DX10 OPERATING SYSTEM

Error Reporting and Recovery Manual

Part No. 946250-9706 *F
January 1985

Volume VI

TEXAS INSTRUMENTS

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Change 1

Preface

This manual describes DX10 operating system error reports, including those for both hardware-detected and software errors. The tables in this volume arrange error reports numerically and alphabetically by error codes and messages respectively. Error report explanations, as well as tabular and general information, discuss in detail the cause of the error. Each discussion also includes a recommended recovery procedure if one is available. You should refer any error reports not present in this manual, or those not resolved, to your dealer or customer representative.

This manual is one of a set of six volumes that describe the operational characteristics and features of DX10. In addition to the six volumes, several support manuals are available for DX10 functions. Also each language supported by DX10 has its own associated manuals.

Become acquainted with these volumes and related DX10 manuals as necessary to prepare and execute application programs under DX10. The following paragraphs each contain a brief comment regarding the content of each volume. (The full titles and part numbers of all manuals associated with the DX10 operating system are provided in the frontispiece of this manual.) The five associated volumes are as follows:

Concepts and Facilities (Volume I) includes features, concepts, and general background information describing the DX10 operating system. It also contains a master subject index to help you find the information you need.

The *Operations Guide (Volume II)* contains information on how to perform an initial program load (IPL) and how to log on and operate a terminal. Additionally, this manual contains an introduction to your interface with DX10, the System Command Interpreter (SCI), and includes a complete description of the SCI commands required to operate DX10. (The Text Editor and Link Editor commands are not included in Volume II, but can be found in their respective manuals. Debugger commands are in Volume III.)

The *Application Programming Guide (Volume III)* contains information required by the application programmer to prepare, modify and execute application programs on DX10. Much of the material is relevant to both high-level language programmers and assembly language programmers, since it concerns program structure, program operation, file structure, and file I/O. The SCI programming language is included, since it is a major part of constructing applications under DX10. Complete descriptions for nonprivileged SVCs and the DX10 Debugger are included for assembly language programs.

The *Text Editor Manual (Volume IV)* includes operating instructions, examples, and exercises for the interactive Text Editor provided on DX10. The SCI commands and error messages related to the Text Editor are included.

The *Systems Programming Guide (Volume V)* includes information required by the system programmer to maintain and extend a computer system running under DX10. The disk build procedure required for building your initial system disk, and the system generation procedure and troubleshooting guide required for system start-up are located in this manual. The manual also includes support of nonstandard devices and the privileged SVCs available on DX10.

NOTE

Additional, in-depth descriptions related to specific languages including FORTRAN, COBOL, BASIC, RPG II, TI Pascal, assembly language, and Query are found in manuals dedicated to the appropriate programming language. A Link Editor manual is provided as a separate volume that describes the application of the link edit function in a DX10 environment. Separate manuals describe the use of an optional Sort/Merge package and the DBMS package.

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1

Introduction

1.1 GENERAL

Device malfunction, system logic dysfunction (bugs), programmed logic errors, operator procedure errors, and using invalid or illegal parameters can generate errors in an operating system. To cover these sources of error, Texas Instruments incorporates comprehensive error detecting and reporting capabilities both in hardware and software.

Error reports take the form of a two or four-digit hexadecimal error code and/or a worded error message. Most error reports (messages or codes) are displayed on the terminal designated as your interface with the DX10 operating system, or on a hard copy terminal. Some errors are reported in the system log. System crash and system loader error codes are stored in the Light Emitting Diode (LED) display on a programmer panel or Control/Display Module (CDM).

Error reports fall into these classifications:

- System loader errors
- System Command Interpreter (SCI) errors
- Command errors
- Text Editor errors
- Supervisor Call (SVC) errors
- System Crash Errors

In addition to the preceding error reports, user tasks can send messages to the system log by using the System Log SVC (> 21). Add-on packages such as higher level languages can produce such messages.

1.1.1 System Loader Errors

System loader errors occur during a DX10 initial program load (IPL). If, during the load, the DX10 system loader detects an error, it generates an error code that is displayed on the eight rightmost data LEDs (light emitting diodes) of a 990 programmer panel, or on the self-test LEDs seen through the top of the Business System terminal. On the 990 programmer panel, the eight leftmost LEDs flash on and off concurrently, to inform you that the system loader detected an error situation.

1.1.2 SCI Errors

The errors SCI encounters when it attempts to interpret a command procedure are called SCI errors.

1.1.3 Command Errors

When a command processor invoked by SCI encounters an error attempting to perform its function, the error is called a command error.

1.1.4 Text Editing Errors

The Text Editor is a task that runs under SCI. Therefore, errors developed and reported during a text edit session may be SCI or command errors. Error reports during a text edit session have no numbered code, only a worded error message.

1.1.5 SVC Errors

SVC error reporting under DX10 includes task manager, I/O, direct disk I/O, FUTIL (file utility), file manager, program file, key indexed files (KIF), disk manager, and memory manager codes. You can determine and correct some faults by reading the error reports resulting from an SVC, whether that SVC is called directly or indirectly. SVC error reports are designed to help you determine both the currently executing SVC (by code) and the type of error (by code).

1.1.6 System Crash Errors

DX10 is designed to produce meaningful error reports following a system crash. System crashes can result from a hardware error or a bug in the software. You can obtain and analyze any information remaining following a system crash. Under certain conditions, you can force a system crash in order to obtain troubleshooting information.

1.1.7 System Log Error Messages

Error messages from various sources are queued in a section of the system table area where they are processed and then written to the system log. The system log can consist of disk files, a dedicated output device, or both. You must create the system log during system initialization. The system log maintains a record of device and task execution errors and it can also record messages sent from user tasks.

1.1.8 Expanded Error Messages

The Show Error Message (SEM) and the Add Error Message (AEM) SCI procedures are optionally available. Refer to Volume II of the DX10 manuals.

1.2 STRUCTURE OF THE MANUAL

The following paragraphs discuss sections two through eight and the tables contained in each.

1.2.1 Section 2

Section 2 explains the Business System self-tests and DX10 system loader errors. The section explains how to read each set of error indications and gives you a recovery procedure when one is available.

1.2.2 Section 3

All error reports in the SCI, command, Text Editor, and Debugger classifications are combined in Section 3. Error reports from all these classifications are intermixed in one alphabetically arranged table. The beginning of the section explains look-up procedures.

1.2.3 Section 4

Section 4 explains error reports derived from an SVC malfunction. There are two tables in this section:

- Table 4-1 lists the two digit hexadecimal SVC operation codes (opcodes) numerically. The first byte of the call block, usually the leftmost byte of the displayed code, represents an SVC opcode.
- Table 4-2 lists the two digit hexadecimal error codes numerically. The error byte of the call block, usually the rightmost byte of the displayed code, represents the SVC error.

1.2.4 Section 5

Section 5 lists the system crash codes in numerical order. It also describes how to force a system crash.

1.2.5 Section 6

ANALZ, the topic of Section 6, is a utility for analyzing the memory dump caused by a system crash, or the memory of a running system. The SCI command XANAL invokes the utility.

1.2.6 Section 7

Section 7 describes the system log, and the various messages reported there:

- Device Errors
- Task Abnormal Termination Messages
- User Messages
- System Log Processor Messages
- Memory Error Messages
- Memory Cache Error Messages
- Statistics Messages

1.2.7 Section 8

The troubleshooting guide, Section 8, expands on the procedures for recovery from an error. This section explains more commonly encountered errors and shows how to recover from those errors.

1.3 WHERE TO GET ASSISTANCE

If you are unable to find an error report, or the recovery procedure fails to correct the error, call your *dealer* or *customer representative*. The terms dealer and customer representative refer to your source of TI equipment and/or software.

You can use online diagnostics, described in the *DX10 Online Diagnostics and System Log Analysis Tasks User's Guide* to verify the correct operation of system hardware. If you isolate the problem to hardware, call your hardware service representative.

Faulty application program logic and some intermittent hardware failures can cause accidental modification of the system disk. First, attempt to verify the integrity of the disk using the Check Disk for Consistency (CKD) command or other SCI commands useful in troubleshooting. Faulty applications that run as privileged tasks can cause modification to system software. Some powerful program development tools such as Modify Relative to File (MRF), Modify Task Entry (MTE), and so on, if used incorrectly, can also cause damage to system software. You should attempt to restore the system from a standard (unmodified) backup copy of DX10. If the error condition does not recur on an unmodified system, a bug in the application or incorrect or unauthorized use of SCI software development procedures may have caused the problem. If the problem persists, contact your system software support personnel.

Some internal error reports recommend calling your dealer or customer representative. (An internal error refers to faulty system software.) However, to avoid unnecessary delays and minimize downtime, you should attempt to isolate the cause of an error as much as possible before calling for help.

NOTE

Texas Instruments is not responsible for error conditions that adversely affect DX10 operation in systems where users or intermediate vendors have made modifications to TI software.

Table 1-1, which follows, numerically lists many of the error reports you can encounter when you use DX10. The commands that can be responsible for each error, (enclosed in parentheses) follow under each error message. Asterisks (*) indicate those error reports returned by an SVC processor. The text in Table 1-1 should closely approximate the displayed error message. However, to prevent duplication, some of the text is generalized. Use the list as a quick reference guide for locating error reports and the commands responsible for the errors.

Table 1-1. Guide to Commonly Encountered Errors

Error Number	Text	Table Location
0000	BAD DIRECTORY DETECTED, SAME AS FUTIL CRASH >108 (MD)	3-1
0000	CANNOT OBTAIN TCA (MKF, MPF)	3-1
0000	CAN'T GET DIRECTORY NODES OPTION (MD)	3-1
0000	CAN'T GET SHORT FORM OPTION (MD)	3-1
0000	CAN'T GET TCA (MD)	3-1
0000	CAN'T GET TOP LEVEL OPTION (MD)	3-1
0000	CAN'T INITIALIZE OUTPUT FILE (MD, MKF, MDF)	3-1
0000	COBOL I/O STATUS -- SUCCESSFUL COMPLETION	Note 1
0000	ERROR IN PATHNAME FOR LIST OUTPUT (MD, MKF, MDF)	3-1
0000	ERROR IN PATHNAME TO MAP (MD)	3-1
0000	ERROR ON PATHNAME TO MAP (MKF, MPF)	3-1
0000	ERROR: CANNOT FIND LUNO JUST OPENED (SVS)	3-1
0000	ERROR: VOLUME NOT INSTALLED (SVS)	3-1
0000	FILE NOT REQUESTED TYPE (MKF, MPF)	3-1
0000	INPUT FILE DOES NOT EXIST (MD)	3-1

Note:

[1] Refer to the *Model 990 Computer DX10 COBOL Programmer's Guide.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
0001	ASCII CONVERSION ERROR (CKS, CKSR, CSK)	3-1
0001	CANNOT INITIALIZE OUTPUT FILE (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
0001	CANNOT OBTAIN TCA (MKF, MPF)	3-1
0001	CAN'T WRITE A HEADER LINE (MD)	3-1
0001	DATE/TIME FORMATTING ERROR (SDT)	3-1
0001	ERROR FORMATTING OUTPUT (SVS)	3-1
0001	ERROR IN HEX CONVERSION (LLR)	3-1
0001	ERROR IN WRITING TO OUTPUT BUFFER (LLR, MAD, SAD, MADU, SADU)	3-1
0001	ERROR INITIALIZING INPUT (SVS)	3-1
0001	ERROR ON GET PARAMETER (AF, CC)	3-1
0001	ERROR ON GET TCA (AF, CC)	3-1
0001	ERROR OPENING OUTPUT FILE (MRF, SRF)	3-1
0001	ERROR WRITING TO OUTPUT FILE (MRF, SRF)	3-1
0001	ERROR WRITING TO TERMINAL LOCAL FILE (CKS, CKSR, CSK)	3-1
0001	FILE INITIALIZATION FAILED (AT, CKS, CKSR, CSK)	3-1
0001	I/O ERROR (0001 TO 00FF)	3-1
0001	I/O INITIALIZATION ERROR (SDT)	3-1
*0001	ILLEGAL USE OF LUNO	4-2
0001	INVALID INPUT FILE TYPE (CKS, CKSR, CSK)	3-1
0001	INVALID PARAMETER (AT, CKS, CKSR, CSK, LLR, MAD, SAD, MADU, SADU, CPI, MPI, SPI, MRF, SRF)	3-1
0001	INVALID VERB CODE PARAMETER IN PROC. (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF,	

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
	DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
0001	LUNO NOT FOUND (SIS)	3-1
0001	SYSTEM ERROR O$HEX (MRF, SRF)	3-1
0001	SYSTEM ERROR O$INIT CALL (MRF, SRF)	3-1
0001	TASK NOT FOUND (STS)	3-1
0001	UNABLE TO OPEN INTERMEDIATE FILE (LLR)	3-1
0001	UNABLE TO OPEN OUTPUT FILE (LLR)	3-1
0001	VERB PROCESSING INITIALIZATION ERROR (SDT)	3-1
0002	ASCII CONVERSION ERROR (CKS, CKSR, CSK)	3-1
0002	CAN'T WRITE A HEADER LINE (MD)	3-1
0002	DATE/TIME FORMATTING ERROR (SDT)	3-1
0002	ERROR FORMATTING OUTPUT (SVS)	3-1
0002	ERROR IN ASSIGNING OR OPENING PROGRAM FILE (CPI, MPI, SPI)	3-1
0002	ERROR IN HEX CONVERSION (LLR)	3-1
0002	ERROR IN WRITING TO OUTPUT BUFFER (LLR, MAD, SAD, MADU, SADU)	3-1
0002	ERROR ON GET PARAMETER (AF, CC)	3-1
0002	ERROR OPENING OUTPUT FILE (MRF, SRF)	3-1
0002	ERROR OPENING TERMINAL LOCAL FILE (CKS, CKSR, CSK)	3-1
0002	ERROR WRITING TO TERMINAL LOCAL FILE (CKS, CKSR, CSK)	3-1
*0002	ILLEGAL INPUT/OUTPUT CODE	4-2
0002	INVALID PARAMETER (AT, CKS, CKSR, CSK, LLR, MRF, SRF, STS)	3-1
0002	INVALID VERB CODE PARAMETER IN PROC (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
0002	SYSTEM ERROR (SIS)	3-1
0002	UNABLE TO OPEN OUTPUT FILE (LLR)	3-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
0003	ASCII CONVERSION ERROR (CKS, CKSR, CSK)	3-1
0003	ERROR IN HEX CONVERSION (LLR)	3-1
0003	ERROR ON GET PARAMETER (AF, CC)	3-1
0003	ILLEGAL PARAMETER (SIS)	3-1
0003	INVALID PARAMETER (AT, CKS, CKSR, CSK, LLR, MAD, SAD, MADU, SADU, CPI, MPI, SPI, MRF, SRF)	3-1
0003	INVALID VERB CODE PARAMETER IN PROC (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
*0003	LOGICAL UNIT NOT OPENED	4-2
0003	MODULE DOES NOT EXIST (CPI, MPI, SPI)	3-1
0003	NO KSB FOR TERMINAL LOCAL LUNO (SIS)	3-1
0003	SYSTEM ERROR (STS)	3-1
0003	TASK NOT FOUND (SIS)	3-1
0004	ASCII CONVERSION ERROR (CKS, CKSR, CSK)	3-1
0004	ERROR IN FORMATTING DISPLAY (STS)	3-1
0004	ERROR IN HEX CONVERSION (LLR)	3-1
0004	ERROR IN OUTPUT (SIS)	3-1
0004	ERROR ON GET PARAMETER (AF, CC)	3-1
0004	INVALID PARAMETER (AT, CKS, CKSR, CSK, LLR, MAD, SAD, MADU, SADU, CPI, MPI, SPI, MRF, SRF)	3-1
0004	INVALID VERB CODE PARAMETER IN PROC (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
*0004	RECORD LOST (DUE TO POWER FAIL) (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
0004	VERIFICATION ERROR (CPI, MPI, SPI)	3-1
0005	**WARNING** ERROR WHILE MODIFYING PROGRAM (CPI, MPI, SPI)	3-1
0005	ERROR ON GET PARAMETER (AF, CC)	3-1
*0005	ILLEGAL MEMORY ADDER IN I/O CALL BLOCK	4-2
0005	INVALID PARAMETER (AT, CKS, CKSR, CSK, LLR, MAD, SAD, MADU, SADU, CPI, MPI, SPI, MRF, SRF)	3-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
0005	INVALID VERB CODE PARAMETER IN PROC (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
0006	ERROR IN FORMATTING DISPLAY (CPI, MPI, SPI)	3-1
*0006	I/O ABORT OR TIME OUT (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0007	DEVICE ERROR	4-2
0007	ILLEGAL MEMORY ADDRESS (CPI, MPI, SPI)	3-1
0008	ERROR IN I/O TO PROGRAM FILE (CPI, MPI, SPI)	3-1
*0008	ILLEGAL FILE TYPE	4-2
0009	**WARNING** ERROR IN CLOSING PROGRAM FILE (CPI, MPI, SPI)	3-1
*0009	PRIVILEGED I/O ATTEMPTED (DIRECT DISK)	4-2
*000A	DATA CARRIER LOSS ON REMOTE TERMINAL	4-2
*000B	LUNO IN USE BY ANOTHER PROGRAM	4-2
*000C	NO TSB ADDRESS IN LDT	4-2
*000D	SYSTEM TABLE AREA NOT AVAILABLE	4-2
*000E	NO SYSTEM TABLE SPACE FOR I/O REQUEST	4-2
*000F	ANOTHER LUNO CONTROLLING DEVICE	4-2
*0010	COBOL I/O STATUS -- PERMANENT ERROR	Note 1
*0010	DIRECT DISK I/O ABEND	4-2
*0011	ID WORD ERROR (DISK) (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0012	GAP ERROR (DISK) (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0013	DISK CONTROLLER TIME OUT	4-2
*0014	MEMORY PARITY ERROR (DISK)	4-2
*0015	DISK PARITY ERROR (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0016	TIMING ERROR (DISK)	4-2
*0017	SEARCH ERROR (DISK)	4-2
*0018	DISK UNIT OFF LINE	4-2
*0019	DISK UNIT NOT READY (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001A	DISK UNIT WRITE PROTECTED (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001B	UNIT CHECK ERROR (DISK) (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001C	ILLEGAL DISK ADDRESS (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001D	SEEK INCOMPLETE (DISK) (TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001E	DELETED SECTOR DETECTED	

Notes:

* Error returned by SVC processor.

[1] Refer to the *Model 990 Computer DX10 COBOL Programmer's Guide.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*001F	SELF-TEST FAILURE	4-2
*0020	LUNO IN USE	4-2
*0021	BAD DISK NAME (OR NOT INSTALLED)	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0022	LUNO PREVIOUSLY ASSIGNED	4-2
*0022	PATHNAME SYNTAX ERROR	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0023	KEY INDEXED FILE AND SYSTEM SUPPORT DIFFER	4-2
*0025	INSUFFICENT DISK SPACE	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0026	FILE ALREADY EXISTS	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0027	FILE NAME UNDEFINED AS SPECIFIED	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*0028	MEMORY PROTECTION VIOLATION IN SVC BLOCK	4-2
*0029	SYSTEM TABLE SPACE EXHAUSTED	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*002A	SYSTEM CANNOT GET MEMORY	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*002C	UNABLE TO RELEASE SYSTEM LUNO	4-2
*002D	BAD DEVICE NAME	4-2
*002E	ABNORMAL TERMINATION	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
0030	COBOL I/O STATUS -- PERMANENT ERROR	Note 1
*0030	OPERATION EXCEEDS RANGE OF FILE	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
0034	COBOL I/O STATUS -- BOUNDARY VIOLATION	Note 1
*0036	FILE I/O ABEND	4-2
*003A	UNABLE TO ALLOCATE SYSTEM TABLE AREA	4-2
*003B	UNABLE TO GIVE REQUESTED ACCESS PRIVILEGES	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*003E	DISK BLOCK NUMBER OUT OF RANGE	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
003F	FILE DIRECTORY FULL (DISKETTE)	
	(TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX)	3-1, 4-2
*003F	INVALID PARMS IN INTERNAL SYSTEM STRUCTURES	4-2
*0040	MAG TAPE CONTROLLER TIME OUT	4-2
*0041	BEGINNING OF TAPE (MT)	4-2
*0042	END OF TAPE (MT)	4-2
*0043	MAG TAPE UNIT OFFLINE	4-2
*0044	WRITE-RING MISSING (MT)	4-2
*0045	PARITY ERROR (MT)	4-2
*0046	CONTROLLER MEMORY PARITY ERROR (MT)	4-2

Notes:

* Error returned by SVC processor.

