator Communications

Function Code	Symbiont Message	Operator Reply
DD	ØI? ENTER DVC ADDRESS	Enter diskette unit device address of the diskette to be displayed.
	ØI? TTRR-BEGIN OR FILE-ID	Enter (in decimal) beginning track (TT) and sector (RR) to be displayed or enter file identifier used in LBL statement when file was created. File identifier may be 1—17 characters (left justified).
	ØI? TTRR-END	Enter (in decimal) last track and sector (RR) to be displayed.
VTP	ØI? ENTER DVC/VSN, DI, ALL, FILE-ID, OR END	Enter the volume serial number or the diskette unit device address of the diskette whose VTOC is to be printed and the particular list option desired: DI — For a listing of only device information FILE-ID — For a listing of up to 17 characters as used on the LBL statement when file was created ALL — For a full VTOC listing END — To terminate the VTP function

DID	Øi? ENTER DEVICE ADDRESS	Enter diskette unit device address of the diskette VSN to be changed.
	Øi? ENTER OLD VSN OF DISK	Enter old VSN to be changed. (Must match the VSN in the diskette VOL label.)
	Øi? ENTER NEW VSN OF DISK	Enter new VSN (up to 6 characters).

■ Data Set Label Diskette Utility Functions (System 80)

A. Function Code

Function Code	Function Performed
DD	Prints a data set label diskette (single-sided or double-sided) in unblocked format Prints the volume table of contents (VTOC) of a data set label diskette (single-sided or double-sided)

B. Procedure

To request specific diskette functions, you must:

1. Place subject data set label diskette volume on the available diskette unit.
2. Enter the SU command.
3. Enter DD diskette function code.
4. Enter spooling option; otherwise, default is Y. (Applicable if spooling is configured)

C. Operator Communications

Function Code	Symbiont Message	Operator Reply
	DD Printing Unblocked Format	
DD Single-sided diskette	Øi? ENTER DVC ADDRESS	Enter diskette unit device address of the data set label diskette to be displayed.
	Øi? TTRR-BEGIN	Enter (in decimal) beginning track (TT) and sector (RR) to be displayed.
	Øi? TTRR-END	Enter (in decimal) last track and sector (RR) to be displayed.
DD Double-sided diskette	Øi? ENTER DVC ADDRESS	Enter diskette unit device address of the data set label diskette to be displayed.

	ØI? CCCHH-BEGIN	Enter (in decimal) the beginning cylinder (CCC) and head (HH) to be displayed.
	ØI? CCCHH-END	Enter the last cylinder (CCC) and the head (HH) to be displayed.
DD Printing VTOC		
DD Single-sided diskette	ØI? ENTER DVC ADDRESS	Enter diskette unit device address of the data set label diskette whose VTOC is to be printed.
	ØI? TTRR-BEGIN	Enter 0008.
	ØI? TTRR-END	Enter 0026.
DD Double-sided diskette	ØI? ENTER DVC ADDRESS	Enter diskette unit device address of the data set label diskette whose VTOC is to be printed.
	ØI? CCCHH-BEGIN	Enter 00000.
	ØI? CCCHH-END	Enter 00001.

INTERACTIVE SERVICES COMMANDS

You use interactive services with an extended set of commands and messages to control the interactive system environment from the console. (For a description of all interactive services commands, see the interactive services commands and facilities user guide/programmer reference.)

When interactivity is included in your system at system generation (SYSGEN) time, the interactive services components are loaded automatically whenever required for the system operator and workstation users. If ICAM and the global user service task (GUST) are ready, a workstation user's interactive entry or your command loads interactive services for terminal users.

The following extended set of commands is available from the console.

- **Sending Messages to Users (TELL)**

TELL△{ALL / user-id},'text'	Sends message not requiring a response to specific workstation or terminal user, or to all users.

- **Asking Questions of Users (ASK)**

ASK△user-id,'text'	Sends message requiring a response to specific workstation or terminal user, accepts reply, and displays reply on console screen.

- **Displaying System Status (STATUS)**

STATUS△ [{JOBS / FUNCTIONS / RESOURCES / TERMINALS / VOLUMES}]	Displays volumes currently in use; status of active workstations, terminals, jobs, and functions; and status of system resources both in use and available.

- **Running Interactive Sessions as Batch Jobs (ENTER)**

The ENTER command is used to run a workstation or terminal user's interactive session as a batch run. Sessions may be entered from a library file disk or diskette or the spool file. Output from the session is always directed to a printer. A listing of the session as it was entered, followed by the output it produced, is printed at the conclusion of the session run.

When a batch session on cards is to be spooled, a // DATA job control statement must precede the first session card. The session cards are read into the spool file until a // FIN or another // DATA card is detected.

- **Starting Interactive Services (IS)**

IS△[REMOTE△START]	Used to manually start interactive services after completed interactive services shutdown, or used with REMOTE START to start interactive services for terminals when ICAM and GUST are ready and no workstation entry has automatically loaded them.

INTERACTIVE SERVICES MESSAGES

You use unsolicited messages provided by interactive services for additional control over the interactive environment. The following extended set of messages is available only from the console.

- **Terminating User Sessions (REMOVE Message)**

ØØ△IS△REMOVE△{user-id / ALL / task-id}	Terminates specific workstation or terminal user session, all user sessions, or a single command for specific task.

- **Restricting New User Sessions (CLOSE Message)**

ØØ△IS△CLOSE	Restricts new workstation and terminal user sessions from starting. Does not affect currently active sessions.

- **Releasing New User Session Restrictions (OPEN Message)**

ØØ△IS△OPEN	Removes previously entered CLOSE or reverses incomplete SHUTDOWN to permit new workstation and terminal user sessions to start.

- **Terminating Interactive Services (SHUTDOWN Message)**

ØØ△IS△SHUTDOWN	Terminates interactive services after all sessions have completed. OPEN message can stop shutdown in progress; otherwise, IS command restarts terminated interactive services.

- **Controlling Interactive Services for Terminals (REMOTE Message)**

ØØ△IS△REMOTE△{START / SHUTDOWN / CANCEL}	Provides additional control over interactive services for terminals. Starts interactive services for terminals after ICAM and GUST are ready, terminates interactive services after last terminal session completes, or terminates interactive services for terminals immediately.