[1] Refer to the *Model 990 Computer DX10 COBOL Programmer's Guide.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*0047	CONTROLLER ABEND (MT)	4-2
*0048	TILINE TIME-OUT (MT)	4-2
*0049	MAG TAPE FORMAT ERROR	4-2
*004A	TIMING ERROR (MT)	4-2
*004F	END-OF-TAPE AND UNIDENTIFIED ERROR	4-2
0050	PARITY ERROR	4-2
*0050	BAD OBJECT FORMAT	4-2
0051	FRAMING ERROR	4-2
*0051	ID ALREADY DEFINED	4-2
0052	LOST CHARACTERS	4-2
*0052	NAME ALREADY DEFINED	4-2
*0053	COLON RECORD MISSING	4-2
*0054	NO ID AVAILABLE	4-2
*0055	OBJ LENGTH ZERO	4-2
*0056	NO OBJECT LUNO	4-2
*0057	NO PROGRAM FILE LUNO	4-2
*0058	NAME NOT IN DIRECTORY	4-2
*0059	PFLUNO NOT A PROGRAM FILE	4-2
*005A	OBJ LUNO NOT ASSIGNED TO SEQ FILE	4-2
*005B	LUNO NOT ASSIGNED	4-2
*005C	INVALID OVERLAY LINK	4-2
*005D	ID NOT PROVIDED	4-2
*005E	INVALID TYPE FOR MAP NAME	4-2
*005F	ID NOT DEFINED	4-2
*0060	ODD LENGTH RECORD	4-2
*0061	ZERO INITIAL FILE ALLOCATION	4-2
*0062	PRL SIZE <MINIMUM (SEQUENTIAL)	4-2
*0063	PRL SIZE <LRL SIZE	4-2
*0064	LRL = 0 (KIF)	4-2
*0065	KEY BLOCK LENGTH INCORRECT FOR # OF KEYS	4-2
*0066	NO KEYS SPECIFIED	4-2
*0067	# KEYS > MAX # OF KEYS ALLOWED	4-2
*0068	# RECORDS SPECIFIED = 0	4-2
*0069	PRIMARY KEY CAN'T BE OPTIONAL	4-2
*006A	KEY FIELD > PRL LIMIT	4-2
*006B	PRL SIZE TOO SMALL FOR MIN KEY BLK FACTOR	4-2
*006C	PRL SIZE B-TREE BLKS CAN'T HANDLE # OF RECS	4-2
*006D	PRL SIZE TOO SMALL FOR MIN BLOCKING FOR LRL	4-2
*006E	INTERSECTION OF MODIFIABLE AND NONMODIFIABLE KEYS	4-2
*0070	DIRECTORY NOT EMPTY	4-2
*0071	BAD FILE TYPE	4-2
*0072	BAD FILE USAGE FLAGS	4-2
*0073	FILE ALLOCATION TOO FRAGMENTED	4-2
*0074	BAD PARAMETERS ON CREATE	4-2
*0075	LUNO ASSIGNED TO FILE	4-2
*0076	FILE IS DELETE OR WRITE PROTECTED	4-2
*0077	LUNO NOT ASSIGNED TO FILE	4-2
*0078	LUNO AND PATHNAME DO NOT MATCH	4-2
*0079	FILE NOT AN ALIAS	4-2
*007A	FILE EXISTS-REPLACE NOT SPECIFIED	4-2
*007B	LUNO AND PATHNAME NOT ON SAME DISK	4-2

Notes:

* Error returned by SVC processor.

[4] Refer to the *Model 990 Computer DX10 Remote Terminal Subsystem (RTS) Operator's Guide.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*007C	BAD DATA FORMAT	4-2
*007D	BAD LUNO SCOPE	4-2
*007E	NO STATION FOR STATION LOCAL LUNO	4-2
*007F	OP ILLEGAL ON "VCATALOG"	4-2
*0080	NACK RECEIVED LIMIT EXCEEDED	Note 4
*0081	NACK TRANSMITTED LIMIT EXCEEDED	Note 4
*0082	ANOTHER VOLUME IS INSTALLED	4-2
*0083	FREED AREA NOT IN LIST	4-2
*0084	LIST TABLE OVERFLOW	4-2
*0085	BAD PRIORITY	4-2
*0086	BAD OBJECT LUNO ASSIGNMENT	4-2
*0087	CALLER NOT PRIVILEGED	4-2
*0088	DELETE PROTECTED	4-2
*0089	PRL SIZE TOO LARGE TO BE MAPPED INTO SYSTEM	4-2
*008A	TASK LENGTH TOO LARGE	4-2
*008B	OVERLAY REF'S NONEXISTENT TASK	4-2
*008C	SAME ATTACHED PROCEDURE IDS	4-2
*008D	INSUFFICIENT SPACE ON PROGRAM FILE	4-2
*008E	END ACTION TAKEN	4-2
*008F	REMOTE DEVICE BUFFER OVERFLOW	Note 4
*0090	BAD DIRECTORY HOLE SEARCH	4-2
0090	COBOL I/O STATUS -- INVALID OPERATION	Note 1
0091	COBOL I/O STATUS -- FILE NOT OPENED	Note 1
*0091	DIRECTORY LOOKUP INCONSISTENCY	4-2
*0092	BAD PATHNAME SYNTAX	4-2
0092	COBOL I/O STATUS -- FILE NOT CLOSED	Note 1
0093	COBOL I/O STATUS -- FILE NOT AVAILABLE	Note 1
0094	COBOL I/O STATUS -- INVALID OPEN FUNCTION	Note 1
0095	COBOL I/O STATUS -- INVALID DEVICE	Note 1
0096	COBOL I/O STATUS -- INVALID CURRENT RECORD POINTER	Note 1
0097	COBOL I/O STATUS -- INVALID RECORD LENGTH	Note 1
0099	COBOL I/O STATUS -- LOCKED RECORD	Note 1
*0099	NO LUNOS AVAILABLE (GENLUN)	4-2
*009A	NONLEAF PNC IS NOT A DIRECTORY	4-2
*009B	DEVICE IS OFFLINE	4-2
*009C	DEVICE IS IN THE DIAGNOSTIC STATE	4-2
*009D	DEVICE IS IN AN UNDEFINED STATE	4-2
*009F	REMOTE DEVICE NOT READY	Note 4
*00A1	DIRECTORY FULL	4-2
*00B0	FILE INCONSISTENT (RECONSTRUCT)	4-2
*00B1	FILE'S MAX CAPACITY REACHED	4-2
*00B2	LOGICAL RECORD TOO LARGE	4-2
*00B3	NO MORE RECORDS TO READ	4-2
*00B4	DUPLICATE KEY VALUE FOUND	4-2
*00B5	RECORD NOT IN FILE	4-2
*00B6	INVALID CURRENCY	4-2

Notes:

* Error returned by SVC processor.

[1] Refer to the *Model 990 Computer DX10 COBOL Programmer's Guide.*

[4] Refer to the *Model 990 Computer DX10 Remote Terminal Subsystem (RTS) Operator's Guide.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*00B7	RECORD ALREADY LOCKED	4-2
*00B8	RECORD DOES NOT EXIST	4-2
*00B9	NONMODIFIABLE KEY MODIFIED	4-2
*00BA	RECORD NOT LOCKED	4-2
*00BB	OUT OF LOG BLOCKS	4-2
*00BC	REQUIRED KEY MISSING	4-2
*00BD	CANNOT `GET NEXT' RECORD	4-2
*00BE	CAN'T REWRITE NONEXISTENT RECORD (KIF)	4-2
*00BF	ILLEGAL KEY NUMBER	4-2
*00C0	RECORD TOO SMALL FOR ALL KEYS	4-2
*00C1	NO KEY INDEX FILE SUPPORT	4-2
*00C2	CANNOT OPEN KIF FILE	4-2
*00C3	CANNOT PERFORM I/O ON OPEN TO KIF FILE	4-2
*00C4	PREIMAGES OF RECORDS CANNOT BE APPLIED TO KIF	4-2
*00D0	INVALID OPERATION FOR FILE TYPE	4-2
*00D1	INVALID USE OF REPLACE OPTION	4-2
*00D2	ATTEMPT TO ACCESS LOCKED RECORD	4-2
*00D3	CANNOT GET SYSTEM TABLE AREA FOR REC LOCK	4-2
*00D4	SEQ FILE ZERO LENGTH RECORD (3.0 ONLY)	4-2
*00D5	INCONSISTENCY IN FILE STRUCTURE	4-2
*00D6	CANNOT GET SYSTEM TABLE AREA TO EXTEND	4-2
*00D7	ODD BUF ADDR, REC LEN, OR CHAR CNT	4-2
*00D8	ACCESS PRIVILEGE VIOLATION	4-2
*00D9	REWRITE AT BEGINNING OF FILE	4-2
*00DA	SECONDARY ALLOCATION TABLE FULL	4-2
*00DB	DEFERRED WRITE ERROR	4-2
*00DC	REWRITE RECORD WILL NOT FIT	4-2
*00DD	FILE WRITE PROTECTED	4-2
*00DE	KIF SYSTEM ERROR	4-2
*00DF	PRL TOO LARGE	4-2
*00E0	DISK VOLUME FULL	4-2
*00E1	ADU OUT OF RANGE (DISK)	4-2
*00E2	ILLEGAL INPUT PARAMETER (UCB)	4-2
*00E3	VOLUME NOT INSTALLED	4-2
*00E4	ADU ALREADY DEALLOCATED	4-2
*00FB	BAD MEMORY REQUEST	See error code 12FB OR 13FB
*00XX	VARIOUS ERROR MESSAGES (ISO, DD, MD, AF, CC, SVS, BD, CD, RD, VB, VC, TXDX, TXCP, TXMD, TXSF, TXCM, TXDF, TXFD, IBMUTL, DXTX, MTE, MPE, MOE, DCOPY, CVD)	3-1
00NN	INVALID PARAMETER #	3-1
01XX	OPEN ERROR 00XX (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
0100	CANNOT OBTAIN STATION INFORMATION...(AA, AGL, AL, BL, CFDIR, (CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
0101	UNEXPECTED ERROR OR ERROR IN ERROR PROCESSING (AA, AGL, AL, BL, CFDIR, CFIMG, CFKEY, CFPRD, CFREL, CFSEQ, CSF, DA, DF, DO, DP, DT, ENDKEY, FL, INV, IO, IP, IT, IV, KEY, MFN, MFP, RGL, RL, RWL, UV, XT, XTS)	3-1
*0102	ERROR 0002 FOR I/O OPCODE 01	4-2
0108	INTERNAL ERROR (MKF, MPF)	3-1
*0121	ERROR 0021 FOR I/O OPCODE 01	4-2
*0172	ERROR 0072 FOR I/O OPCODE 01	4-2
02XX	OPEN INPUT ERROR 00XX	3-1
0202	PARAMETER OUT OF RANGE (IDT)	3-1
03XX	OPEN OUTPUT ERROR 00XX	3-1
0303	PARAMETER OUT OF RANGE (IDT)	3-1
030E	INTERNAL ERROR (DEVICE OUTPUT TERMINATED)	3-1
*03FF	DATE/TIME UPDATE IN PROGRESS (IDT)	3-1, 4-2
04XX	CLOSE ERROR 00XX	3-1
0404	PARAMETER OUT OF RANGE (IDT)	3-1
05XX	CLOSE INPUT ERROR 00XX	3-1
*0500	TASK, ACTIVE AT PRIORITY 0	4-2
*0501	TASK, ACTIVE AT PRIORITY 1	4-2
*0502	TASK, ACTIVE AT PRIORITY 2	4-2
*0503	TASK, ACTIVE AT PRIORITY 3	4-2
*0504	BID SVC COMPLETE AND O.K.	4-2
*0505	PARAMETER OUT OF RANGE (IDT)	3-1
*0505	TASK IN TIME DELAY	4-2
*0506	TASK IN SUSPENDED STATE	4-2
*0507	TASK CURRENTLY EXECUTING	4-2
*0508	TASK AWAITING CHARACTER INPUT	4-2
*0509	TASK AWAITING COMPLETION OF I/O	4-2
*050A	TASK AWAITING DEVICE FOR I/O	4-2
*050B	TASK AWAITING FILE UTILITY	4-2
*050C	TASK AWAITING COMPRESS	4-2
*050D	TASK AWAITING FILE MANAGEMENT	4-2
*050E	TASK AWAITING OVERLAY LOADER	4-2
*050F	TASK AWAITING INITIAL LOAD	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*0511	TASK AWAITING DISK MANAGEMENT	4-2
*0512	TASK AWAITING TAPE MANAGEMENT	4-2
*0513	TASK AWAITING SYSTEM OVERLAY LOADER	4-2
*0514	TASK AWAITING TASK DRIVEN SVC PROCESSOR	4-2
*0515	TASK AWAITING GET MEMORY	4-2
*0517	TASK SUSPENDED FOR ACTIVATION OF CALLED TASK	4-2
*0518	TASK AWAITING DIAGNOSTIC TASK	4-2
*0519	TASK AWAITING COMPLETION OF ANY I/O	4-2
*051A	TASK AWAITING MEMORY MANAGEMENT	4-2
*051B	TASK MAY BE ROLLED WHEN I/O COMPLETES	4-2
*0524	TASK AWAITING QUEUE INPUT	4-2
*05F0	TM$BID END ACTION TAKEN	4-2
*05FA	CAN'T REPLICATE TASK	4-2
*05FB	TASK ABORTED	4-2
*05FC	PROCEDURE DIRECTORY ENTRY ERROR	4-2
*05FD	TASK DIRECTORY ENTRY ERROR	4-2
*05FE	LUNO NOT ASSIGNED TO A PROGRAM FILE	4-2
*05FF	ILLEGAL TASK ID	4-2
06XX	CLOSE OUTPUT ERROR 00XX	3-1
0606	PARAMETER OUT OF RANGE (IDT)	3-1
07XX	READ ERROR 00XX	3-1
07XX	SVC ERROR (07XX ERRORS IN TABLE 4-2)(AT)	3-1
*0700	TASK, ACTIVATE AT PRIORITY 0	4-2
*0701	TASK, ACTIVATE AT PRIORITY 1	4-2
*0702	TASK, ACTIVATE AT PRIORITY 2	4-2
*0703	TASK, ACTIVATE AT PRIORITY 3	4-2
*0704	TASK TERMINATED	4-2
*0705	TASK IN TIME DELAY	4-2
*0706	ACTIVATE COMPLETE AND O.K	4-2
*0706	OPERATION ABORTED OR TIMED OUT (0006)	4-2
*0707	TASK CURRENTLY EXECUTING	4-2
*0708	TASK AWAITING CHARACTER INPUT	4-2
*0709	TASK AWAITING COMPLETION OF I/O	4-2
*070A	TASK AWAITING DEVICE FOR I/O	4-2
*070B	TASK AWAITING FILE UTILITY	4-2
*070C	TASK AWAITING COMPRESS	4-2
*070D	TASK AWAITING FILE MANAGEMENT	4-2
*070E	NO SYSTEM TABLE SPACE	4-2
*070E	TASK AWAITING OVERLAY LOADER	4-2
*070F	TASK AWAITING INITIAL LOAD	4-2
*0711	TASK AWAITING DISK MANAGEMENT	4-2
*0712	TASK AWAITING TAPE MANAGEMENT	4-2
*0713	TASK AWAITING SYSTEM OVERLAY LOADER	4-2
*0714	TASK AWAITING TASK DRIVEN SVC PROCESSOR	4-2
*0715	TASK AWAITING GET MEMORY	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*0717	TASK SUSPENDED FOR ACTIVATION OF CALLED TASK	4-2
*0718	TASK AWAITING DIAGNOSTIC TASK	4-2
*0719	TASK AWAITING COMPLETION OF ANY I/O	4-2
*071A	TASK AWAITING MEMORY MANAGEMENT	4-2
*071B	TASK MAY BE ROLLED WHEN I/O COMPLETES	4-2
*0724	TASK AWAITING QUEUE INPUT	4-2
*07FF	ILLEGAL TASK ID	4-2
08XX	WRITE ERROR 00XX	3-1
*080E	NO SYSTEM TABLE SPACE	4-2
*0913	ERROR 0013 FOR I/O OPCODE 09	4-2
*0A15	ERROR 0015 FOR I/O OPCODE 0A	4-2
*0BDD	ERROR 00DD FOR I/O OPCODE 0B	4-2
*0BFF	ILLEGAL DECIMAL ASCII	4-2
*0DFF	ILLEGAL HEXADECIMAL ASCII	4-2
0EXX	LOAD OVERLAY ERROR 14XX	3-1
*0E00	TASK, ACTIVE AT PRIORITY 0	4-2
*0E01	TASK, ACTIVE AT PRIORITY 1	4-2
*0E02	TASK, ACTIVE AT PRIORITY 2	4-2
*0E03	TASK, ACTIVE AT PRIORITY 3	4-2
*0E04	TASK TERMINATED	4-2
*0E05	ACTIVATE COMPLETE AND O.K	4-2
*0E06	TASK SUSPENDED	4-2
*0E07	TASK CURRENTLY EXECUTING	4-2
*0E08	TASK AWAITING CHARACTER INPUT	4-2
*0E09	TASK AWAITING COMPLETION OF I/O	4-2
*0E0A	TASK AWAITING DEVICE FOR I/O	4-2
*0E0B	TASK AWAITING FILE UTILITY	4-2
*0E0C	TASK AWAITING COMPRESS	4-2
*0E0D	TASK AWAITING FILE MANAGEMENT	4-2
*0E0E	TASK AWAITING OVERLAY LOADER	4-2
*0E0F	TASK AWAITING INITIAL LOAD	4-2
*0E11	TASK AWAITING DISK MANAGEMENT	4-2
*0E12	TASK AWAITING TAPE MANAGEMENT	4-2
*0E13	TASK AWAITING SYSTEM OVERLAY LOADER	4-2
*0E14	TASK AWAITING TASK DRIVEN SVC PROCESSOR	4-2
*0E15	TASK AWAITING GET MEMORY	4-2
*0E17	TASK SUSPENDED FOR ACTIVATION OF CALLED TASK	4-2
*0E18	TASK AWAITING DIAGNOSTIC TASK	4-2
*0E19	TASK AWAITING COMPLETION OF ANY I/O	4-2
*0E1A	TASK AWAITING MEMORY MANAGEMENT	4-2
*0E1B	TASK MAY BE ROLLED WHEN I/O COMPLETES	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*0E24	TASK AWAITING QUEUE INPUT	4-2
0EFF	ILLEGAL TASK ID	4-2
0FXX	BID TASK ERROR 2BXX	3-1
*10FF	ILLEGAL GET COMMON	4-2
*1180	ILLEGAL PRIORITY SPECIFIED	4-2
*12FB	MEMORY REQUEST TOO LARGE FOR USER AREA	4-2
*12FC	MEMORY REQUEST EXCEEDS 32K ADDRESS SPACE	4-2
*12FD	COMMON MAPPED INTO ADDRESS SPACE	4-2
*12FE	TILINE I/O IN PROGRESS	4-2
*12FF	TASK IS MEMORY RESIDENT	4-2
*13F9	RELEASE MEMORY ERROR	4-2
*13FB	MEMORY MANAGEMENT ERROR	4-2
*13FC	ILLEGAL RETURN ADDRESS SPECIFIED	4-2
*13FD	COMMON MAPPED INTO ADDRESS SPACE	4-2
*13FE	TILINE I/O IN PROGRESS	4-2
*13FF	TASK IS MEMORY RESIDENT	4-2
*1405	ILLEGAL LOAD ADDRESS SPECIFIED	4-2
*141C	ILLEGAL PROGRAM FILE LUNO	4-2
*14FF	ILLEGAL OVERLAY NUMBER	4-2
*1501	ILLEGAL USE OF LUNO	4-2
*1520	LUNO IS IN USE	4-2
*1521	BAD DISK NAME (OR NOT INSTALLED)	4-2
*1522	LUNO PREVIOUSLY ASSIGNED	4-2
*1525	INSUFFICIENT DISK SPACE	4-2
*1526	FILE ALREADY EXISTS	4-2
*1527	NO FILE DEFINED BY NAME SPECIFIED	4-2
*1529	NO SYSTEM TABLE SPACE AVAILABLE	4-2
*152C	UNABLE TO RELEASE SYSTEM LUNO	4-2
*152D	BAD DEVICE NAME	4-2
*1560	ODD LENGTH RECORD	4-2
*1561	ZERO INITIAL FILE ALLOCATION	4-2
*1562	PRL LESS THAN MINIMUM (SEQUENTIAL)	4-2
*1563	PRL LESS THAN LOGICAL RECORD LENGTH	4-2
*1564	LOGICAL RECORD LENGTH = 0 (KIF)	4-2
*1565	KEY BLOCK LENGTH INCORRECT FOR # OF KEYS	4-2
*1566	NO KEYS SPECIFIED	4-2
*1567	# KEYS > MAX # KEYS	4-2
*1568	# RECORDS = 0	4-2
*1569	PRIMARY KEY CANNOT BE OPTIONAL	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*156A	KEY FIELD EXTENDS BEYOND PRL	4-2
*156B	PRL TOO SMALL FOR MIN KEY BLK FACTOR	4-2
*156C	PRL OF B-TREE BLKS CAN'T HANDLE # OF RECS	4-2
*156D	PRL SIZE TOO SMALL FOR MIN BLOCKING FOR LRL	4-2
*156E	INTERSECTION OF MODIFIABLE AND NONMODIFIABLE KEYS	4-2
*1570	DIRECTORY NOT EMPTY	4-2
*1571	BAD FILE TYPE	4-2
*1572	BAD FILE USAGE FLAGS	4-2
*1573	FILE ALLOCATION TOO FRAGMENTED	4-2
*1574	BAD PARAMETERS ON CREATE	4-2
*1575	LUNO ASSIGNED TO FILE	4-2
*1576	FILE DELETE PROTECTED	4-2
*1577	LUNO NOT ASSIGNED TO FILE	4-2
*1578	LUNO AND PATHNAME DO NOT MATCH	4-2
*1579	FILE NOT AN ALIAS	4-2
*157A	FILE EXISTS/REPLACE NOT SPECIFIED	4-2
*157B	LUNO AND PATHNAME NOT ON SAME DISK	4-2
*157C	BAD DATA FORMAT	4-2
*157D	BAD LUNO SCOPE	4-2
*157F	OP ILLEGAL ON "VCATALOG"	4-2
*1590	BAD DIRECTORY HOLE SEARCH	4-2
*1591	DIRECTORY LOOKUP INCONSISTENCY	4-2
*1592	BAD PATHNAME SYNTAX	4-2
*1599	NO LUNOS AVAILABLE (GENLUN)	4-2
*159A	NONLEAF PNC NOT A DIRECTORY	4-2
*15A1	DIRECTORY FULL	4-2
*1CFF	SYSTEM TABLE AREA EXHAUSTED	4-2
*1DFF	MESSAGE NOT ON QUEUE	4-2
*1E01	LUNO NOT ASSIGNED	4-2
*1E02	ABORT I/O NOT SUPPORTED FOR THIS DEVICE	4-2
*1F01	ILLEGAL TIME SPECIFIED	4-2
*1FFF	ILLEGAL TASK SPECIFIED	4-2
*2013	DISK CONTROLLER TIME OUT	4-2
*2018	DISK UNIT OFFLINE	4-2
*2019	DISK UNIT NOT READY	4-2
*201C	ILLEGAL DISK ADDRESS	4-2
*2044	WRITE RING NOT INSTALLED	4-2
*2061	BAD DISK NAME	4-2
*2062	ILLEGAL CHARACTER IN DISK NAME	4-2
*2063	BAD VOLUME NAME	4-2
*2064	ILLEGAL CHARACTER IN VOLUME NAME	4-2
*2065	DEVICE IS NOT A DISK	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*2066	VOLUME NAMES DO NOT MATCH	4-2
*2067	NO SYSTEM TABLE SPACE AVAILABLE	4-2
*2068	COULD NOT FIND VCATALOG	4-2
*2069	DISK PREVIOUSLY INSTALLED	4-2
*2082	ANOTHER VOLUME IS INSTALLED	4-2
*2083	SAME VOLUME NAME	4-2
*2102	SYSTEM AREA EXHAUSTED	4-2
*2104	MESSAGE LOST	4-2
*2105	ILLEGAL MEMORY ADDRESS	4-2
*21FF	NO SYSTEM LOG SUPPORT	4-2
*22E0	CAN'T ALLOCATE DISK SPACE	4-2
*22E1	ADU OUT OF RANGE (DISK)	4-2
*22E2	ILLEGAL INPUT PARAMETER IN UCB	4-2
*22E3	VOLUME NOT INSTALLED (DISK)	4-2
*22E4	ADU ALREADY DEALLOCATED	4-2
*22E5	NONPRIVILEGED DISK MANAGEMENT	4-2
*2501	ILLEGAL USE OF LUNO	4-2
*2527	FILE NAME UNDEFINED AS SPECIFIED	4-2
*2530	OPERATION EXCEEDS RANGE OF FILE	4-2
*2550	BAD OBJECT FORMAT	4-2
*2551	ID ALREADY DEFINED	4-2
*2552	NAME ALREADY DEFINED	4-2
*2553	COLON RECORD MISSING	4-2
*2554	NO ID AVAILABLE	4-2
*2555	OBJ LENGTH ZERO	4-2
*2556	NO OBJECT LUNO	4-2
*2557	NO PROGRAM FILE LUNO	4-2
*2558	NAME NOT IN DIRECTORY	4-2
*2559	PFLUNO NOT A PROGRAM FILE	4-2
*255A	OBJ LUNO NOT ASSIGNED TO SEQ FILE	4-2
*255B	LUNO NOT ASSIGNED	4-2
*255C	INVALID OVERLAY LINK	4-2
*2560	PROCEDURE 1 REQUIRED (SYS TASK)	4-2
*2561	ID OUT OF RANGE	4-2
*2585	BAD PRIORITY	4-2
*2586	BAD OBJECT LUNO ASSIGNMENT	4-2
*2587	CALLER NOT PRIVILEGED	4-2
*258A	TASK LENGTH TOO LARGE	4-2
*258B	OVERLAY REF'S NONEXISTENT TASK	4-2
*258C	SAME ATTACHED PROCEDURE IDS	4-2
*258D	INSUFFICIENT SPACE ON PROGRAM FILE	4-2
*258E	END ACTION TAKEN	4-2
*2601	ILLEGAL USE OF LUNO	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*2650	BAD OBJECT FORMAT	4-2
*2651	ID ALREADY DEFINED	4-2
*2652	NAME ALREADY DEFINED	4-2
*2653	COLON RECORD MISSING	4-2
*2654	NO ID AVAILABLE	4-2
*2655	OBJ LENGTH ZERO	4-2
*2656	NO OBJECT LUNO	4-2
*2657	NO PROGRAM FILE LUNO	4-2
*2658	NAME NOT IN DIRECTORY	4-2
*2659	PFLUNO NOT A PROGRAM FILE	4-2
*265A	OBJ LUNO NOT ASSIGNED TO SEQ FILE	4-2
*265B	LUNO NOT ASSIGNED	4-2
*2660	PROCEDURE 1 REQUIRED (SYS TASK)	4-2
*2661	ID OUT OF RANGE	4-2
*2685	BAD PRIORITY	4-2
*2686	BAD OBJECT LUNO ASSIGNMENT	4-2
*2687	CALLER NOT PRIVILEGED	4-2
*268A	TASK LENGTH TOO LARGE	4-2
*268B	OVERLAY REF'S NONEXISTENT TASK	4-2
*268C	SAME ATTACHED PROCEDURE IDS	4-2
*268D	INSUFFICIENT SPACE ON PROGRAM FILE	4-2
*268E	END ACTION TAKEN	4-2
*2701	ILLEGAL USE OF LUNO	4-2
*2750	BAD OBJECT FORMAT	4-2
*2751	ID ALREADY DEFINED	4-2
*2752	NAME ALREADY DEFINED	4-2
*2753	COLON RECORD MISSING	4-2
*2754	NO ID AVAILABLE	4-2
*2755	OBJ LENGTH ZERO	4-2
*2756	NO OBJECT LUNO	4-2
*2757	NO PROGRAM FILE LUNO	4-2
*2758	NAME NOT IN DIRECTORY	4-2
*2759	PFLUNO NOT A PROGRAM FILE	4-2
*275A	OBJ LUNO NOT ASSIGNED TO SEQ FILE	4-2
*275B	LUNO NOT ASSIGNED	4-2
*275C	INVALID OVERLAY LINK	4-2
*2760	PROCEDURE 1 REQUIRED (SYS TASK)	4-2
*2761	ID OUT OF RANGE	4-2
*2785	BAD PRIORITY	4-2
*2786	BAD OBJECT LUNO ASSIGNMENT	4-2
*2787	CALLER NOT PRIVILEGED	4-2
*278A	TASK LENGTH TOO LARGE	4-2
*278B	OVERLAY REF'S NONEXISTENT TASK	4-2
*278C	SAME ATTACHED PROCEDURE IDS	4-2
*278D	INSUFFICIENT SPACE ON PROGRAM FILE	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*278E	END ACTION TAKEN	4-2
*2858	NAME NOT IN DIRECTORY	4-2
*2859	PFLUNO NOT A PROGRAM FILE	4-2
*285B	LUNO NOT ASSIGNED	4-2
*285C	INVALID OVERLAY LINK	4-2
*285D	ID NOT PROVIDED	4-2
*285F	ID NOT DEFINED	4-2
*2861	ID OUT OF RANGE	4-2
*2883	FREED AREA NOT IN LIST	4-2
*2884	LIST TABLE OVERFLOW	4-2
*2887	CALLER NOT PRIVILEGED	4-2
*2888	DELETE PROTECTED	4-2
*288E	END ACTION TAKEN	4-2
*2958	NAME NOT IN DIRECTORY	4-2
*2959	PFLUNO NOT A PROGRAM FILE	4-2
*295B	LUNO NOT ASSIGNED	4-2
*295D	ID NOT PROVIDED	4-2
*295F	ID NOT DEFINED	4-2
*2961	ID OUT OF RANGE	4-2
*2983	FREED AREA NOT IN LIST	4-2
*2984	LIST TABLE OVERFLOW	4-2
*2987	CALLER NOT PRIVILEGED	4-2
*2988	DELETE PROTECTED	4-2
*298E	END ACTION TAKEN	4-2
*2A58	NAME NOT IN DIRECTORY	4-2
*2A59	PFLUNO NOT A PROGRAM FILE	4-2
*2A5B	LUNO NOT ASSIGNED	4-2
*2A5C	INVALID OVERLAY LINK	4-2
*2A5D	ID NOT PROVIDED	4-2
*2A5F	ID NOT DEFINED	4-2
*2A61	ID OUT OF RANGE	4-2
*2A83	FREED AREA NOT IN LIST	4-2
*2A84	LIST TABLE OVERFLOW	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*2A87	CALLER NOT PRIVILEGED	4-2
*2A88	DELETE PROTECTED	4-2
*2A8E	END ACTION TAKEN	4-2
*2B01	ILLEGAL STATION NUMBER	4-2
*2B02	NO RUN-TIME ID'S	4-2
*2B03	SYSTEM TABLE AREA EXHAUSTED	4-2
*2B04	ILLEGAL PROGRAM FILE LUNO	4-2
*2BF0	TM$BID END ACTION TAKEN	4-2
*2BFA	CANNOT REPLICATE	4-2
*2BFB	TASK ABORTED	4-2
*2BFC	PROCEDURE DIRECTORY ENTRY ERROR	4-2
*2BFD	TASK DIRECTORY ENTRY ERROR	4-2
*2BFE	LUNO NOT ASSIGNED TO PROGRAM FILE	4-2
*2BFF	ILLEGAL TASK ID	4-2
*2C01	ADDRESS OUT OF RANGE	4-2
*2C04	RUN ID DOES NOT EXIST	4-2
*2C06	PRIVILEGED SVC	4-2
*2D03	TARGET TASK IN WRONG STATE	4-2
*2D04	RUN ID DOES NOT EXIST	4-2
*2D05	ILLEGAL MEMORY ADDRESS	4-2
*2D06	PRIVILEGED SVC	4-2
*3001	NO EVENT CHARACTERS PENDING	4-2
*3002	STATION NOT AVAILABLE	4-2
*3003	ILLEGAL STATION #/LUNO NOT ASSIGNED	4-2
*3127	FILE NAME UNDEFINED AS SPECIFIED	4-2
*3151	ID ALREADY DEFINED	4-2
*3158	NAME NOT IN DIRECTORY	4-2
*3159	PFLUNO NOT A PROGRAM FILE	4-2
*315D	ID NOT PROVIDED	4-2
*315E	INVALID TYPE FOR MAP NAME	4-2
*315F	ID NOT DEFINED	4-2
*3161	ID OUT OF RANGE	4-2
*318E	END ACTION TAKEN	4-2
*3301	TASK DOES NOT EXIST	4-2
*3461	BAD DISK NAME	4-2
*3462	ILLEGAL CHARACTER IN DISK NAME	4-2
*3463	BAD VOLUME NAME	4-2

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*3464	ILLEGAL CHARACTER IN VOLUME NAME	4-2
*346E	CAN'T UNLOAD SYSTEM DISK	4-2
*346F	LUNOS ASSIGNED TO FILE	4-2
*35FF	SPECIFIED TASK NOT FOUND	4-2
*3757	NO PROGRAM FILE LUNO	4-2
*3759	PFLUNO NOT A PROGRAM FILE	4-2
*375B	LUNO NOT ASSIGNED	4-2
*3787	CALLER NOT PRIVILEGED	4-2
*378E	END ACTION TAKEN	4-2
*3818	DISK OFFLINE	4-2
*3819	DISK NOT READY	4-2
*381A	DISK WRITE PROTECTED	4-2
*3863	BAD VOLUME NAME	4-2
*3869	DISK PREVIOUSLY INSTALLED	4-2
*386A	BAD ADU LIST FULL	4-2
*386B	NOT ENOUGH CONTINUOUS ADUS	4-2
*386C	TASK MEMORY ALLOCATION ERROR	4-2
*386D	TRACK 0 OR 1 BAD	4-2
*3870	TRACK 1 LOADER TOO LARGE	4-2
*3881	INVALID HEAD/CYLINDER INPUT	4-2
*3882	ANOTHER VOLUME INSTALLED	4-2
*3901	NO EVENT CHARACTERS PENDING	4-2
*3902	STATION NOT AVAILABLE	4-2
*3903	ILLEGAL STATION #/LUNO NOT ASSIGNED	4-2
3BFF	SVC TO STORE DATE/TIME ENCOUNTERED ERROR (IDT)	3-1
*3BFF	PRIVILEGED SVC	4-2
4000	TASK ABORTED (ANS, CALL, DISC, LHPC, MHPC)	3-1
4000	UNEXPECTED INTERNAL ERROR (ANS, CALL ,DISC, LHPC, MHPC)	3-1
4101	CONNECTION UNSUCCESSFUL -- NO ANSWERBACK (ANS, CALL)	3-1
4102	CONNECTION UNSUCCESSFUL -- ANSWERBACK (ANS, CALL)	3-1
4103	INVALID TELEPHONE NUMBER (CALL)	3-1
4104	INVALID TERMINAL TYPE (ANS, CALL, DISC, LHPC, MHPC)	3-1
4105	NO ANSWER -- ABANDON CALL TIMEOUT (CALL)	3-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
4106	NO ANSWER -- CONNECT NOT DETECTED (CALL)	3-1
4107	CIRCUIT NOT ENABLED (ANS, CALL)	3-1
4108	CONNECTION UNSUCCESSFUL TIMEOUT (ANS)	3-1
4109	NO DISCONNECT -- ASSOCIATED TASKS ACTIVE (DISC)	3-1
410A	NO DISCONNECT -- OTHER TASKS USING THE TERMINAL (DISC)	3-1
410B	NO ASSOCIATED ACU (CALL)	3-1
410C	ACU FAILURE -- POWER OFF (CALL)	3-1
410D	ACU FAILURE -- DATA LINE OCCUPIED (CALL)	3-1
410E	ACU FAILURE -- DISTANT STATION BUSY (CALL)	3-1
410F	ACU FAILURE -- ABANDON CALL (CALL)	3-1
4110	ACU FAILURE -- PRESENT NEXT DIGIT (CALL)	3-1
4111	CIRCUIT ALREADY IN USE (CALL)	3-1
4112	NOT A SWITCHED CIRCUIT (ANS, CALL)	3-1
4113	ERROR IN PARAMETER NN (MHPC)	3-1
4114	NO MODIFICATION -- OTHER TASKS USING TERMINAL (MHPC)	3-1
*4515	ERROR 0015 FOR I/O OPCODE 45	4-2
51B4	ERROR 00B4 FOR I/O OPCODE 51	4-2
80XX	LINK EDITOR ERROR 00XX (TABLE 4-2)	Note 2
8100	FILE ALREADY OPEN (INTERNAL LINK EDITOR ERROR)	Note 2
8102	FILE NOT OPEN (INTERNAL LINK EDITOR ERROR)	Note 2
8190	FILE IS NOT RELATIVE RECORD (TXXLE)	Note 2
8191	REL REC FILE RECORD LENGTH IS NOT 256 (TXXLE)	Note 2
8193	TOO MANY OVERLAYS; MORE THAN 255 (TXXLE)	Note 2
81FF	ATTEMPTED TO DUMMY TASK UNDER FORMAT IMAGE	Note 2
9000	INVALID SYNTAX	3-1
9001	INVALID ACCESS NAME SYNTAX	3-1
9002	INVALID INTEGER EXPRESSION	3-1
9003	INVALID KEYWORD SYNTAX	3-1
9004	INVALID NAME SYNTAX	3-1
9005	INVALID COMMAND NAME SYNTAX	3-1

Notes:

* Error returned by SVC processor.

[2] Refer to the *Link Editor Reference Manual.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
9006	INVALID RELATION NAME	3-1
9007	INVALID TYPE SPECIFICATION	3-1
9008	INVALID SYNONYM NAME SYNTAX	3-1
9009	MISSING COMMA	3-1
900A	SPURIOUS CHARACTERS ON END OF COMMAND	3-1
900B	MISSING "=" CHARACTER	3-1
900C	UNEXPECTED END-OF-LINE	3-1
900D	MISSING PARENTHESIS	3-1
900E	UNKNOWN COMMAND NAME	3-1
900F	UNKNOWN KEYWORD	3-1
9010	UNKNOWN FILE OR DEVICE	3-1
9011	REQUIRED ARGUMENT IS NOT PRESENT	3-1
9012	PRIVILEGED COMMAND	3-1
9013	"YES" OR "NO" IS REQUIRED	3-1
9014	INVALID LEFT OP OF .IF, .UNTIL, .WHILE	3-1
9015	INVALID RIGHT OP OF .IF, .UNTIL, .WHILE	3-1
9016	INVALID SYNTAX FOR A LIST	3-1
9017	COMMAND OUT OF PLACE	3-1
9018	UNEXPECTED END-OF-FILE	3-1
9019	INVALID KEYWORD VALUE	3-1
901A	INVALID STRING VALUE	3-1
901B	OUTPUT TEXT BUFFER IS TOO SMALL	3-1
901C	USER PROC LIBRARY REQUIRED	3-1
901D	BG TASK ALREADY PENDING	3-1
901E	CAN'T QUIT WITH BG TASK PENDING	3-1
901F	INVALID USER ID	3-1
9020	DUPLICATE USER ID (NUMBER)	3-1
9021	USER ID IS IN USE	3-1
9022	INVALID USE OF DEVICE NAME	3-1
9023	COMMAND IS INVALID IN BATCH MODE	3-1
9024	A DEVICE NAME IS REQUIRED	3-1
9025	INVALID PASSCODE	3-1
9026	INVALID FILE TYPE	3-1
9027	INVALID NESTING OF ".IF/.LOOP"	3-1
9028	WARNING -- DEFAULT MENU NOT FOUND	3-1
9029	COMMAND NOT ALLOWED FROM PRIMARY INPUT	3-1
92E0	DESTINATION FILE NAME MUST HAVE EXACTLY TWO COMPONENTS	3-1
92E1	*** ERROR 92E1 ***(BDD)	3-1
92E2	*** ERROR 92E2 ***(BDD)	3-1
9320	*** ERROR 9320 ***(BDD,CV)	3-1
9321	*** ERROR 9321 ***(BDD,CV)	3-1
9322	*** ERROR 9322 ***(CV)	3-1
9323	*** ERROR 9323 ***(CV)	3-1
9324	*** ERROR 9324 ***(CV)	3-1
9325	*** ERROR 9325 ***(BDD,CV)	3-1
9326	*** ERROR 9326 ***(CV)	3-1
9327	*** ERROR 9327 ***(BDD,CV)	3-1
9328	*** ERROR 9328 ***(CV)	3-1
9329	*** ERROR 9329 ***(BDD,CV)	3-1
932A	*** ERROR 932A ***(BDD,CV)	3-1
932B	*** ERROR 932B ***(CV)	3-1
932C	*** ERROR 932C ***(CV)	3-1
932D	*** ERROR 932D ***(CV)	3-1

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
ADXX	2.2 CONVERSION UTILITY ERROR 00XX	4-2, Note 3
D001	VALUE EXCEEDS 16 BITS	3-1
D002	VALUE EXCEEDS 8 BITS	3-1
D003	INVALID TASK STATE FOR HALT	3-1
D004	UNABLE TO SUSPEND TASK	3-1
D005	USER NOT SYSTEM USER	3-1
D006	INVALID RUN ID	3-1
D007	NULL PARAMETER	3-1
D008	NO SUCH ENTRY IN BREAKPOINT TABLE	3-1
D009	DUPLICATE BREAKPOINT ADDRESS	3-1
D00A	TASK NOT SUSPENDED	3-1
D00B	STATE=TERMINATED, MEMORY RESIDENT	3-1
D00C	BREAKPOINT TABLE FULL	3-1
D00D	COMMAND INVALID IN BATCH	3-1
D00E	EXCEEDED MEMORY LIMITS	3-1
D00F	TASK NOT AT BREAKPOINT	3-1
D010	NO TASK IN DEBUG	3-1
D011	TASK ALREADY IN DEBUG	3-1
D012	TASK NOT IN TERMINAL SET	3-1
D013	INVALID BREAKPOINT TYPE	3-1
D014	EXPRESSION STACK OVERFLOW	3-1
D015	INVALID OBJECT TAG	3-1
D016	INVALID SYMBOLIC NAME	3-1
D017	OUTPUT TEXT BUFFER OVERFLOW	3-1
D018	SYMBOL TABLE OVERFLOW	3-1
D019	UNBALANCED PARENTHESIS	3-1
D01A	INVALID REGISTER NUMBER	3-1
D01B	NUMBER OF VALUES EXCEEDS 16 WORDS	3-1
D01C	MISSING QUOTE CHARACTER	3-1
D01D	TASK TERMINATED -- DEBUG TERMINATED	3-1
D01E	TASK TERMINATED	3-1
D025	UNABLE TO INITIALIZE FOR TASK SIMULATION	3-1
D026	UNABLE TO SAVE TASK SIMULATION DATA	3-1
DE05	ERROR 0005 IN DEBUGGER	4-2
DF04	TASK ALREADY TERMINATED	3-1
FF01	".EXIT" OR ".EOP" OUT OF PLACE	3-1
FF02	PROCEDURE LIBRARY ERROR	3-1
FF03	TEXT SUBSTITUTION ERROR	3-1
FF04	MEMORY MANAGEMENT INIT ERROR	3-1
FF05	UNABLE TO ACCESS TCA	3-1
FF06	NCT OVERFLOW	3-1
FF07	INVALID TCA CONTENTS	3-1
FF08	INVALID MODE/STATE	3-1
FF09	SUBROUTINE RETURN STACK OVERFLOW (SDCALL)	3-1
FF0A	NO ROOM IN BG TASK QUEUE	3-1
FF0B	KEYWORD TABLE OVERFLOW	3-1
FF0C	".IF/.LOOP" NESTING LIMIT EXCEEDED	3-1
FF80 to FFBF	INVALID PARAMETER TO .BID, .QBID, .DBID, .OVLY PARAMETER NO. = FFXX-FF80	3-1

Note:

[3] Refer to the *DX10 Remote Terminal Subsystem (RTS) Installation and Operation Manual.*

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
FFF2	S$FMT -- DEFAULT VALUE LONGER THAN 30 CHARACTERS	3-1
FFF3	S$FMT -- NULL KEYWORD POINTER	3-1
FFF5	S$GKEY -- INVALID KEYWORD NUMBER	3-1
FFF6	S$GKEY -- NULL ACTUAL VALUE POINTER	3-1
FFF7	INTERACTIVE ROUTINE ILLEGAL IN BACKGROUND	3-1
FFF8	S$IO -- TLF NOT OPENED	3-1
FFF9	S$IO -- INVALID COLUMN NUMBER	3-1
FFFA	S$IO -- TEXT TOO LONG FOR OUTPUT BUFFER	3-1
FFFB	S$IO -- ALTERNATE FILE ALREADY OPEN	3-1
FFFC	PROCEDURE CALLING STACK OVERFLOW	3-1
FFFD	INSUFFICIENT MEMORY	3-1
FFFF	UNSPECIFIED ERROR	3-1
FFFF	PARAMETER OUT OF RANGE (CKS, CKSR, CSK)	3-1
FFFF	FILE EXISTS AND REPLACE NOT SPECIFIED (CKS, CKSR, CSK)	3-1

Flashing Crash Codes

01	DISK I/O ERROR	2-1
02	NOT ENOUGH MEMORY IN THE SYSTEM	2-1
03	UNABLE TO FIND SYSTEM DISK PDT	2-1
04	ERROR IN PROGRAM FILE DIRECTORY	2-1
05	SYSTEM MEMORY MANAGEMENT ERROR	2-1
06	DISK BIT MAP ROUTINE ERROR	2-1
07	UNABLE TO BID MEMORY RESIDENT TASK	2-1
08	UNABLE TO FIND LOADER FILE	2-1
09	UNABLE TO FIND SYSTEM IMAGE FILE	2-1
0A	UNABLE TO FIND A SYSTEM SEGMENT	2-1
0B	UNABLE TO FIND VCATALOG	2-1
0C	UNABLE TO FIND SYSTEM OVERLAY FILE	2-1
0D	UNABLE TO FIND SYSTEM PROGRAM FILE	2-1
0E	UNABLE TO FIND SYSTEM ROLL FILE	2-1
0F	OVERLAY FILE CHARACTERISTICS CONFLICT	2-1
10	INTERRUPT 2 TRAP	2-1
11	WCS FILE NOT AVAILABLE	2-1
12	ATTEMPT TO BOOT UNPATCHED SYSTEM	2-1
13	ATTEMPT TO BOOT OUT OF DATE BETA TEST SOFTWARE	2-1
14	S$IMAGES/S$LOADER VERSIONS DIFFER	2-1
15	S$IMAGES/S$PROGA VERSIONS DIFFER	2-1
16	S$IMAGES/S$OVLYA VERSIONS DIFFER	2-1

System Crash Codes

*0010	ILLEGAL INTERRUPT >00	5-1
*0011	ILLEGAL INTERRUPT >01	5-1
*0012	ILLEGAL INTERRUPT >02	5-1
*0013	ILLEGAL INTERRUPT >03	5-1
*0014	ILLEGAL INTERRUPT >04	5-1
*0015	ILLEGAL INTERRUPT >05	5-1
*0016	ILLEGAL INTERRUPT >06	5-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
*0017	ILLEGAL INTERRUPT >07	5-1
*0018	ILLEGAL INTERRUPT >08	5-1
*0019	ILLEGAL INTERRUPT >09	5-1
*001A	ILLEGAL INTERRUPT >0A	5-1
*001B	ILLEGAL INTERRUPT >0B	5-1
*001C	ILLEGAL INTERRUPT >0C	5-1
*001D	ILLEGAL INTERRUPT >0D	5-1
*001E	ILLEGAL INTERRUPT >0E	5-1
*001F	ILLEGAL INTERRUPT >0F	5-1
0020	ILLEGAL INTERNAL INTERRUPT IN DX10	5-1
0021	RETURN USER AREA ERROR	5-1
0022	RETURN SYSTEM AREA ERROR	5-1
0023	TASK MANAGEMENT QUEUING ERROR	5-1
0024	ERROR FROM MEMORY MANAGEMENT ROUTINES	5-1
0025	TM$LDR STATE ERROR	5-1
0026	INVALID SERVER TASK ID	5-1
0027	TM$EXT NOT ZERO IN KILTSK	5-1
0028	UCB DEFINITION TABLE ERROR	5-1
0029	INVALID TASK QUEUED TO TM$LDR	5-1
002A	UNABLE TO MAP IN IMAGE AREA	5-1
002B	ERROR IN LDT BUILT FOR PROGRAM FILE	5-1
002C	TM$EXT <0 IN TM$RTN	5-1
002D	TM$LDR HAS TAKEN END-ACTION	5-1
002E	SO$CPR ERROR	5-1
002F	SO$LDR ERROR	5-1
0030	SYSTEM TABLE UNDERSIZED	5-1
0031	UNEXPECTED ERROR RETURN IN RM$REL	5-1
0032	UNEXPECTED ERROR RETURN IN BM$TRW	5-1
0033	UNEXPECTED ERROR RETURN IN BM$W	5-1
0034	UNEXPECTED ERROR RETURN IN BM$CLO	5-1
0035	UNEXPECTED ERROR RETURN IN BM$FLS	5-1
0036	UNEXPECTED ERROR RETURN IN BM$SCH	5-1
0040	UNEXPECTED ERROR RETURN IN TM$BID	5-1
0041	UNEXPECTED ERROR RETURN IN TM$DGN	5-1
0042	TM$DGN HAS TAKEN END-ACTION	5-1
0043	TSB OR PSB NOT FOUND BY MM$TSK	5-1
0044	UNEXPECTED ERROR RETURN IN MM$TSK	5-1
0045	UNEXPECTED ERROR RETURN IN TM$SBD	5-1
0050	ERROR ON REQUEUE OF INSTALL REQUEST	5-1
0051	INCONSISTENT LDT POINTER FOR PROGRAM FILE	5-1
0070	RELEASE MEMORY ERROR (RETVAR-COMM)	5-1
0071	RELEASE MEMORY ERROR (RETLNK-COMM)	5-1
0072	DEQUEUE ERROR DETECTED (COMM)	5-1
0073	SYSTEM TABLE NOT AVAILABLE (COMM)	5-1
0074	ERROR RELEASING SYSTEM TABLE (COMM)	5-1
0075	NOT USED (COMM)	5-1
0076	NOT USED (COMM)	5-1
0080	DISK MANAGER HAS TAKEN END-ACTION	5-1
0081	UNEXPECTED ERROR RETURN IN DISK MANAGER	5-1
0082	UNDEFINED OPCODE FOR DISK MANAGER	5-1
0083	ADU ALLOCATED WHEN BIT MAP BIT SET	5-1
0084	PBM # OF FIRST ADU OUT OF RANGE	5-1

Note:

* Error returned by SVC processor.

Table 1-1. Guide to Commonly Encountered Errors (Continued)

Error Number	Text	Table Location
0085	ATTEMPTED ACCESS OF NONEXISTENT PBM	5-1
0086	PARTIAL BIT MAP HAS BEEN STEPPED ON	5-1
0087	A BAD WRITE TO DISK PARTIAL BIT MAP	5-1
0088	ERROR READING OR WRITING ROLL$FILE	5-1
0089	END ACTION TAKEN (SOVLDR)	5-1
00A0	FILE MANAGER HAS TAKEN END-ACTION	5-1
00A1	UNEXPECTED ERROR RETURN IN FILE MANAGER	5-1
00A2	SYSTEM AREA DEALLOCATION ERROR	5-1
00A3	SYSTEM AREA ALLOCATION INCONSISTENCY	5-1
00A4	KIF CRASH CONDITION	5-1
00AF	NONEXISTENT ENTRY IN FILE MANAGER	5-1
00E0	END-ACTION TAKEN (DDT)	5-1
00E1	QUEUEING ERROR (DDT)	5-1
00E4	SYSTEM TABLE AREA ERROR (DDT)	5-1
00E5	SYSTEM TABLE AREA ERROR (DDT)	5-1
0100	FUTIL HAS TAKEN END-ACTION	5-1
0101	FILE UPDATE ERROR (FUTIL)	5-1
0102	LOOKUP, DE-LINK FAILURE OF LDT	5-1
0103	FILE LDT NOT IN FCB LDT LIST	5-1
0104	ERROR RETURNING LDT MEMORY	5-1
0105	UNEXPECTED ERROR RETURN IN FUTIL	5-1
0106	ERROR RETURNING FCB MEMORY	5-1
0107	BAD FILE LDT LIST (CLA=0 & FLL <> 0)	5-1
0108	BAD DIRECTORY -- LOOKUP FAILURE)	5-1
0109	SYSTEM ALLOCATION INCONSISTENCY	5-1
010A	ERROR RELEASING ADU JUST ALLOCATED	5-1
010B	BAD DIRECTORY -- FIND HOLE FAILURE	5-1
010C	FAILURE TO ALLOCATE INTERNAL LDT	5-1
010D	FAILURE DE-ALLOCATING INTERNAL LDT	5-1
010E	FILE ADU COUNT OVERFLOW (FUTIL)	5-1
0120	UNABLE TO DELETE TEMPORARY FILE	5-1
0121	UNABLE TO INITIALIZE SYSTEM FILES (SYSRST)	5-1
0122	SYSRST HAS TAKEN END ACTION	5-1
0130	BAD OPCODE IN SVC BLOCK (INSTAL)	5-1
0131	UNDEFINED ERROR RETURN (INSTAL)	5-1
0132	END ACTION TAKEN (INSTAL)	5-1
0133	UNEXPECTED ERROR RETURN (INSTAL)	5-1
0134	DISK LUNO UNDEFINED (INSTAL)	5-1
0135	ERROR RELEASING LUNO (INSTAL)	5-1
0136	ERROR RELEASING FCB (INSTAL)	5-1
0137	SYSTEM TABLE REQUEST ERROR (INSTAL)	5-1
0138	ERROR RETURN FROM DM$TBL (INSTAL)	5-1
0139	ADU ALREADY ALLOCATED (INSTAL)	5-1
013A	INVALID BIT MAP NUMBER (INSTAL)	5-1
013B	BAD ADU LIST RANGES OVERLAP (INSTAL)	5-1
0140	SYSTEM LOG MSG FORMATTED ERROR	5-1
0141	NO POWER FAIL RECOVERY	5-1
0142	NO TERMINAL AVAILABLE	5-1
0143	TERMINAL I/O DURING DISK BUILD	5-1
0144	NO RESPONSE TO DISK BUILD INITIAL MESSAGE	5-1
0150	DISK CHANGED WITH NO UNLOAD (UV) COMMAND	5-1
0177	DS01 USED AS COPY DEVICE IN DCOPY -- IPL REQUIRED	5-1
XXYY	SVC ERROR (ANS, CALL, DISC, LHPC, MHPC)	3-1

2

Loader Crash Codes and Self-Tests

2.1 INTRODUCTION

Errors that the system encounters while attempting the initial program load (IPL) fall into two categories:

- Equipment self-test failures (Business Systems), and
- System loader errors.

The following paragraphs discuss in detail the error reports associated with each type of error.

2.2 SELF-TEST ERROR REPORTS

At power-up, Business Systems execute a series of self-tests to verify system functionality. If the tests pass, the system proceeds with the initial program load (IPL), and normal operation can begin. However, if the tests discover a system hardware error, the system idles and does not perform the IPL.

When the system idles, look at the number strip to your right on top of the terminal. (See Figure 2-1.) Numbers 2 through 8 represent individual self-tests. All of these numbers are illuminated (in red) when you turn on the system. Number 1 is also illuminated (in green) at this time, and is then extinguished when the system is ready to begin the self-tests. If all the numbers remain illuminated, the central processing unit (CPU) is not functioning and the tests cannot begin.

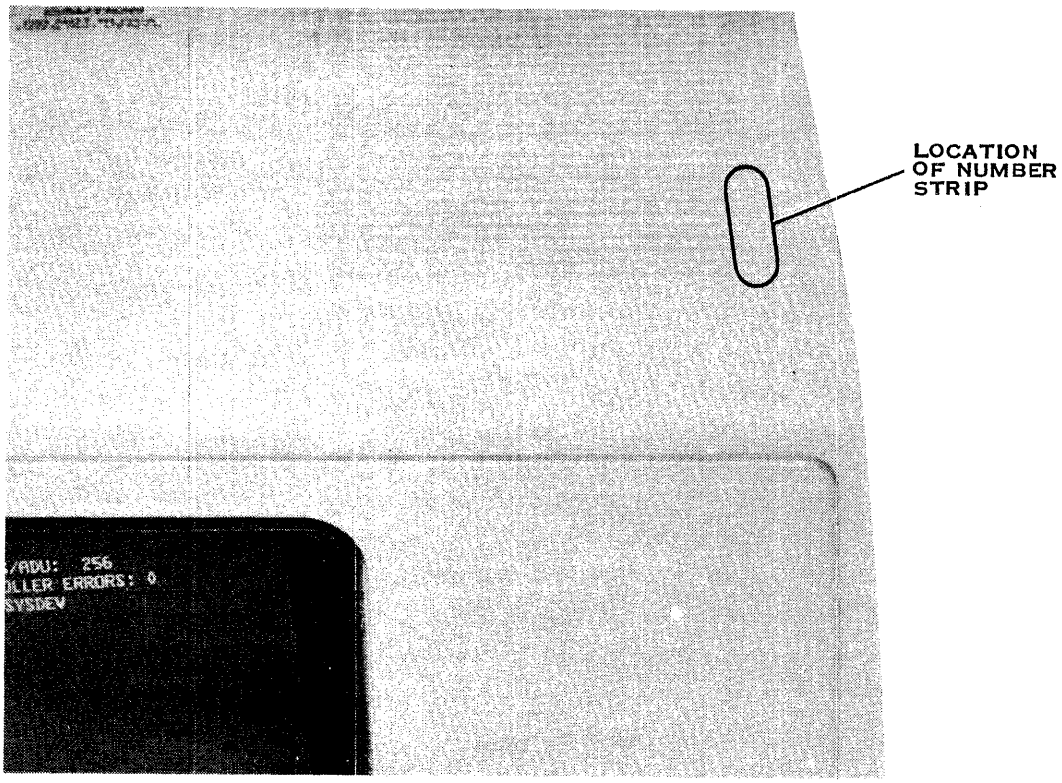

Figure 2-1. Location of the Number Strip

The self-tests begin with number 2. As each test completes successfully, the corresponding number on your terminal's number strip is turned off. If a test fails, its number remains illuminated. If number 2 (CPU self-test) fails, the self-test series halts. Similarly, if number 3 (read-only memory, or ROM self-test) fails, the testing halts. The other tests (numbers 4 through 8) can fail without halting the test series. When self-tests 2 through 8 complete, number 1 is illuminated again.

Coincidental to the system's self-tests is the self-test for your terminal. Should the terminal fail, no messages will appear on the screen. You should relay this information to your dealer or customer representative. If the test is successful, system initialization begins.

The self-tests take approximately 20 seconds to finish. (The first 15 seconds allow your terminal to warm up.) Table 2-1 lists the tests and the corresponding error messages (if any).

Table 2-1. Self-Tests and Error Messages

Test Number[1]	Item Tested	Error Message
2	CPU	—
3	ROM	—
4a	Random access memory (RAM)	RAM FAILURE
4b		RAM PARITY FAILURE
5a	9901 timer	9901 TIMER FAILURE
5b		9901 INTERRUPT FAILURE
6	9902 interface	9902 INTERFACE FAILURE
7	Peripheral bus interface (PBI)	PBI FAILURE
8	Comm option board	COMM OPTION FAILURE
NONE	Business System terminal[2]	

Notes:

[1] Failures of Tests 2 and 3 are major faults; failures of tests 4 through 8 are minor faults.

[2] No message is printed indicating whether or not the Business System terminal passed or failed its self-test. If the terminal passes, IPL is begun. A failure idles the system.

If any of the tests fail, power down your system. Wait a minimum of 20 seconds after power down before powering up again. Then, wait another 20 seconds after power up to allow the system to cycle. If the problem recurs, call your dealer or customer representative and specify which messages appeared on your screen, or which numbers are illuminated on the numbered strip.

2.3 LOADER CRASHES

If your system is unable to properly load the operating system software, an error occurs; for without that software, the system will not function. Four possible situations keep a system from properly loading:

1. The Read Only Memory (ROM) self-test has found a malfunction in the system equipment.
2. The ROM loader is not able to load the track 1 loader from the system disk.
3. The track 1 loader is unable to load the system loader file, (usually S$LOADER).
4. The system loader file is unable to load the actual DX10 software.

2.3.1 ROM and Track 1 Loader Errors

ROM and track 1 loader errors are described in the *ROM Loader User's Guide* or in the hardware user's guide for the computer model you are using.

2.3.2 System Loader Crash Codes

For those systems with a 990 computer programmer panel, the leftmost eight data LEDs on the panel will flash when a system loader crash occurs. (The flashing LEDs cause this type of crash to be called a Flash Crash.) At that time, the right eight data LEDs form a hexadecimal error code that is listed in Table 2-2.

Most Business Systems have no programmer panel. To display the loader crash code, these systems use the number strip mentioned earlier in the self-test section. In this situation, the green number 1 represents the most significant bit and number 8 represents the least significant bit of the crash code. (In reading a crash code on the Business Systems, the green color of number 1 is of no significance other than representing the most significant bit of the code.)

After you have read the loader crash code, consult Table 2-2 for a description of the error and an appropriate recovery procedure. Many of the recovery actions in Table 2-2 require loading a backup system. Some actions refer to procedures in the troubleshooting guide in Section 8.

NOTE

Be sure to read the introduction to Section 8 before attempting any of the recovery procedures recommended in Table 2-2.

2.4 STRUCTURE OF TABLE 2-2

Table 2-2 first lists the hexadecimal crash code, which is followed by a phrase that briefly describes the error. On the next line, the source of the error (whether caused by the *user, system*, or *hardware*) is listed along with a detailed description of the possible actions that led to the error. The error report then recommends a course of *action* for recovery.

Table 2-2. System Loader Crash Codes

01	DISK I/O ERROR
	System Error. A hardware error prevents proper reading of the disk being used in the initial program load (IPL).
	Action. Try the IPL again. If it is still unsuccessful, either the disk hardware is failing, or there is an error on the system disk in one of the system files. See the paragraph entitled *Find Disk Error Through the Programmer Panel* in Section 8.
02	NOT ENOUGH MEMORY IN THE SYSTEM
	System Error. The system hardware configuration contains less than the minimum amount of memory needed to support DX10.
	Action. Check to see if physical memory is adequate and working properly. Verify that the switch settings on the memory boards are correct. See *Check for Memory Problems* in Section 8.

Table 2-2. System Loader Crash Codes (Continued)

03 UNABLE TO FIND SYSTEM DISK PDT

User Error/System Error. The system image you are trying to load does not include a disk drive with a TILINE address and unit number corresponding to those of the drive from which you are trying to load. Possibly the drive was not included in the system configuration during system generation.

Action. Either regenerate the system adding the desired disk drive, or move your system disk to a drive that is included in the system configuration you are using. Then retry the initial program load (IPL). If the error persists, call your dealer or customer representative for software help.

04 ERROR IN PROGRAM FILE DIRECTORY

System Error. The loader cannot locate the system image to be loaded in the system image program file (.S$IMAGES). A probable cause is hat the system image program file has been partially destroyed.

Action. In Section 8, see *Rebuild the Program File* for the system images file, or restore from backup.

05 SYSTEM MEMORY MANAGEMENT ERROR

System Error. An error has been detected in system memory management routines. The probable cause is hardware failure.

Action. Perform the initial program load (IPL) again. If still unsuccessful, see *Check for Memory Problems* in Section 8.

06 DISK BIT MAP ROUTINE ERROR

System Error. An error has been detected in the system disk bit map handler routine.

Action. Perform the initial program load (IPL) again. If still unsuccessful, see *Rebuild the Disk Volume* in Section 8. Then regenerate the system. If still unsuccessful, call your dealer or customer representative for software help.

07 UNABLE TO BID MEMORY RESIDENT TASK

System Error. The system loader is unable to bid a memory-resident task. An inconsistent structure in the system program file probably caused this error.

Action. See *Rebuild the Program File* in Section 8 for the system program file, or restore it from a backup copy.

Table 2-2. System Loader Crash Codes (Continued)

08 UNABLE TO FIND LOADER FILE

System Error. The loader on track 1 cannot access the intermediate loader (.S$LOADER). Three problems can cause this error:

- S$LOADER has never been put on the disk, or has been deleted.

Action. Copy a good S$LOADER file to the disk.

- An incorrect file is selected in the volume information.

Action. Use the Modify Volume Information (MVI) command to check that the proper loader file is selected.

- The volume catalog is partially destroyed.

Action. See *Check the Directory Structures* in Section 8 for the loader file.

09 UNABLE TO FIND SYSTEM IMAGE FILE

User Error/System Error. The system image file cannot be found. The S$IMAGES file has been deleted, or was not copied to the disk, or the volume catalog has been partially destroyed.

Action. Copy an S$IMAGES file to the disk, or see *Check the Directory Structures* in Section 8 for the S$IMAGES file.

0A UNABLE TO FIND A SYSTEM SEGMENT

System Error. One of the overlay segments of the system is missing from the system image program file.

Action. Check the link map of the system image that will not load to verify that all segments are linked properly. Verify that the overlay IDs are not changed if you copied the system image with the Copy Program Image (CPI) command. If you still find no problem, see *Rebuild the Program File* in Section 8 for the S$IMAGES file. If the problem persists, call your dealer or customer representative for software help.

0B UNABLE TO FIND VCATALOG

System Error. The disk volume catalog cannot be accessed. The volume catalog has probably been partially destroyed.

Action. See *Check the Volume Structures* and *Check the Directory Structures* in Section 8 for VCATALOG. You may need to rebuild the disk. If so, see *Check for Disk Problems*. If the error persists, call your dealer or customer representative for software help.

Table 2-2. System Loader Crash Codes (Continued)

0C UNABLE TO FIND SYSTEM OVERLAY FILE

User Error/System Error. Three problems can cause this error:

- S$OVLYA was not put on the disk, or has been deleted.

Action. Copy a correct version of S$OVLYA to the disk.

- The incorrect file is selected in the volume information.

Action. Use the Modify Volume Information (MVI) command to verify that the correct file is selected.

- The volume catalog is partially destroyed.

Action. See *Check the Directory Structures* in Section 8 for S$OVLYA.

0D UNABLE TO FIND SYSTEM PROGRAM FILE

User Error/System Error. Three problems can cause this error:

- S$PROGA was not put on the disk, or has been deleted.

Action. Copy a correct version of the S$PROGA file to the disk.

- The incorrect file is selected in the volume information.

Action. Use the Modify Volume Information (MVI) command to verify that the correct file is selected.

- The volume catalog is partially destroyed.

Action. See *Check the Directory Structures* in Section 8 for S$PROGA.

0E UNABLE TO FIND SYSTEM ROLL FILE

User Error/System Error. The roll file does not exist. It was probably never created. It is also possible that the volume catalog may be partially destroyed.

Action. Install the disk as a secondary volume and use the Create System Files (CSF) command to create the roll file. If the error recurs, see *Check the Directory Structures* in Section 8.

0F OVERLAY FILE CHARACTERISTICS CONFLICT

User Error. A copy of the .S$OVLYA file has conflicting characteristics; the file is not relative record file, the record length does not equal 800, or the file is blocked.

Action. Delete the file on the affected disk and copy it without the RPRL option in the Copy Directory (CD) command, or copy it with the Copy Concatenate (CC) command. See *Check the Directory Structures* in Section 8 for S$ROLLA.

Table 2-2. System Loader Crash Codes (Continued)

10 INTERRUPT 2 TRAP

User Error/Hardware Error. One of the following errors occurred: parity error, illegal instruction, TILINE time-out, or mapping error. Either S$LOADER or one of the system files has been partially destroyed on the disk, or a hardware failure has occurred.

Action. Ensure that the correct loader file has been selected. If so, copy a good S$LOADER file to the disk and retry. See *Rebuild the Program File* in Section 8 for S$IMAGES. If the error recurs, see *Check for Disk Problems* also in Section 8.

11 WCS FILE NOT AVAILABLE

User Error. 990/12: The file specified in MVI for Writable Control Store (WCS) was not found.

Action. Verify that the file name specified is correct. If the error persists, see *Check the Directory Structures* in Section 8 for the file.

12 ATTEMPT TO BOOT UNPATCHED SYSTEM

User Error. A PGS command has not been performed on the system selected for loading by the MVI command.

Action. Perform the PGS command before initiating the initial program load procedure, or select a different system to load.

13 ATTEMPT TO BOOT OUT OF DATE BETA TEST SOFTWARE

User Error. You are using out of date software.

Action. Obtain a current copy of the released software.

14 S$IMAGES/S$LOADER VERSIONS DIFFER

User Error. You cannot use S$LOADER to load an operating system that is not of the same version. For example, you must use a DX10 3.6 S$LOADER with a DX10 3.6 operating system.

Action. Use the S$LOADER that was shipped with the system being loaded.

15 S$IMAGES/S$PROGA VERSIONS DIFFER

User Error. You cannot use S$PROGA with an operating system that is not of the same version. For example, you must use a DX10 3.6 S$PROGA with a DX10 3.6 .S$IMAGES.

Action. Use the S$PROGA file that was shipped with the operating system being loaded.

16 S$IMAGES/S$OVLYA VERSIONS DIFFER

User Error. You cannot use S$OVLYA with an operating system that is not of the same version. For example, you must use a DX10 3.6 S$OVLYA with a DX10 3.6 operating system.

Action. Use the S$OVLYA file that was shipped with the operating system being loaded.

3

SCI, Command, Text Editor, and Debugger Error Reporting

3.1 INTRODUCTION

When an error report appears on your terminal, take note of its text and any accompanying error code. Unless the report obviously is from an SVC error, refer to the alphabetical listing of error reports in Table 3-1.

3.1.1 Notes on Table 3-1

Table 3-1 arranges the error messages alphabetically; however, you should note several important items concerning the alphabetic order of Table 3-1 before attempting to find an error.

- Spaces in an error message do not affect the listing order of the messages.
- Asterisks, (*), precede letters. Two asterisks precede three asterisks, and three asterisks precede four asterisks.
- Any numeric code appearing at the extreme left of the error message is ignored in the ordering of the messages. Embedded numeric codes, those that do not appear at the extreme left of the message, can affect the order of the error messages if the code is a constant. A code that is constant is an integral part of its accompanying error message. It does not change unless the message changes. The code always has a unique meaning, and is followed by a unique text appropriate to the error. This is most noticeable in the SCI error messages. For instance:

  **** ERROR 9004 **** INVALID NAME SYNTAX

  precedes

  **** ERROR 9005 **** INVALID COMMAND NAME SYNTAX

- Other numeric error codes in the error list are enclosed in angle brackets (<) and (>) and do not affect the ordering of messages. The error report will tell how to interpret the numeric code.
- Some error messages include the name of your file or directory that is affected by the error. Ignore the specified names of files and directories when looking for an error report in the listing, unless the name refers to a system file.
- When Table 3-1 refers to a numbered note, you can find that note at the beginning of the table.

3.1.2 How to Locate an Error Message

To locate an error message in Table 3-1, perform the following procedures:

- Note the numeric code(s), and all of the text. The text may include asterisk strings. If so, note how many asterisks are in the string. If a numeric code appears at the extreme left, ignore it temporarily and use the text to find the message in the table.

- Look for the constant text, using the left end of the message from DX10 to compare to the left end of the text in the table. When you identify a match in the first word, go on to the next word.

- When you get to an embedded numeric code, see if the code appears in the table as a variable (CCEE, XX, XXYY) enclosed in the angle brackets < and >. If it does, skip to the next constant text in the error message and continue to search the table. If it does not, it is a constant to use as a word in the alphabetical order to search for the message.

  The angle brackets < and > do not appear in messages from DX10. They are included in the error lists to identify numeric codes and do not influence the order of the messages in the table.

- Always ignore any device names, file names, or file pathnames, unless the name refers to a system file.

Once you have found the error report, follow the recommended recovery procedure. This may include finding references to particular paragraph titles in the troubleshooting guide (Section 8). The Table of Contents lists and enumerates these titles for quick reference.

3.1.3 Identifying Errors by Type

To identify each error report according to the type of processor that produced it, (command, Debugger, SCI, or Text Editor,) this section of the manual follows the worded text of each error report by a single letter code enclosed in square brackets, such as [C], [D], [S], or [T].

NOTE

The display you see on your terminal does not include the single letter code. The code appears only in this manual to serve as a troubleshooting aid.

- [S] signifies that an SCI error caused the error report.

- [D] signifies that a Debugger error caused the error report.

- [T] signifies that a Text Editor error caused the error report.

- [C] signifies that a standard SCI command detected the error.

Use the bracketed code in conjunction with the following paragraphs.

3.2 ERROR REPORT TYPES IN THIS SECTION

The paragraphs that follow describe the types of error reports found in Table 3-1. Use this information for troubleshooting.

3.2.1 SCI Error Reports

The set of error codes returned by routines within SCI and S$ routines are denoted by [S], which follows the worded text of each SCI error report in this section. The errors that cause this type of report result from the unsuccessful attempt by SCI to interpret a command. Syntactical and typographical errors come under this classification. Some SCI errors are not errors in your responses, but are errors in the SCI command and are normally encountered only when you are developing new SCI commands. The errors that the S$ routines (see Volume III) can produce may be reported to the terminal. All of those errors are listed in the SCI terminal error reporting format:

**** ERROR xxxx **** < AN ERROR MESSAGE>

The numerical error code represented by xxxx is an integral part of the error report in Table 3-1; that is, it is a constant, and affects the order of the alphabetical listings in the table. The value < AN ERROR MESSAGE> may or may not be present. If not, look for the report at the beginning of all the SCI errors in Table 3-1.

3.2.2 Debugger Error Reports

Table 3-1 contains the error reports that can occur during debug operations. These reports have [D] following the worded text of the Debugger error report in this manual. Debugger reports follow the SCI convention and are listed with the rest of the SCI errors.

3.2.3 Text Editor Error Reports

The Text Editor error reports can result from three major functional operations including command selection and specification, edit control, and data entry and display. The Text Editor error reports are worded messages and do not contain numeric error codes. To denote this type of error report, [T] follows the worded message. Text Editor error reports are interspersed throughout Table 3-1. For a listing of all Text Editor error reports together, consult Volume IV.

3.2.4 Command Error Reports

You can trace error reports generated during the execution of an SCI command to a hardware fault, a software error, or a user error. The status of DX10 (busy or inoperative device, illegal file, memory full, and so on) at the time of the fault determines the report you receive. A [C] appears after the command error report defining the error as a command error.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

Action. Either direct the restore/copy to a directory with no program file corresponding to the one in the source, or recreate the destination program file, making it large enough to accommodate the module.

NONE *)W(* <filename> INCLUDE/EXCLUDE FILE NOT FOUND [C]
[BD,CD,RD,VB,VC]

User Error. The specified file was not found in the directory.

Action. Locate the file and recover it from backup, or verify that it really is missing. Removing the name from the include or exclude list will eliminate the error message.

NONE *)W(* <module> <id> INSTALL OR WRITE ERROR [C]
[CD,RD]

User Error/System Error/Hardware Error. The module cannot be installed in the destination program file.

Action. Apply the listed SVC error code to the installed SVCs (>25, >26, >27), or, if the error code is not there, apply it to the I/O SVC (>00) (see Section 4).

NONE *)W(* <alinam> IS AN ALIAS OF <filename> COPY DIFFERS FROM ORIGINAL [C]
[VB,VC]

User Error. The alias in the destination directory does not refer to the same file as it does in the original. The listing shows the content of the original.

Action. Determine the correct version. Use the AA and DA commands to make the destination directory conform to your requirements.

NONE *)W(* <alinam> IS AN ALIAS OF <filename> UNABLE TO COPY: CREATE ERROR [C]
[CD,RD]

System Error/User Error. The alias cannot be added to the file.

Action. Apply the listed SVC error code to the I/O SVC (>00) (see Section 4).

NONE *)W(* <filename> NOT FOUND IN DESTINATION [C]
[VB,VC]

User Error. There is a file in the original, but it does not exist in the destination directory.

Action. If you need the file, copy it into the destination directory.

NONE *)W(* <filename> ORIGINAL BACKUP HAD READ ERRORS OF ALIAS RECORD [C]
[RD,VB]

System Error/Hardware Error. When the original Backup Directory command was executed, it received an error reading an alias record from the source disk.

Action. Use LD to inspect the directory the file is in. Add any missing aliases either by using the AA (Add Alias) command or by restoring from another backup.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE *)W(* <filename> UNABLE TO COPY: ASSIGN OR OPEN ERROR [C]
[BD,CD]

User Error. The file to be backed up or copied is inaccessible and cannot be copied to the backup medium or destination directory.

Action. Terminate the program that is using the file. See *Check for File Access Conflicts* in Section 8.

NONE *)W(* <filename> UNABLE TO COPY: CREATE ERROR [C]
[CD,RD]

User Error. The file cannot be copied because the attempt to create the destination file failed.

Action. Apply the listed SVC error code to the I/O SVC (>00) (see Section 4).

NONE *)W(* <filename> UNABLE TO COPY: ERRORS READING
BACKUP MEDIUM [C]
[RD]

NONE *)W(* <module> <id> UNABLE TO COPY: ERRORS READING
BACKUP MEDIUM [C]
[RD]

Hardware Error. The backup medium cannot be read.

Action. Apply the listed SVC error code to the I/O SVC (>00) (see Section 4). Recover the remaining files from another backup medium. If data from this backup must be recovered from points beyond the error, special recovery methods are necessary. Call your dealer or customer representative for assistance.

NONE *)W(* <filename> UNABLE TO COPY: FAST BACKUP HAS WRONG
SECTOR SIZE [C]
[RD]

User Error. The FAST option was used when the backup was made. The program file specified cannot be restored because the destination disk has a different sector size than the original source disk.

Action. Restore the file to a disk with the proper sector size. Use the LLR command on the backup to check sector size in the header record.

NONE *)W(* <filename> UNABLE TO COPY: ORIGINAL BACKUP HAD
READ ERRORS [C]
)W(<module> <id> UNABLE TO COPY: ORIGINAL BACKUP HAD READ
ERRORS [C]
[RD]

Informative Error. When the original was backed up, an error on the file or module was found and flagged as unrestorable. The copy attempt has now encountered this error. If the error is in a file, the file has been deleted. If the error is in a module, the program file was not deleted, but no further modules have been copied to the program file.

Action. Recover the file or module from another backup medium. A module can be recovered by relinking it into the destination program file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE *)W(* <filename> UNABLE TO COPY: PATHNAME TOO LONG [C]
[BD,CD,RD]

User Error. The file cannot be accessed for backup because its pathname exceeds 48 characters.

Action. There are two possible actions:

1. The copy was started with VCATALOG as part of the directory pathname. Omit VCATALOG and use the volume name as the directory name.
2. The name of the volume on which the file is written has been changed to a longer name. Shorten the name (see the MVI command), or copy to a destination directory with a shorter pathname.

NONE *)W(* <module> <id> UNABLE TO COPY: SOURCE READ ERROR [C]
[CD]

System Error/Hardware Error. The module cannot be copied because the source file has a disk error in it.

Action. Either recover the module from backup or relink it. See *Check for Disk Problems* in Section 8.

NONE *)W(* <filename> UNABLE TO COPY: SOURCE READ ERROR —
COPY DELETED [C]
[CD]

System Error/Hardware Error. The file cannot be copied because the source file has a disk error in it. The partial copy made before the error occurred has been deleted.

Action. Recover the file from another backup medium. See *Check for Disk Problems* in Section 8.

NONE *)W(* <filename> UNABLE TO COPY: WRITE ERROR [C]
[CD,RD]

System Error/Hardware Error. An error was encountered while writing the copy.

Action. Apply the listed SVC error code to the I/O SVC (>00) (see Section 4).

NONE *)W(* <filename> UNABLE TO REPLACE: DELETE ERROR [C]
[CD,RD]

User Error. The file cannot be copied because REPLACE was specified and the destination file could not be deleted.

Action. Either copy the file to a different directory or locate the SVC error listed in Section 4 and take the action recommended there. A LUNO may be assigned or the file may be delete protected.

NONE *)W(* <filename> UNABLE TO REPLACE: FILE TYPE OR USAGE
DIFFERENT [C]
[CD,RD]

User Error. The destination file type or usage is different from the source file and, therefore, cannot be replaced.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

Action. Restore the file to a different destination or delete it and rerun the copy operation.

NONE *)W(* <filename> UNABLE TO REPLACE: DESTINATION ACCESS ERROR [C] [CD,RD]

User Error. The file was in use by another program at the time CD/RD attempted to replace it.

Action. Terminate the program that is using the file and retry the command, or copy the program into a destination where the files are not in use. Check the SVC error listed in Section 4 for remedies. A LUNO may be assigned to the file or it may be delete protected.

NONE *)W(* <module> <id> UNABLE TO REPLACE: ID OR NAME CONFLICT [C]
[CD,RD]

User Error. The module cannot be copied because another module with the same name or ID already exists in the destination program file.

Action. Remove the conflicting module(s) from the destination program file, or copy/restore the specified module to a directory with a program file that can accommodate it.

NONE *)W(* <module> <id> UNABLE TO REPLACE: MODULE DELETE PROTECTED [C]
[CD,RD]

User Error. The module cannot be copied/restored because the corresponding module to be replaced in the destination program file is delete protected.

Action. Remove the delete protection and try the copy/restore again, or copy/restore to a different program file.

NONE *)W(* <filename> UNABLE TO VERIFY: ASSIGN OR OPEN ERROR [C]
[VC]

User Error/System Error. An error was encountered while assigning or opening the master directory.

Action. Find the SVC error listed in Section 4 under I/O SVCs to determine what action to take.

NONE *)W(* <filename> UNABLE TO VERIFY: ERROR READING COPY [C]
)W(<module> <id> UNABLE TO VERIFY: ERROR READING COPY [C]
[VB]

Hardware Error/System Error. The file or module cannot be verified because of errors reading the copy file.

Action. Restore the file to a different disk or directory and verify it in the new location. The image you are trying to verify is unusable. Find the SVC error listed in Section 4 to determine what action to take.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE *)W(* <filename> UNABLE TO VERIFY: ERRORS READING BACKUP MEDIUM [C]
)W(<module> <id> UNABLE TO VERIFY: ERRORS READING BACKUP MEDIUM [C]
[VB]

Hardware Error. The backup medium cannot be read.

Action. Recover the remaining files from another backup medium. If data from this backup must be recovered from points beyond the error, special recovery methods are necessary. Call your dealer or customer representative for assistance.

NONE *)W(* <filename> UNABLE TO VERIFY: FAST BACKUP HAS WRONG SECTOR SIZE [C]
[VB]

User Error. When the backup was made, the FAST option was used. The specified program file cannot be restored because the destination disk has a different sector size than the original source disk.

Action. Restore the file to a disk with the proper sector size. Use the LLR command on the backup to check sector size in the header record.

NONE *)W(* <filename> UNABLE TO VERIFY: FILE TYPE OR USAGE DIFFERENT [C]
[VB,VC]

User Error. The destination file type or usage is different from the source file and, therefore, cannot be verified.

Action. Restore the file to a different destination or delete it and rerun the copy operation.

NONE *)W(* <filename> UNABLE TO VERIFY: ORIGINAL BACKUP HAD READ ERRORS [C]
)W(<module> <id> UNABLE TO VERIFY: ORIGINAL BACKUP HAD READ ERRORS
[VB]

Informative Error. When the original was backed up, an error in the file or module was found and flagged as unrestorable. The verify attempt has now encountered this error. If the error is in a file, the file has been deleted. If the error is in a module, the program file was not deleted, but no further modules have been copied.

Action. Recover the file or module from another backup medium. A module can be recovered by relinking it into the destination program file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE *)W(* <filename> UNABLE TO VERIFY: PATHNAME TOO LONG [C] [VB,VC]

User Error. The file cannot be accessed for verification because its pathname exceeds 48 characters.

Action. There are two possible actions:

1. The backup was started with VCATALOG as part of the directory pathname. Omit VCATALOG and use the volume name as the directory name.
2. The name of the volume on which the file is written has been changed to a longer name. Shorten the name. (See the MVI command.)

NONE *)W(* WARNING — NOTHING AFTER DIRECTIVE [C] [BD,CD,RD,VB,VC]

User Error. A directive in the control file has no specified options or files with it.

Action. Either specify options or files, or continue. Processing is not terminated.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **DISKETTE NOT IBM FORMAT** [C]

User Error. Specified diskette is not an IBM format diskette.

Action. Insert a properly formatted diskette in the specified drive, or return to diskette name request (enter &) and enter the correct drive name.

NONE **DISKETTE NOT IN IBM FORMAT [C]
[IBMUTL]

User Error. The input diskette, which is supposed to contain IBM format files, is not in IBM format.

Action. Check to see that the proper diskette is in the input drive.

NOTE

The Install System Overlay (ISO) command exists for system level maintenance only. Use this command only upon explicit instructions from Texas Instruments. When errors occur, execute the error recovery procedures listed in this table with caution. Should the error condition persist, call your dealer or customer representative.

NONE **ERROR ON OBJECT INPUT — READ ERROR CODE = <XX> OBJECT RECORD <# NNN> [C]
[ISO]

User Error. The utility returned error code XX when it read record number NNN of the object input file.

Action. Insure that you specified the proper object input pathname. For further insight into the nature of the error, refer to error code XX in Table 4-2. See note 3 at the beginning of this table.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **ERROR ON OVERLAY WRITE — WRITE ERROR CODE = <XX> [C] [ISO]

User Error/System Error. The utility returned error code XX when writing the overlay to the overlay file.

Action. Ensure that the target disk is not write-protected. Check the specified overlay number and overlay file to ensure that the overlay number is not beyond the extent of the file. For further insight into the nature of this problem, see error code XX in Table 4-2 and apply that information to SVC opcode >00. See note 3 at the beginning of this table.

NONE **INVALID FILE TYPE (RELREC REQUIRED) [C] [ISO]

User Error. You can only use a relative record type file for a system overlay file. The specified file is not of this type.

Action. Verify that you specified the correct pathname. Check for any forgotten synonyms that may have been expanded. Recreate the file if necessary. See note 3 at the beginning of this table.

NONE **INVALID OBJECT PATHNAME — ASSIGN ERROR CODE = <XX> [C] [ISO]

User Error. An error occurred when the Install System Overlay (ISO) command processor attempted to assign a LUNO to the specified pathname.

Action. Check the specified pathname for proper format. Check for forgotten synonyms that may have been expanded. Ensure that the object input disk volume is installed and that the specified file exists. Further insight into the probable cause of the error may be obtained by referring to error code XX in Table 4-2 and applying the information there to SVC opcode >00 in Table 4-1. See note 3 at the beginning of this table.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **INVALID OBJECT TAG — OBJECT RECORD # NNN [C]
[ISO]

User Error. The utility detected an invalid tag character while processing record number NNN. Tags 1, 9, D, E, and any greater than "I" are considered invalid.

Action. Inspect the object file for the bad tag character. This error generally occurs if the object file has been overwritten. See note 3 at the beginning of this table.

NONE **INVALID OBJECT TEXT — OBJECT RECORD # NNN [C]
[ISO]

User Error. While processing record number NNN, the utility encountered a conversion error on one of the object fields. This error is caused by nonhexadecimal ASCII characters in the field, and generally indicates that the file is partially destroyed. An alternative possibility is that the disk controller has a marginal hardware problem.

Action. Inspect the object file to determine the nature of the error. If the file is destroyed, rebuild it. Otherwise, retry the command. See note 3 at the beginning of this table.

NONE **INVALID OVERLAY FILE PATHNAME — ASSIGN ERROR CODE = <XX> [C]
[ISO]

User Error. An error occurred when the Install System Overlay (ISO) command processor attempted to assign a LUNO to the specified pathname.

Action. Check the specified pathname for proper format. Check for forgotten synonyms that may have been expanded. Ensure that the target disk volume is installed, and that the specified file exists. Further insight into the probable cause of error may be obtained by referring to the I/O error code XX in Table 4-2. See Note 3 at the beginning of this table.

NONE **INVALID OVERLAY NUMBER [C]
[ISO]

System Error. An internal subroutine generated an unexpected error return during the processing of the overlay number parameter.

Action. Retry the command. If problem persists, it may indicate a destroyed Terminal Communications Area (TCA) record, in which case you must perform an initial program load (IPL) on the system. See note 3 at the beginning of this table.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **OBJECT CHECKSUM ERROR — OBJECT RECORD # NNN [C]
[ISO]

Probable Hardware Error. Record number NNN in the object file contains a checksum error. An inconsistency exists in the record. An undetected hardware error probably caused the inconsistency during the build or transfer of the object file.

Action. Retry the command; if the command executes successfully, a marginal disk hardware problem is indicated. If the problem persists, then the error may have been introduced earlier during file manipulation. Rebuild the file and retry the command. See note 3 at the beginning of this table.

NONE **OBJECT LENGTH GREATER THAN FILE RECORD LENGTH — OBJECT RECORD # NNN [C]
[ISO]

User Error. A load bias was encountered which is greater than the physical record length of the overlay file. The bias was encountered on record number NNN in the object file. Since system overlays consist of single physical records on the overlay file, it is impossible to install this object as a system overlay.

Action. Ensure that proper pathnames were specified for both object and overlay files. Check for forgotten synonyms that may have been expanded. Ensure that the overlay file has been created with the proper record length. See note 3 at the beginning of this table.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **OBJECT PATHNAME TOO LONG (MAX = 50 CHARS) [C]
[ISO]

User Error. Fifty characters is the limit for a pathname for this utility.

Action. Check that the correct pathname was specified. Check for any forgotten synonyms that may have been expanded. See note 3 at the beginning of this table.

NONE **OVERLAY FILE PATHNAME TOO LONG (MAX = 50 CHARS) [C]
[ISO]

User Error. You can only use a top level file as a system overlay file, so the maximum legal pathname length is 17 characters.

Action. Check for forgotten synonyms that may have been expanded. See note 3 at the beginning of this table.

NONE **PREMATURE EOF — OBJECT RECORD # NNN [C]
[ISO]

User Error. The utility encountered an end-of-file on the object input file before processing the object module fully. The EOF occurred at record number NNN.

Action. Inspect the object file to ensure the proper object format. You must terminate the module with a colon (:) record. Ensure that you specified the proper object pathname. See note 3 at the beginning of this table.

NONE **UNABLE TO ACCESS TCA [C]
[ISO]

User Error/System Error. The utility returned an error when it attempted to open or read the terminal communications area (TCA) file. This message indicates that system LUNOs and/or files are being released, masked, or modified.

Action. Execute the Quit (Q) command and log back on. If the error persists, perform an IPL. Check for nondebugged user programs that may be writing to or reassigning system LUNOs. See note 3 at the beginning of this table.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **UNABLE TO ALLOCATE MEMORY — SVC ERROR CODE = <XX> [C]
[ISO]

User Error. You specified an overlay file with a record length too large for the buffer space. Such a file is unsuited for use as a system overlay file.

Action. Ensure that you specified the proper overlay file pathname. Delete and recreate the file if necessary. See note 3 at the beginning of this table.

NONE **UNABLE TO OPEN OBJECT INPUT — OPEN ERROR CODE = <XX> [C]
[ISO]

System/User Error. The utility returned error code XX when the Install System Overlay (ISO) processor attempted to open the specified object input for read only access. Another program probably opened the file with conflicting access privileges.

Action. Ensure that you specified the proper pathname. Further insight into the nature of the error may be gained by referring to error code XX in Table 4-2, and applying that information to SVC opcode >00 in Table 4-1. See note 3 at the beginning of this table.

NONE **UNABLE TO OPEN OVERLAY FILE — OPEN ERROR CODE = <XX> [C]
[ISO]

System/User Error. The utility returned error code XX when the Install System Overlay (ISO) processor attempted to open the specified object input for read only access. Another program probably opened the file with conflicting access privileges.

Action. Check for other users that may be manipulating the overlay file. Ensure that you specified the proper pathname. Further insight into the nature of the error may be gained by referring to error code XX in Table 4-2, and applying that information to SVC opcode >00 in Table 4-1. See note 3 at the beginning of this table.

0009 **WARNING**ERROR IN CLOSING PROGRAM FILE [C]
[MPI,SPI]

System Error. The utility issued a Close SVC to the program file and the SVC returned an error condition.

Action. Call your dealer or customer representative.

0005 **WARNING**ERROR WHILE MODIFYING PROGRAM — FILE STATE IS UNPREDICTABLE [C]
[CPI,MPI,SPI]

System Error. The utility failed to write the new data to the program file. Since programs on disk occupy more than one record, multiple writes usually occur. One of these writes failed.

Action. If you were using the Modify Program Image (MPI) command, check the image with the Show Program Image (SPI) command to verify how much, if any, of the desired corrections were actually made. Retry the remainder of the corrections. If you were using the Copy Program Image (CPI) command, retry the command. If the failure recurs, see *Check For Disk Problems* in Section 8, or call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

14XX *** ERROR *** [C]

User Error/System Error. An internal overlay needed by one of the SCI overlays was not available. XX is the SVC error code from the Load Overlay SVC (> 14).

Action. Check the system program file to be sure all the overlays of SCI are present. If not, you will need to restore the system program file from backup.

NONE *** WARNING *** SYSTEM IMAGE NOT VERIFIED [C]
[MVI]

System Error/User Error. This error message can appear if the volume is not installed, (even if the image and the file are correct). It can also appear if the image does not exist in the file, or if the file itself does not exist, or if the system program or overlay files do not exist.

Action. If you change the volume name, unload the old volume name with the Unload Volume (UV) command and then reinstall the new volume name with the Install Volume (IV) command. If you intend to use a disk as a system disk, install (IV) for that disk, then verify that .S$IMAGES exists for the volume and that the system image selected is a task image in .S$IMAGES. This action also holds for the system program file, system overlay file, and the system loader file.

NONE ****BAD TAPE**** [C]
[DCOPY]

Hardware Error. The utility detected a bad area on the tape. This could be due to foreign material on the tape, a damaged tape, (one with an insufficient layer of magnetic oxide, for example) or dirty read/write heads.

Action. Clean the read/write heads and remount the tape. If the failure recurs, change tapes. See *Check for Magnetic Tape Problems* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ****DATA ERROR OCCURRED IN COPYING FILE / COPY FILE DELETED [C] [BD,CD,RD,VB,VC]

System Error. The disk hardware returned an error code indicating a data error on the source medium. The file in error is deleted from the destination medium.

Action. Attempt to recopy the file from the source medium. See *Check for Disk Problems* in Section 8.

NONE ****DATA ERROR OCCURRED IN COPYING PROGRAM FILE [C] [BD,CD,RD,VB,VC]

System Error. The disk hardware returned an error code indicating a data error on the source medium. The utility neither deletes the program file nor completes the copy of the file.

Action. Check for hardware problems, and recover the file from a backup medium.

NONE **** ERROR < CCEE> ****

System Error/Hardware Error/User Error. This message appears when SCI does not have specific variable text to indicate the meaning of the error. CC is the SCI function code and EE is the SVC error code.

Action. Refer to Table 4-2 for the meaning of the SVC error code. The appropriate SVC for the SCI function is listed below:

SCI Function	SVC
00 – 08:	>00
0E:	>14
0F:	>2B

0029 **** ERROR 0029 DX10 SYSTEM TABLE AREA IS FULL [S]

User Error/System Error. No room is available in the system table area for the operation you attempted to perform.

Action. Retry your operation later. If this error persists, consider expanding your system table area.

NONE **** ERROR 01XX **** OPEN SVC ERROR [S]

User Error/System Error. The system is unable to assign a LUNO, open a file, or access a device.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 02XX **** OPEN SVC ERROR INPUT FILE/DEVICE [S]

User Error/System Error. The system is unable to assign a LUNO, open a file, or access a device.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

NONE **** ERROR 03XX **** OPEN SVC ERROR OUTPUT FILE/DEVICE [S]

User Error/System Error. The system is unable to assign a LUNO, open a file, or access a device.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

NONE **** ERROR 04XX **** CLOSE SVC ERROR [S]

User Error/System Error. The system is unable to close or release a LUNO.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

NONE **** ERROR 05XX **** CLOSE SVC ERROR INPUT FILE/DEVICE [S]

User Error/System Error. The system is unable to close or release a LUNO.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

NONE **** ERROR 06XX **** CLOSE SVC ERROR OUTPUT FILE/DEVICE [S]

User Error/System Error. The system is unable to close or release a LUNO.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. Check for a related problem with a file you have defined, the foreground or background Terminal Communication Area (TCA) file, the TCA library file, or the Terminal Local File (TLF).

NONE **** ERROR 07XX **** READ SVC ERROR [S]

User Error/System Error. Error XX occurred while the system read the input file/device, or a file that you referenced such as a procedure file, menu file, and so on.

Action. Look up error XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. Check the files and devices for the indicated error.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 08XX **** WRITE SVC ERROR [S]

User Error/System Error. Error XX occurred while the utility wrote to the output file/device or a file that you specified.

Action. Look up error XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. Check the files and devices for the indicated error.

NONE **** ERROR 0EXX**** 'LOAD OVERLAY' SVC ERROR [S]

User Error/System Error. Error XX occurred during execution of a Load Overlay SVC.

Action. Look up error XX in Table 4-2, and apply that information to SVC opcode >14 in Table 4-1. Check for related problems with the SCI overlay in .S$PROGA. You may need to restore .S$PROGA from backup. Also, verify that the desired overlay ID is in the .OVLY primitive. Check for related problems.

NONE **** ERROR 0FXX **** 'BID TASK' SVC ERROR [S]

User Error/System Error. Error XX occurred during the execution of a Bid Task SVC from a .BID, .QBID, or .DBID SCI primitive.

Action. If the error code is >0F01, make sure that a LUNO is assigned to a program file as specified by the procedure, then bid the task again. Otherwise, look up error XX under the SVC errors in Table 4-2 and apply that information to SVC >2B in Table 4-1. Check for related problems. Also, verify that the desired task ID and program file are correctly specified on the .BID or .QBID command.

NONE **** ERROR 9000 **** INVALID SYNTAX [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI language statements in the command for valid syntax.

NONE **** ERROR 9001 **** INVALID ACCESS NAME SYNTAX [S]

User Error. A syntax error occurred in an access name in the executing command.

Action. Check the access name(s) you entered for proper construction and check the SCI language statements using the command for valid syntax.

NONE **** ERROR 9002 **** INVALID INTEGER EXPRESSION [S]

User Error. A syntax error occurred in the executing command.

Action. Check values entered as numbers for proper construction and check the SCI language statements in the command for valid syntax. Be sure that all synonyms being used as numbers are preceded by an at sign (@).

NONE **** ERROR 9003 **** INVALID KEYWORD SYNTAX [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI keywords in the command for valid syntax, and proper use.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 9004 **** INVALID NAME SYNTAX [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI language statements in the command for valid syntax in your responses to prompts of type < name> .

NONE **** ERROR 9005 **** INVALID COMMAND NAME SYNTAX [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI language statements using the command for valid syntax of the command name.

NONE **** ERROR 9006 **** INVALID RELATION NAME [S]

User Error. A syntax error occurred in the executing command.

Action. Check SCI .IF, .WHILE, and .UNTIL primitives in the command for valid relational operators. For a list of the valid relational operators, see Volume III.

NONE **** ERROR 9007 **** INVALID TYPE SPECIFICATION [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI language statements in the command for valid keyboard types.

NONE **** ERROR 9008 **** INVALID SYNONYM NAME SYNTAX [S]

User Error. A syntax error occurred in the executing command.

Action. Check the SCI language statements in the command for valid synonym name syntax.

NONE **** ERROR 9009 **** MISSING COMMA [S]

User Error. You did not enter, or did not properly specify a comma (,) as the syntax of the command procedure requires.

Action. Look for and correct an error in separating the items of a list, or in separating the positional parameters of a primitive command, such as .IF.In particular, look for expansions of synonyms or keywords containing arbitrary characters that can give the appearance of part of a list (such as an unbalanced parenthesis).

NONE **** ERROR 900A **** SPURIOUS CHARACTERS ON END OF COMMAND [S]

User Error. There are unexpected characters past the last character of the command.

Action. Be sure that you begin comments with an exclamation point (!). See if you entered a period (.) as a comma (,). Synonyms or keyword expansions can contain commas or parentheses only if the expansion is enclosed in double quotation marks ("@SYN").

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 900B **** MISSING = CHARACTER [S]

User Error. SCI expected an equal sign (=), but did not find one.

Action. Check the syntax of the command. Look for unbalanced parentheses and a period (.) entered as a comma (,).

NONE **** ERROR 900D **** MISSING PARENTHESIS [S]

User Error. An opening parenthesis or closing parenthesis is missing.

Action. Check the syntax of the command for unbalanced parentheses. Also look for a missing comma (,) or string quotation mark.

NONE **** ERROR 900E **** UNKNOWN COMMAND NAME [S]

User Error. The command specified is not defined on the procedure library you are using.

Action. Verify that you are using the correct procedure library (.USE primitive). Check the spelling of the command name by looking for it in the menus.

NONE **** ERROR 900F **** UNKNOWN KEYWORD [S]

User Error. The keyword specified is not defined for the command.

Action. Check the command documentation to find the correct keyword name, or enter the command interactively so that you can read the keyword prompt. See *Check the Command Procedure* in Section 8.

NONE **** ERROR 9010 **** UNKNOWN FILE OR DEVICE [S]

User Error. The file or device name specified is missing.

Action. Verify that the file or device is named properly. If you use synonyms, be sure that they are correctly defined. For files, ensure that the proper disk volume is installed. For devices (such as disks), ensure that the unit is online.

NONE **** ERROR 9011 **** REQUIRED ARGUMENT NOT PRESENT [S]

User Error. The command requires a parameter that you did not specify.

Action. Check the command documentation, or enter the command interactively to determine which parameters are required, then supply their values. See *Check the Command Procedure* in Section 8.

NONE **** ERROR 9012 **** PRIVILEGED COMMAND [S]

User Error. The specified command can only be executed by a user having a privilege level higher than that assigned to the user ID currently logged on.

Action. Use a different command. User privilege levels are set when user IDs are assigned and can be changed by the Modify User ID (MUI) command. (See Volume II.)

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 9013 **** "YES" OR "NO" IS REQUIRED [S]

User Error. You did not specify yes (Y) or no (N) for a YES/NO parameter.

Action. Enter a value of YES or NO or a variation thereof, (Y, or N), for the keyword.

NONE **** ERROR 9014 **** INVALID LEFT OPERAND OF .IF, .UNTIL, OR .WHILE [S]

User Error. The left operand of an .IF, .WHILE, or .UNTIL primitive is not a valid string.

Action. Be sure that the left operand is either entirely omitted (null string) or is a syntactically valid string. Generally, this problem is caused by expansion of keywords or synonyms that contain commas, parentheses, quotes, or other special characters. Always enclose strings in quotation marks when they are used for comparison operands.

NONE **** ERROR 9015 **** INVALID RIGHT OPERAND OF .IF, .UNTIL, OR .WHILE [S]

User Error. The right operand of a .IF, .UNTIL, or .WHILE primitive is not a valid string.

Action. Be sure that the right operand is either entirely omitted (null string) or is a syntactically valid string. Generally, this problem is caused by expansion of keywords or synonyms that contain commas, parentheses, quotation marks, or other special characters. Always enclose strings in quotation marks when they are used for comparison operands.

NONE **** ERROR 9016 **** INVALID SYNTAX FOR A LIST [S]

User Error. You incorrectly specified a list of items.

Action. Look for missing commas and unbalanced parentheses, and incorrectly specified list items. Check for synonym keyword expansions that contain unbalanced parentheses. Enclose such items in quotation marks. See *Check the Command Procedure* in Section 8.

NONE **** ERROR 9017 **** COMMAND OUT OF PLACE [S]

User Error. The specified command (or primitive) cannot be used in the current context.

Action. Be sure that commands (or primitives) that must be used together are properly sequenced. Examples: .IF—.ELSE—.ENDIF; .PROC—.EOP; BATCH—EBATCH; .DATA—.EOD; KEY—ENDKEY.

NONE **** ERROR 9018 **** UNEXPECTED END-OF-FILE [S]

User Error. The command or primitive unexpectedly encountered an end-of-file.

Action. Be sure no records are missing from the input file. Batch input should terminate with an EBATCH, Q, or .STOP command (or primitive). Files are valid unless the EOF occurs in the middle of a command continuation. See *Check the Command Procedure* in Section 8 for missing lines that cause unclosed .IF or .LOOP blocks.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 9019 **** INVALID KEYWORD VALUE [S]

User Error. The keyword value specified is of the wrong type.

Action. Check the command documentation for the correct type of the keyword. See *Check the Command Procedure* in Section 8 for missing synonym expansion characters (@) in default values specified with synonyms.

NONE **** ERROR 901A **** INVALID STRING VALUE [S]

User Error. You incorrectly specified a string value.

Action. Enclose the string in quotation marks, with any internal occurrences of quotation marks represented by a pair of quotation mark characters.

NONE **** ERROR 901B **** OUTPUT TEXT BUFFER IS TOO SMALL [S]

User Error. An S$ routine, which returns a text string value, could not find room in the output buffer for the resulting text.

Action. Be sure that the buffers are adequate for all ranges of values and that the first byte of the buffer contains the count of the number of characters that the buffer can hold. See *Check the Command Procedure* in Section 8.

NONE **** ERROR 901D **** ALREADY HAVE BG TASK PENDING [S]

User Error. You attempted to execute a .QBID or .DBID primitive before a previously queued task completed.

Action. Either wait for the previous task to terminate by using the Show Background Status (SBS) or Wait (WAIT) commands, or kill the previous task with the Kill Background Task (KBT) command. (Volume II explains command usage.)

NONE **** ERROR 901E **** CAN'T QUIT WITH BG TASK PENDING [S]

User Error. You entered a Q command or .STOP primitive while a task initiated by .QBID was pending or executing.

Action. Either wait for the previous task to terminate by using the Show Background Status (SBS) or Wait (WAIT) commands, or kill the previous task with the Kill Background Task (KBT) command. (Volume II explains command usage.)

NONE **** ERROR 901F **** INVALID USER ID [S]

User Error. The user ID you specified does not exist.

Action. Enter a valid user ID.

NONE **** ERROR 9020 **** DUPLICATE USER ID NUMBER [S]

User Error. A new user ID conflicts with an existing one.

Action. Generate new user IDs with numeric parts which are unique to the system.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 9021 **** USER ID IS IN USE [S]

User Error. The specified user ID is in use at another terminal.

Action. Use another user ID, use a terminal that has already been logged on to, or log off the terminal that is using the desired user ID.

NONE **** ERROR 9022 **** INVALID USE OF A DEVICE NAME [S]

User Error. You specified a device name where you must enter a file name.

Action. Enter a file name or accept the default value.

NONE **** ERROR 9023 **** COMMAND IS INVALID IN BATCH MODE [S]

User Error. At an interactive terminal, you entered a command valid only in batch mode.

Action. Use another command, or write a batch stream to use the desired command.

NONE **** ERROR 9024 **** A DEVICE NAME IS REQUIRED [S]

User Error. The specified value is not a valid device name.

Action. Use a valid device name.

NONE **** ERROR 9025 **** INVALID PASSCODE [S]

User Error. The passcode you entered for log-on does not match the user ID you entered.

Action. Use the passcode attached to the user ID, change the passcode attached to the user ID, or use a different user ID.

NONE **** ERROR 9026 **** INVALID FILE TYPE [S]

User Error. The file specified is not of the correct type.

Action. Use directory file names for directories. Specify sequential files for source and object files, and program files for programs, overlays, and tasks.

NONE **** ERROR 9027 **** INVALID NESTING OF .IF/LOOP [S]

User Error. The nesting structure of .IF, .ELSE, and .ENDIF, or .LOOP, and .REPEAT is incorrect.

Action. Check for a missing .IF, .ENDIF, .LOOP, or .REPEAT primitive. Verify that the ranges for .IF blocks and .LOOP blocks do not overlap.

NONE **** ERROR 9028 **** WARNING — DEFAULT MENU NOT FOUND [S]

User Error. The directories specified in the .USE primitive do not contain a default menu.

Action. In VDT mode, SCI clears the screen unless a default menu is installed within the effective directories.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR 9029 **** COMMAND NOT ALLOWED FROM PRIMARY INPUT [S]

User Error. The specified command is allowed only when SCI is processing a command procedure and cannot be entered directly in a batch stream or from the terminal.

Action. Enter another command to accomplish the same purpose.

NONE **** ERROR 9049 **** ERROR — OUTPUT FILE CANNOT BE A KEY INDEXED FILE [S]

User Error. Two causes exist for this error:

- The output file previously exists, and is a key indexed file (KIF).
- The output file does not previously exist, but the first input file is a KIF. The output file is created with the same characteristics as the first input file.

Action. Correct according to the type of file causing the error. See Volumes II and III for information on key indexed files.

NONE **** ERROR 920B **** TOO MANY LIBRARY NAMES [S]

User Error. When using the .USE primitive, you specified more than five command libraries.

Action. Specify five or fewer command libraries when using the .USE primitive.

NONE **** ERROR D001 **** VALUE EXCEEDS 16 BITS [D]

User Error. A value cannot be represented by a 16-bit word. For example, you cannot use the Find Word (FW) command with a value to be found of 123456.

Action. Enter a legitimate value.

NONE **** ERROR D002 **** VALUE EXCEEDS 8 BITS [D]

User Error. A value cannot be represented in one byte. For example, you cannot specify a value of 341 for a Find Byte (FB) Debugger command.

Action. Enter a legitimate value.

NONE **** ERROR D003 **** INVALID TASK STATE FOR HALT [D]

User Error. You cannot halt the task in its current state. For example, the task is suspended for queue input.

Action. Check the task state. Force the task into memory and try again.

NONE **** ERROR D004 **** UNABLE TO SUSPEND TASK [D]

User Error. You cannot suspend the task at this time. The HT command generates this message if the task cannot be halted, usually because the task is not currently executing (for example, it is waiting for I/O).

Action. Patch the task so that it "spins" (executes in a tight loop). Rebid the patched task and then enter HT.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR D005 **** USER NOT SYSTEM USER [D]

User Error. You entered the run-time ID of a system task into a Debug command, and you are not authorized to access a system task.

Action. Check for the correct task ID and retry the Debug command.

NONE **** ERROR D006 **** INVALID RUN ID [D]

User Error. The run ID is incorrect. For example, you entered a run ID of zero.

Action. Check for the correct run ID and retry the Debug command.

NONE **** ERROR D007 **** NULL PARAMETER [D]

User Error. A required parameter was not specified.

Action. Check input parameters. Correct input parameters and retry Debug command.

NONE **** ERROR D008 **** NO SUCH ENTRY IN BRKPT TABLE [D]

User Error. An attempt was made to delete a nonexistent breakpoint.

Action. Check the breakpoints.

NONE **** ERROR D009 **** DUPLICATE BREAKPOINT ADDRESS [D]

User Error. An attempt was made to assign a breakpoint to a location which already has a breakpoint assigned to it.

Action. Check the breakpoints.

NONE **** ERROR D00A **** TASK NOT SUSPENDED [D]

User Error. You entered a Resume Task (RT) command for a task that is not suspended.

Action. Verify that you issued the command for the correct task. Or, halt the task, using the HT command to suspend the task.

NONE **** ERROR D00B **** STATE = TERM, MEMORY RESIDENT [D]

User Error. You attempted to suspend a task that was terminated and memory resident.

Action. Check the task ID, if it is correct, try again. If the ID is incorrect, enter the correct ID and try again.

NONE **** ERROR D00C **** BREAKPOINT TABLE FULL [D]

System Error. A breakpoint was not assigned because the internal table that holds breakpoints is full.

Action. Delete one or more breakpoints.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR D00D **** COMMAND INVALID IN BATCH [D]

User Error. You entered a Debug command in batch mode, which is not allowed.

Action. Use TTY or VDT mode to enter the command.

NONE **** ERROR D00E **** EXCEEDED MEMORY LIMITS [D]

User Error. You attempted to access a memory location outside of the task's assigned memory area.

Action. Check the specified location.

NONE **** ERROR D00F **** TASK NOT AT BREAKPOINT [D]

User Error. You entered a DPB, PB, or DB command when the task was not at a breakpoint.

Action. Verify the location of the breakpoints. If you want a breakpoint, install one and enter the Resume Task (RT) command. If you do not want a breakpoint, enter the RT command.

NONE **** ERROR D010 **** NO TASK IN DEBUG [D]

User Error. A command was issued for a controlled task, but no task is currently in the Debug mode.

Action. Use the XD command to place the task in the Debug mode.

NONE **** ERROR D011 **** TASK ALREADY IN DEBUG [D]

User Error. An XD command was issued, but a task is already in Debug mode.

Action. Remove the prior task from Debug mode with the QD command.

NONE **** ERROR D012 **** TASK NOT IN TERMINAL SET [D]

User Error. You entered an XD command for a task that is not a member of the task set of your terminal.

Action. Verify that the task ID is correct.

NONE **** ERROR D013 **** INVALID BREAKPOINT TYPE [D]

User Error. You specified an invalid breakpoint type using an ASB command.

Action. Specify one of the indicated letters in the ASB command.

NONE **** ERROR D014 **** EXPRESSION STACK OVERFLOW [D]

System Error. The internal expression table is full.

Action. Reduce the nesting level of parentheses in the expression.

NONE **** ERROR D015 **** INVALID OBJECT TAG [D]

User Error/System Error. An invalid object tag exists in the object file you specified in the SD command.

Action. Verify that the object module is correct, and is correctly linked.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR D016 **** INVALID SYMBOLIC NAME [D]

User Error. An invalid symbolic name was found in an expression.

Action. Check the syntax of the expression.

NONE **** ERROR D017 **** OUTPUT TEXT BUFFER OVERFLOW [D]

System Error. The expansion of an expression overflowed an internal buffer.

Action. Reduce the length of the input expression.

NONE **** ERROR D018 **** SYMBOL TABLE OVERFLOW [D]

System Error. An unsuccessful attempt was made to get memory to hold the symbol table built from the object file specified in the XD command.

Action. Check the input object file. Too many symbols from the SYMT option of the assembler or the link editor may exist. You may need to delete the SYMT option from some of your modules.

NONE **** ERROR D019 **** UNBALANCED PARENTHESIS [D]

User Error. An unbalanced parenthesis exists in an expression.

Action. Check the expression syntax, and correct the parenthesis.

NONE **** ERROR D01A **** INVALID REGISTER NUMBER [D]

User Error. You specified the wrong register number. For example, you entered a register number outside the range 0 – 15 in the MWR command.

Action. Respecify the register number.

NONE **** ERROR D01B **** NUMBER OF VALUES EXCEEDS 16 WORDS [D]

User Error. You specified more than 16 words in the FW command, or more than 32 bytes in the FB command.

Action. Respecify the command with less than 17 (FW) or less than 33 (FB) values.

NONE **** ERROR D01C **** MISSING QUOTE CHARACTER [D]

User Error. You left out part or all of a set of quotation marks needed to enclose a string.

Action. Check the string syntax. Add the necessary quotation marks.

NONE **** ERROR D01D **** TASK TERMINATED — DEBUG MODE DISCONTINUED [D]

User Error. You attempted to access a controlled task which had terminated. Debug mode for the task is discontinued.

Action. You can rebid the task if you desire.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR D01E **** TASK TERMINATED [D]

User Error. You attempted to access a task which had terminated.

Action. You can rebid the task if you desire.

NONE **** ERROR D026 **** UNABLE TO SAVE TASK SIMULATION DATA [D]

System Error. The system encountered an error in trying to save the simulation data on the disk.

Action. Check the system disk for the presence of the .S$DEBUG file.

NONE **** ERROR DF04 **** TASK TERMINATED [D]

User Error. The task you are attempting to debug is terminated.

Action. Restart the debug session.

NONE **** ERROR FF01 **** .EXIT OR .EOP OUT OF PLACE [S]

User Error. .EXIT or .EOP is found outside of a .PROC definition.

Action. Check for a missing .PROC primitive.

NONE **** ERROR FF02 **** PROCEDURE LIBRARY ERROR [S]

User Error/System Error. The command procedure for the command you entered is not properly installed in the procedure library.

Action. This problem should occur only if you have attempted to modify the procedure library on disk, bypassing the correct procedures (the .USE—.PROC—.EOP primitives). Redefine the command procedure by executing the batch installation procedure for the command, or make sure that the command name is the same as the file name in the procedure directory.

NONE **** ERROR FF03 **** TEXT SUBSTITUTION ERROR [S]

User Error/System Error. Using & and @ resulted in expansion overflow of the internal buffer.

Action. If the line contains several keyword or synonym expansions, break them up with continuation lines. Avoid using extremely long synonym or keyword values.

NONE **** ERROR FF05 **** UNABLE TO ACCESS THE TCA [S]

User Error/System Error. The Terminal Communication Area (TCA) file cannot be opened, or it appears to contain meaningless data.

Action. Be sure that LUNOs 1, 2, and 3 are not released, masked, or redefined. See *Check the TCA File* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR FF06 **** SYNONYM TABLE OVERFLOW [S]

User Error/System Error. The number of characters needed to store your synonyms and their values exceeds the synonym table capacity.

Action. Delete unneeded synonyms; define (and use) commands that are not deeply nested or that do not have several long keywords/values. Enter the Q$SYN command to delete system-defined secret synonyms. Q$SYN is part of the Quit procedure. Using it instead of the Q command removes the synonyms and does not log you off of the system.

NONE **** ERROR FF07 **** INVALID TCA CONTENTS [S]

User Error/System Error. The TCA record has inconsistent data.

Action. Be sure that LUNOs 1, 2, and 3 have not been released, masked, or redefined. See *Check the TCA File* in Section 8.

NONE **** ERROR FF08 **** INVALID MODE/STATE [S]

User Error/System Error. The state of SCI has been stated as something other than VDT, BATCH, or TTY. This is generally caused by attempting to bid SCI or an associated task directly with incorrect bid task parameters.

Action. Check the bid task parameters.

NONE **** ERROR FF09 **** SUBROUTINE RETURN STACK OVERFLOW (SDCALL) [S]

System Error. Subroutine nesting depth exceeds the stack length. This should not occur unless SCI has been modified.

Action. Reduce the number of nested procedure calls and nested .IF and .LOOP statements. If the error persists, call for software help from your dealer or customer representative.

NONE **** ERROR FF0A **** NO ROOM IN BG TASK QUEUE [S]

System Error. The QBID task is unable to accept a task queue request from .QBID. This error results when SCI attempts to bid QBID, but receives an error (QBID bids background tasks) or cannot access the file .S$BGTCA.

Action. Try again later. Delete the file .S$BGTCA and see *IPL the System* in Section 8. Restore .S$PROGA from backup. If the problem persists, call your dealer or customer representative for software help.

NONE **** ERROR FF0B **** KEYWORD TABLE OVERFLOW [S]

System Error. The table used to hold keywords and keyword values for commands is full. A command or group of commands is nested too deeply or is calling itself recursively too many times.

Action. Decrease the nesting level or the number of recursive calls. Use shorter keyword names and/or keyword values.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR FF0C **** .IF/.LOOP NESTING LIMIT EXCEEDED [S]

System Error. The stack used to hold information for .IFs and .LOOPs overflowed while executing the command.

Action. Decrease the nesting of .IFs and .LOOPs in the command definition.

NONE **** ERROR FF80 ****

System Error. The internal queues maintained by SCI are partially destroyed. A possible cause is issuing a Halt Output (HO), Kill Output (KO), or Resume Output (RO) command with invalid device names.

Action. See *IPL the System* in Section 8 to restore the structures. If the problem recurs, rebuild the system files, particularly .S$BGTCA, from factory media or from a backup.

NONE **** ERROR FF81 to FFBF **** INVALID PARAMETER TO .BID, .QBID, .DBID, OR .OVLY [S]

User Error/System Error. A parameter is invalid. To find which parameter is incorrect, subtract > FF80 from the error code indicated in the error report.

Action. Look for correct positioning of the values specified in the list following PARMS = . A common error is to have a comma or unbalanced parenthesis in a synonym or keyword expansion which upsets the ordering of the values. In general, the items in the PARMS list should be enclosed in quotation marks.

NONE **** ERROR FFF2 **** S$FMT — DEFAULT VALUE LONGER THAN 30 CHARACTERS [S]

User Error/System Error. S$FMT was called with a default value string longer than 30 characters.

Action. Use a smaller default text string.

NONE **** ERROR FFF3 **** S$FMT — NULL KEYWORD POINTER [S]

User Error/System Error. S$FMT was called with a keyword string address of zero.

Action. Specify a valid keyword string.

NONE **** ERROR FFF5 **** S$GKEY — INVALID KEYWORD NUMBER [S]

User Error/System Error. S$GKEY was called with keyword number outside the range specified on the previous setup call to S$FMT.

Action. Use a valid number, or use as an indication that all keywords have been processed.

NONE **** ERROR FFF6 **** S$GKEY — NULL ACTUAL VALUE POINTER [S]

User Error/System Error. S$GKEY was called to process a keyword with no buffer indicated for the associated value.

Action. Set up the parameters to S$FMT correctly in order to define all keyword buffers.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** ERROR FFF7 **** ATTEMPTED TO USE INTERACTIVE ROUTINE IN BG MODE [S]

User Error/System Error. An interactive routine, such as S$GKEY, was called in batch/background mode.

Action. Determine the mode of operation with a call to S$STAT and operate accordingly.

NONE **** ERROR FFF8 **** S$IO — THE TLF HAS NOT BEEN OPENED [S]

User Error/System Error. S$WRIT, S$WEOL, or S$CLOS was called without a prior call to S$OPEN.

Action. Bracket all code which accesses the TLF with calls to S$OPEN and S$CLOS.

NONE **** ERROR FFF9 **** S$IO — INVALID COLUMN NUMBER [S]

User Error/System Error. S$WRIT was called with an invalid column number.

Action. Position the column number further left in the output line.

NONE **** ERROR FFFB **** S$IO — AN ALTERNATE FILE IS ALREADY OPEN [S]

User Error/System Error. S$OPEN was called to open a file (other than the TLF) twice without an intervening call to S$CLOS.

Action. Use another means of writing if the two files/devices must be open at the same time. Otherwise, call S$CLOS to close the first before opening the second.

NONE **** ERROR FFFC **** PROCEDURE CALLING STACK OVERFLOW [S]

User Error/System Error. The level of procedure nesting exceeded the internal stack size (16).

Action. Rewrite deeply nested procedure call sequences; ensure that recursive procedure calls terminate at a reasonable length.

NONE ****INCORRECT IMAGE TYPE**** [C]
[CPI]

User Error. You specified something other than T, P, or O as the type.

Action. Reissue the command specifying a valid type.

NONE **** INVALID IDENTIFICATION **** [S]

User Error. You specified a user ID that is not in the .S$TCALIB file or a passcode that does not match the one specified when the user ID was created.

Action. Use another user ID either to add the desired ID, or to perform the desired function.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE **** INVALID PARAMETER VALUE **** [S]

User Error. You typed a value in response to a field prompt that was not appropriate for the prompt. For example, you typed characters when the prompt expected a number.

Action. Type an appropriate response for the field prompt.

NONE A DEVICE NAME IS REQUIRED [C]
[PF]

User Error. You have tried to print a file to something other than a device.

Action. Use a device name, for example, LP01.

2E ABNORMAL TERMINATION [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. An internal error occurred within the utility.

Action. Call your dealer or customer representative.

NONE ABORT — ***ERROR < XXYY> *** < file pathname> [C]
[BD,CD,RD,VB,VC]

System Error. Either SVC processor XX returned error YY to the command, or the system encountered an SCI error of the following form:

**** ERROR XXYY **** < AN ERROR MESSAGE>

where XXYY represents a numerical error code such as FFF2, FFF8, and so on.

Action. Consult Table 4-2 for an explanation of the error YY, and apply that information to SVC opcode XX in Table 4-1. If no SVC opcode exists for XX, see the SCI error codes in this table for the error.

NONE ABORT — ***ERROR < XXYY> [C]
[BD,CD,RD,VB,VC]

System Error. A processor returned error YY to the command.

Action. Consult Table 4-2 for an explanation of the error YY, and apply that information to SVC opcode XX in Table 4-1.

NOTE

The error XXYY can be an error code for SVC opcode > 00, or may be of the format CCEE where EE is the error code and CC is a sub-opcode of SVC > 00.

NONE ABOVE DIRECTORY HAS BAD FILE COUNT. CORRECT IS xxxx. [C]
[MD]

System Error. The file count in the overhead record of the directory does not match the actual number of files in the directory.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

Action. Reexecute the command. If the error persists, the internal file count of the directory has been altered. Perform a Copy Directory (CD) command on the directory. The CD will produce a duplicate that should have the correct file count.

NONE ABSOLUTELY REFERENCED LINE HAS BEEN DELETED [T]

User Error. You entered an absolute line number (possibly as part of an expression), but the referenced line has been deleted.

Action. Retry the operation. Use the line numbers for existing lines or a relative line number.

NONE ACCESS NAME IS NOT A FILE. EDITOR HAS QUIT [T]

User Error. Your response to the FILE ACCESS NAME prompt refers to a device (DS02, LP01, and so on) instead of a file. The Text Editor has terminated the edit session.

Action. Retry the operation. Specify a valid file access name or leave the field blank.

410F ACU FAILURE — ABANDON CALL [C]
[CALL]

Equipment Failure. The abandon-call status bit was not in its expected state.

Action. Verify that the automatic call unit is operating correctly. Check that you specified a correct ACU CRU address during system generation.

410D ACU FAILURE — DATA LINE OCCUPIED [C]
[CALL]

Equipment Failure. The data-line-occupied status bit was not in its expected state.

Action. Verify that the automatic call unit is operating correctly. Check that you specified a correct ACU CRU address during system generation.

410E ACU FAILURE — DISTANT STATION BUSY [C]
[CALL]

Equipment Failure. The distant-station-busy status bit was not in its expected state.

Action. Verify that the automatic call unit is operating correctly. Check that you specified a correct ACU CRU address during system generation.

410C ACU FAILURE — POWER OFF [C]
[CALL]

Equipment Failure. Either power is not applied to the automatic call unit associated with the specified port, or the automatic call unit or the interface is defective.

Action. Verify that the automatic call unit is operating correctly. Check that you specified a correct ACU CRU address during system generation.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

4110 ACU FAILURE — PRESENT NEXT DIGIT [C]
[CALL]

Equipment Failure. The present-next-digit status bit was not in its expected state.

Action. Verify that the automatic call unit is operating correctly. Check that you specified a correct ACU CRU address during system generation.

NONE ALL CARRIAGE CONTROL FOUND WILL BE REMOVED [T]

User Error. As it displays a line or record within the file being edited, the Text Editor utility issues this message the first time that it finds a carriage control or a graphic character for your terminal. Carriage control and graphic characters are those with ASCII codes less than > 20.

Action. At the time this message appears, no changes have been made. Reselect the Execute Text Editor (XE) command or abort the edit. If you continue editing, the Text Editor will delete the carriage control characters from the line on which the cursor appears, and then shift the valid characters left to fill in for the deleted characters. The line is blank filled on the right. A line that has invalid characters removed is retained in the output file with the invalid characters unless you modify that line while it is displayed. After modification, the corresponding line in the output file will be as edited (without invalid characters).

NONE ALL OTHER ACTIVE TERMINALS AND TASKS MUST BE TERMINATED
[DCOPY]

User Error. DS01 cannot be used as the copy disk or as the master disk unless all terminals (except the one running DCOPY) are logged off.

Action. Execute the Quit command at all other active terminals. The directions recommend an initial program load (IPL) to ensure that the system is set up properly.

NONE ALPHANUMERIC ONLY (0 – 9, A – Z), ALPHA FIRST [C]
[CVD,DCOPY]

User Error. The volume name you entered does not conform to the requirements for a volume name. The first character of the name must be one of the 26 alphabetic characters from A through Z. The other seven characters must be alphabetic or numeric from 0 through 9 with trailing blanks but no embedded blanks. You cannot use special characters such as @, $, or #.

Action. Reenter the volume name with correct characters.

NONE APPEND COMPLETED [C]
[AF]

Informative Message. The AF utility completed the specified function correctly.

Action. Press the Command key to continue with the next function. Appendix A lists the key functions for various terminals.

NONE APPEND TERMINATED [C]
[AF]

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

Informative Message. You pressed the Command key prior to the normal completion of the Append File (AF) command. The operation in progress aborted.

Action. Press the Command key and enter the next function or reenter the AF command.

0001 ASCII CONVERSION ERROR [C]
[CKR,CKS,CSK]

System Error. This error occurs during binary to ASCII conversion of the number of records output to the sequential file in the Copy KIF to Sequential File (CKS) command.

Action. If this error occurs, the copy should have completed and only the message indicating the number of records copied is lost. If the problem persists, call your dealer or customer representative for software help.

0002 ASCII CONVERSION ERROR [C]
[CKR,CKS,CSK]

System Error. This error occurs during binary to ASCII conversion of the number of records output to the sequential file in the Copy KIF to Sequential File (CKS) command.

Action. If this error occurs, the copy should have completed and only the message indicating the number of records copied is lost. If the problem persists, call your dealer or customer representative for software help.

0003 ASCII CONVERSION ERROR [C]
[CKR,CKS,CSK]

System Error. This error occurs during binary to ASCII conversion of the number of records output to the sequential file in the Copy KIF to Sequential File (CKS) command.

Action. If this error occurs, the copy should have completed and only the message indicating the number of records copied is lost. If the problem persists, call your dealer or customer representative for software help.

0004 ASCII CONVERSION ERROR [C]
[CKR,CKS,CSK]

System Error. This error occurs during binary to ASCII conversion of the number of records output to the sequential file in the Copy KIF to Sequential File (CKS) command. Specifically, the field being converted is too long.

Action. If this error occurs, the copy should have completed and only the message indicating the number of records copied is lost. If the problem persists, call your dealer or customer representative for software help.

XX ASSIGN ERROR ON INPUT [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The utility generated error code XX while attempting to assign a logical unit to the pathname specified as the input.

Action. Find the error code XX for SVC opcode >00 in Table 4-2 and check the diskette utilities error codes for a further explanation of the action to take. Retry the command and enter the correct pathname.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXYY ASSIGN LUNO ERROR [C]
[RCD]

User Error. The utility generated an error when it attempted to assign a LUNO to the disk drive specified.

Action. Find error YY in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

00XX ASSIGN/OPEN PROGRAM FILE ERROR [C]
[MOE,MPE,MTE]

User Error. The command utility generated error XX when it attempted to assign or open the program file you specified.

Action. Check for typographical errors and ensure that the program file specified actually exists. See Table 4-2 for error code XX and apply that information to SVC opcode > 00 in Table 4-1.

NONE ASSUMED TX DISKETTE HAS AN INVALID SECTOR SIZE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The device containing the media being accessed has a sector size other than 128 bytes.

Action. Check the specified device name and reenter the command. Also, verify that the diskette is single sided, single density.

NONE ATTEMPT TO MODIFY AT ODD BYTE BOUNDARY [C]
[MAD,MADU,SAD,SADU]

User Error. You specified the FIRST WORD parameter as odd.

Action. Change the FIRST WORD parameter to even. Make sure that the address is correct.

NONE ATTEMPT TO MODIFY ODD BYTE [C]
[MRF]

User Error. If the FIRST WORD parameter you specified is odd, this error occurs.

Action. Change the FIRST WORD parameter to even. Make sure that the modified data is correct.

NONE ATTEMPT TO REPLACE INPUT FILE [T]

User Error. You responded NO to the REPLACE? prompt of the Quit Text Editor (QE) command, and your response to the OUTPUT FILE ACCESS NAME prompt is the same as your response to the INPUT FILE ACCESS NAME prompt.

Action. Execute QE again and specify another OUTPUT FILE ACCESS NAME, or respond with YES to the REPLACE? prompt.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE BAD ADU LIST OVERFLOW — FATAL [C]
[CVD]

System Error. The utility attempted to format the disk during execution, but the number of noncontiguous sections of bad ADUs exceeded the capacity of the bad ADU list.

Action. Use a disk pack with fewer bad ADUs, and resubmit the request.

NONE BAD ADU LIST RANGES OVERLAP — FATAL [C]
[CVD]

System Error/Hardware Error. During the format disk operation, the utility found overlapping ADUs in the bad track list generated by the system.

Action. Retry the operation. If the same error recurs, see *IPL the System* in Section 8. If the error still occurs, see *Check for Disk Problems* in Section 8. If the error persists, call your dealer or customer representative for software help.

NONE BAD ALLOCATION UNIT < #XXXX> [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Warning. The utility is reporting the numbers of the bad allocation units on the diskette.

Action. If you suspect the diskette is bad, decide whether to keep or to replace the diskette. See *Check for Disk Problems* in Section 8, or have your dealer or customer representative check the device.

NONE BAD CODE ON .BID [T]

User Error. The operation code passed to the Text Editor via the CODE value is not a recognized value. This happens only if the standard SCI command procedure is modified or if a non-standard SCI command procedure is used.

Action. See *Check the Command Procedure* in Section 8.

NONE BAD COMMAND [C]
[MVI]

User Error. When the Modify Volume Information (MVI) command prompted with COMMAND (L,C,S,Q)?, you responded with a character other than those listed.

Action. The prompt reappears after the error report, therefore enter one of the characters requested to continue operation.

0000 BAD DIRECTORY DETECTED, SAME AS FUTIL CRASH > 108 [C]
[MD]

User Error/System Error. The utility detected a directory that meets the criteria for an I/O SVC error code number > 90 or > 91.

Action. Construct a new directory and delete the old one. You can copy files individually to the new directory, or use the Modify File Name (MFN) command. If critical files are inaccessible, see *Check the Directory Structures* in Section 8 for the specified file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

21 BAD DISK NAME/DISK VOLUME NOT INSTALLED [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. This message has the same meaning as SVC error code > 21 with the same message, except that it applies to a diskette.

Action. Refer to error code > 21 for SVC opcode > 00 in Table 4-2.

NONE BD: < error message text>

Disregard the BD: preface to the error message. This table lists the text following the BD: alphabetically. Once you have found the error message, apply the description and recovery procedure to the Backup Directory (BD) command.

NONE BDD – *** ERROR 92E1 ***
[BDD]

System Error. The buffer used by the Backup Directory to Device (BDD) command to process error traces overflowed. This is not a critical error. If BDD encounters any data errors while backing up data, it may list only a partial pathname of any file that is damaged.

Action. Find the actual pathname of the file with the truncated pathname, then verify it's integrity.

NONE BDD – *** ERROR 92E2 ***
[BDD]

System Error. The system found an inconsistency in an internal data structure in a Backup Directory to Device (BDD) command.

Action. This is a critical error. Call your dealer or customer representative.

NONE BDD – *** ERROR 9320 ***
[BDD]

User Error/System Error. The system encountered an SVC error while initializing a Backup Directory to Device (BDD) command. The preceding error message that you received contains the SVC error code.

Action. Find the preceding error message that you received, and follow the instructions for that error in Table 4-2.

NONE BDD – *** ERROR 9321 ***
[BDD]

System Error. The data copied to the destination medium is not the same as the data from the source medium.

Action. Retry the Backup Directory to Device (BDD) command. If you still cannot perform the operation, attempt to recover your data from backup media.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE BDD – *** ERROR 9325 ***
[BDD]

User Error. No one has performed an Initialize New Volume (INV) command on the disk in question.

Action. Perform an INV command on the disk, then retry the operation.

NONE BDD – *** ERROR 9327 ***
[BDD]

User Error. The system encountered an SVC error while updating the partial bit maps or the volume information on the destination disk. The preceding error message that you received contains the SVC error code.

Action. Find the preceding error message that you received, and follow the instructions for that error in Table 4-2. This error is critical. You must perform an Initialize New Volume (INV) command on the destination disk before using it again.

NONE BDD – *** ERROR 9329 ***
[BDD]

Hardware Error. The Backup Directory to Device (BDD) command requested a reply to a message, and received an error attempting to read the reply. This error could indicate a problem with your terminal.

Action. See the listing device or file for the SVC error that occurred, then follow the instructions for that error in Table 4-2.

NONE BDD – *** ERROR 932A ***
[BDD]

System Error. One of the internal stacks of the Backup Directory to Device (BDD) command overflowed.

Action. This is a critical error. Call your dealer or customer representative.

DATE BEGIN FILE XFER FROM: ?3 TO ?4 [C]
[TFTPC]

Informative Message. This message does not report an error. It only indicates that the file transfer has been initiated. DATE refers to when you receive the message. The format for the date is:

YYDDD HHMM

YY are the last two digits of the year, DDD is the Julian day, HH is the hour, and MM is the minute that the message occurred.

When the transfer is complete, you should receive a FILE XFER ENDED message.

Action. None.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

3E BLOCK NUMBER IS OUT OF RANGE FOR DISK [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. This message has the same meaning as the SVC error code > 3E with the same message, except that it applies to a diskette.

Action. Refer to error code > 3E for SVC opcode > 00 in Table 4-2.

DATE BLOCK OUT OF SEQUENCE FROM PC [C]
[TFTPC]

System Error. This is a fatal error and the file transfer has been aborted. Interference or "noise" on the communication line could be responsible for the error, as could corrupted software. DATE represents the date of the error in the format:

YYDDD HHMM

YY are the last two digits of the year, DDD is the Julian day, HH is the hour, and MM is the minute that the error occurred.

Action. Retry the transfer. If the problem persists, try restoring the 931 emulator from your backup diskette. Refer to the *Model 931 Video Display Terminal Emulator Manual* for further help.

NONE CANNOT ASSIGN DEVICE [C]
[CVD,DCOPY]

User Error. Either the device you specified is not a valid device for the currently executing operating system, or the utility cannot open the device.

Action. Determine if the device was defined for the system during system generation. If not, use another device, or regenerate the system and define the device for the system. If the device is defined for the system, one of two problems exist:

- If the device is for the listing file, the device is probably assigned to another task. Release it and try again, or use another device.
- If the device is for the master or copy, verify that you specified the device as DSxx or MTxx. No other device is allowed. Refer to Volume II for legal device names.

NONE CANNOT CHANGE FIELD [C]
[MOE,MPE,MTE]

User Error. The utility cannot change the task, procedure, or overlay ID field.

Action. To change the ID field, reinstall the task, procedure, or overlay with the desired ID. Use the install task (IT), install procedure (IP), or install overlay (IO) utility, or copy using the Copy Program Image (CPI) command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE CANNOT GET ENOUGH MEMORY [C]
[LD]

System Error. Memory constraints limit the size of directories you can list to 3270 entries.

Action. If the error is caused by a directory with more than 3270 entries, you must divide the files in the directory into subdirectories in order to list them. If you know the directory contains fewer than 3270 entries, the Directory Overhead Record (DOR) is probably damaged. See *Check the Directory Structures* in Section 8 for the DOR.

NONE CANNOT GET MEMORY [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility is unable to get enough memory for the required function. It requires at most 65,504 bytes of user area.

Action. Regenerate a system requiring less static memory, or call your dealer or customer representative.

0001 CANNOT INITIALIZE OUTPUT FILE [C]
[Refer to Note 2 at the beginning of this table.]

User Error. The utility program produces some form of output. An attempt to open the output file or device failed.

Action. See *Check the Listing File or Device* in Section 8.

0100 CANNOT OBTAIN STATION INFORMATION [C]
[Refer to Note 2 at the beginning of this table.]

System Error. SCI990 maintains current information on all active stations. The utility attempted to identify the calling station and could not obtain the necessary information.

Action. Make sure that LUNOs 1, 2, or 3 assigned to the Terminal Communication Area (TCA) files have not been released, masked, or redefined. See *Check the TCA File* in Section 8.

0000 CANNOT OBTAIN TCA [C]
[MKF, MPF]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. See *Check the TCA File* in Section 8.

0100 CANNOT OBTAIN STATION INFORMATION [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. See *Check the TCA File* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE CANNOT TERMINATE SYSTEM LOG FORMATTER TASK
[CVD, DCOPY]

System Error. Either the DCOPY or the CVD utility is unable to delete the system log formatter task. This error can occur when copying the system disk.

Action. Perform an IPL and restart the operation.

NONE CANNOT USE INSTALLED DISK [C]
[CVD,DCOPY]

User Error. The copy routine will not copy to or from a disk drive that has a disk logically installed in it.

Action. Unload the disk in the drive using the Unload Volume (UV) command. Reenter the command.

XXXX CAN'T CREATE COMPLETE PATHNAME [C]
[MD]

User Error/System Error. This report is due to an error within the program, or to a pathname that is longer than the maximum length of 48 characters. See Volume I and Volume III for a discussion of pathnames.

Action. Check the pathname length including the volume name if the pathname specifies it. If you included VCATALOG in the pathname, omit it and retry the utility. Use the Modify Volume Information (MVI) or Modify File Name (MFN) commands to reduce the length of the directory and the file names. If the error persists, call your dealer or customer representative for software help.

NONE CAN'T GET #### BLOCKS OF MEMORY [C]
[CVD,DCOPY]

User Error/Hardware Error. The utility attempted to add #### 32-byte blocks of memory space to the Copy and Verify Disk (CVD) or Disk Copy/Restore (DCOPY) task area and failed. The physical memory size is insufficient to contain the DX10 operating system and the CVD or DCOPY task, plus the requested memory area. The physical memory may not be present in the system hardware configuration, memory failure in one or more components of the system may have reduced the available memory, or a custom built (generated) system may be too large to accommodate the memory requirements.

Action. See *Check the Available Memory Size* in Section 8, and correct the cause of the insufficient memory.

0000 CAN'T GET DIRECTORY NODES OPTION [C]
[MD]

System Error. An error occurred within the program or command procedure.

Action. See *Check the Command Procedure* in Section 8 for the correct PARMS line. If the error persists, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXXX CAN'T GET FILE MAP CODE [C]
[MKF,MPF]

System Error. An error occurred within the program or command procedure.

Action. See *Check the Command Procedure* in Section 8 for the correct PARMS line. If the error persists, call your dealer or customer representative.

NONE CAN'T GET MEMORY [C]
[MD]

System Error. Memory constraints limit the size of the directories that the utility can list to 3270 entries. Any directories with more cannot be listed.

Action. If the error is caused by a directory with more than 3270 entries, you must divide the files in the directory into subdirectories in order to list them. If you know the directory contains fewer than 3270 entries, the Directory Overhead Record (DOR) is probably damaged. See *Check the Directory Structures* in Section 8 for the DOR.

0000 CAN'T GET SHORT FORM OPTION [C]
[MD]

System Error. An error within the program or the command procedure, if the procedure is user-written.

Action. See *Check the Command Procedure* in Section 8 for the correct PARMS line. If the error persists, call your dealer or customer representative.

0000 CAN'T GET TCA
[MD]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

0000 CAN'T GET TOP LEVEL OPTION [C]
[MD]

System Error. An error within the program or the command procedure.

Action. See *Check the Command Procedure* in Section 8 for the correct PARMS line. If the error persists, call your dealer or customer representative.

0000 CAN'T INITIALIZE OUTPUT FILE [C]
[MD,MKF,MPF]

User Error. An attempt to open the output listing file or device failed.

Action. Enter a pathname of the list file or device that is available for listing. Verify that the device is valid and that it is online. See *Check the Listing File or Device* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXXX CAN'T SEPARATE LAST PATHNAME COMPONENT [C]
[MD]

System Error. An error occurred within the program.

Action. Call your dealer or customer representative.

XXXX CAN'T WRITE A HEADER LINE [C]
[MD]

System Error. This is an error on the listing, or an internal error where XXXX is an error code such as 0001, 0002, and so on.

Action. See *Check the Listing File or Device* in Section 8. If the error persists, call your dealer or customer representative.

NONE CD: < error message text>

Disregard the CD: preface to the error message. This table lists the text following the CD: alphabetically. Once you have found the error message, apply the description and recovery procedure to the Copy Directory (CD) command.

NONE CHANGE TO VDT MODE TO EDIT [T]

User Error. You issued the Initiate Text Editor (XE) command from a terminal that is in the TTY mode. The Text Editor does not support TTY mode at a terminal.

Action. Execute the Modify Terminal Status (MTS) command to change the mode to VDT, then execute the Quit (Q) command. Follow the start-up and log-in procedures defined in Volume II, and reenter the XE command.

PPQQ CHARACTER (NAME) PARAMETER EXPECTED [C]
[Refer to Note 2 at the beginning of this table.]

User Error. The utility expected the first character of a prompt input to be alphabetic and it was numeric or invalid. The error code PPQQ is interpreted as follows:

PP — the number of the parameter in the PARMS list which is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry using a valid input to the prompt.

0004 CHECKSUM ERROR [C]
[MPI,SPI]

User Error. If checksum data is entered, the utility computes the checksum for the new data (not the verification data) and compares it against the checksum that was entered. If the comparison fails, the checksum error report appears and modification will not take place.

Action. Make sure you are using the proper modification data, and reenter the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

4111 CIRCUIT ALREADY IN USE [C]
[CALL]

User Error. You have asked to dial, using a port that is already in use.

Action. Wait until the port is available and retry this port, or select another port that is not in use.

4107 CIRCUIT NOT ENABLED [C]
[ANS,CALL]

User Error. The port you specified is not in service.

Action. Use the MHPC command to place the port in service, or select another port and reenter the command.

00XX CLOSE/RELEASE PROGRAM FILE ERROR [C]
[MOE,MPE,MTE]

System Error. The utility generated error XX while performing a Close or a Release LUNO SVC.

Action. Check error code XX in Table 4-2 for the SVC opcode >00 in order to determine the nature of the error. If the problem persists, call your dealer or customer representative.

NONE COMMA MISSING IN CONTROL FILE [C]
[BD,CD,RD,VB,VC]

User Error. While processing a record of the control file, the command expected the next non-blank character to be a comma but it was not.

For example: INCLUDE BD CD should be INCLUDE BD, CD

Action. Correct the control file record and reinitiate the command.

NONE COMMAND ALLOWED ONLY WHILE TEXT EDITING [T]

User Error. The specified command is a Text Editor command allowed only after you activate the Text Editor.

Action. Use the Execute Text Editor (XE) command to begin an edit session and then retry the operation, or enter another command.

4102 CONNECTION UNSUCCESSFUL — ANSWERBACK [C]
[ANS,CALL]

User Error. The answerback received from the terminal does not match the answerback you entered. This error can also result when the terminal and computer have different speeds associated with the circuit.

Action. Verify that the correct terminal is connected. Verify the answerback associated with the terminal. If appropriate, enter an answerback at the terminal.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

4101 CONNECTION UNSUCCESSFUL — NO ANSWERBACK [C]
[ANS,CALL]

User Error. You entered an answerback value to be compared with the terminal answerback, but the terminal did not respond with an answerback. This error can also result when the terminal and computer have different speeds associated with the circuit.

Action. Verify that the correct terminal is connected. Verify the answerback associated with the terminal. If appropriate, enter an answerback at the terminal.

4108 CONNECTION UNSUCCESSFUL TIMEOUT [C]
[ANS]

User Error. No terminal was called into the specified port during the allowable time interval.

Action. Verify that the expected call is made, and try again.

NONE COPY COMPLETED [C]

Informative Message. The CC utility has completed the specified function correctly.

Action. Press the Command key to continue with the next function.

NONE COPY DISK FATAL ERROR [C]
[CVD,DCOPY]

Hardware Error. An attempt to execute the Store Registers command to disk has resulted in a fatal error.

Action. Reenter the command. If the failure reoccurs with the same error, the controller may be faulty. See *Check for Disk Problems* in Section 8.

NONE COPY DISK FORMAT ERROR [C]
[CVD]

User Error. The copy disk is not formatted.

Action. The system prompts you either to format the disk or not to. If you want to do so, type Y after the prompt. Otherwise, restart the Copy and Verify Disk (CVD) command or the Disk Copy/Restore (DCOPY) command using another volume as copy disk by answering N to prompt QUIT?, or terminate the command by answering Y to QUIT?.

NONE COPY DISK NOT 3.X FORMAT [C]
[CVD]

User Error. The copy disk has not been initialized using a DX10 3.X operating system.

Action. Select the initializing option of DCOPY by responding Y to the prompt FORMAT THIS DISK?, or respond N to the prompt and mount a volume that is correctly initialized. See Volume II of the DX10 manuals for more information on DCOPY.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE COPY DISK OFFLINE/NOT READY [C]
[CVD,DCOPY]

User Error. The copy disk drive is not ready.

Action. Ready the copy disk drive.

NONE COPY DISK, TRACK 0 OR 1 IS BAD — FATAL ERROR [C]
[CVD,DCOPY]

Hardware Error. The utility attempted to format track 0 or 1 of the copy disk and failed.

Action. Correct any hardware malfunctions (for example, clean the disk heads) and/or change the volume. If track 0 or 1 of a disk is bad, DX10 cannot use the disk.

NONE COPY TERMINATED [C]

Informative Message. You pressed the Command key and stopped the copy function prior to completion. The operation in progress is aborted.

Action. Press the Command key and enter the next function.

NONE COPY VOLUME NAME ERROR. SPECIFIED = < VNSPECIF> / ACTUAL =
< VNACTUAL> [C]
[CVD,DCOPY]

User Error. The actual volume name (VNACTUAL) on the disk does not match the name you specified (VNSPECIF) in response to the prompt COPY VOLUME.

Action. The name you specified will be the new volume name of the copy disk after the copy operation. If the specified name is not the name you want, answer N to the next two prompts. If the name you specified is correct and the correct volume is mounted, answer Y to the prompt USE NAMES AS TYPED? If the wrong volume is mounted, answer N and then answer Y to the prompt CHANGE VOLUMES. If you specified the wrong device, answer N to both prompts. This allows you to respecify the device and volume names.

NONE COULD NOT FIND ASSIGNED DISK LUNO
** SYSTEM ERROR — SUGGEST YOU IPL** [C]
[CVD,DCOPY]

System Error. A LUNO assigned to the disk has been lost from the system structure.

Action. Perform an initial program load (IPL) immediately. Since a LUNO has been lost from the system structure, it is possible that other LUNOs are pointing to incorrect areas and subsequent writes could destroy the system disk.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE CV – *** ERROR 9320 ***
[CV]

User Error/System Error. The system encountered an SVC error while initializing a Copy Volume (CV) command. The preceding error message that you received contains the SVC error code.

Action. Find the preceding error message that you received, and follow the instructions for that error in Table 4-2.

NONE CV – *** ERROR 9321 ***
[CV]

System Error. The data copied to the destination medium is not the same as the data from the source medium.

Action. Retry the Copy Volume (CV) command. If you still cannot perform the operation, attempt to recover your data from backup media.

NONE CV – *** ERROR 9322 ***
[CV]

System Error. The Copy Volume (CV) command found an inconsistency in a file's data structure on the source disk. The data in that file is probably no longer valid.

Action. Attempt to recover your data from backup media.

NONE CV – *** ERROR 9323 ***
[CV]

System Error. The system found a directory entry with an error in one of the following fields: physical record size, logical record size, or ADUs per block. The data in the file is probably no longer valid.

Action. Attempt to recover your data from backup media.

NONE CV – *** ERROR 9324 ***
[CV]

User Error. Your response to the VOLUME NAME prompt for the Copy Volume (CV) command does not match the volume name of the disk in the drive that you requested.

Action. Verify that you have the correct disk in the correct drive, then retry the operation.

NONE CV – *** ERROR 9325 ***
[CV]

User Error. No one has performed an Initialize New Volume (INV) command on the disk in question.

Action. Perform an INV command on the disk, then retry the operation.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE CV – *** ERROR 9326 ***
[CV]

User Error. The system encountered an SVC error while processing the Track 1 Loader on the destination disk. The preceding error message that you received contains the SVC error code.

Action. Find the preceding error message that you received, and follow the instructions for that error in Table 4-2.

NONE CV – *** ERROR 9327 ***
[CV]

User Error. The system encountered an SVC error while updating the partial bit maps or the volume information on the destination disk. The preceding error message that you received contains the SVC error code.

Action. Find the preceding error message that you received, and follow the instructions for that error in Table 4-2. This error is critical. You must perform an Initialize New Volume (INV) command on the destination disk before using it again.

NONE CV – *** ERROR 9328 ***
[CV]

User Error. You requested that the Copy Volume (CV) command terminate.

Action. If you terminated the command prematurely, retry the operation; otherwise, no error has occurred.

NONE CV – *** ERROR 9329 ***
[CV]

Hardware Error. The Copy Volume (CV) command requested a reply to a message, and received an error attempting to read the reply. This error could indicate a problem with your terminal.

Action. See the listing device for the SVC error that occurred, then follow the instructions for that error in Table 4-2.

NONE CV – *** ERROR 932A ***
[CV]

System Error. The internal stack of the Copy Volume (CV) command overflowed.

Action. This is a critical error. Call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE CV – *** ERROR 932B ***
[CV]

User Error. The destination disk for a Copy Volume (CV) command has no more free ADUs, and can hold no more data. Since the destination disk's data structures are in an uncertain state, that disk is unusable until an Initialize New Volume (INV) command is performed on it.

Action. The source disk contained more data than could fit on the destination disk. Only copy to a destination disk that can contain as much data as the source disk.

NONE CV – *** ERROR 932C ***
[CV]

Informative Message. The space available on the destination disk is too fragmented for any more files to be copied to it. The destination disk probably contains too many bad ADU ranges.

Action. Use a different disk.

NONE CV – *** ERROR 932D ***
[CV]

Informative Message. The destination disk contains too many bad ADU ranges, inconsistent file structures, or bad directory entries. The destination disk is now unusable until you perform an Initialize New Volume (INV) command on it.

Action. Take appropriate action for the specific errors you received prior to this error report.

NONE DATASET NAME NOT FOUND [C]
[IBMUTL]

System Error/User Error. The utility did not find the specified data-set name on the diskette.

Action. The program prompts for the data-set name again. Respond with the correct data-set name.

0001 DATE/TIME FORMATTING ERROR [C]
[SDT]

System Error. An internal buffer that contains a line of output overflowed, or a pointer to the current column in the buffer is too large.

Action. This is an internal error. Call your dealer or customer representative.

0002 DATE/TIME FORMATTING ERROR [C]
[SDT]

System Error. An internal call to open the output file has not occurred.

Action. This is an internal error. Call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE DELETED (PATHNAME) [C]
[DD]

Informative Message. Any file deleted by the utility in question is noted in the listing file with this message.

1E DELETED SECTOR DETECTED [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error. The hardware detected a hardware marked deleted sector. This error usually occurs with IBM formatted diskettes.

Action. You probably attempted to read an IBM formatted diskette with TXDX or DXTX. Use IBMUTL to read IBM formatted diskettes. Also, format a diskette with TXFD before you enter DXTX. If the diskette is formatted properly and this error occurs, the diskette is flawed. Use another diskette as your destination medium.

92E0 DESTINATION FILE NAME MUST HAVE EXACTLY TWO COMPONENTS
[BDD]

User Error. Your response to the DESTINATION FILE NAME prompt must adhere to the form: < volume name> .< file name> .

Action. Correct your response to the DESTINATION FILE NAME prompt so that it contains only a volume name and a file name component.

NONE DESTINATION IS NOT A DIRECTORY [C]
[BD,CD,RD,VB,VC]

User Error. The pathname you entered as a directory does not specify a directory.

Action. Reinitiate the command and enter the correct pathname for the directory you want to copy to.

NONE DESTINATION NOT A SEQUENTIAL MEDIUM [C]
[BD,CD,RD,VB,VC]

User Error. For the Backup Directory (BD) command, the destination must be a sequential file or a disk drive name.

Action. Reinitiate the command, and enter the correct sequential access name.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXYY DIRECT DISK I/O ERROR [C]
[CKD,MAD,MADU,RCD,SAD,SADU]

User Error/System Error. An error occurred when the command read from or wrote to the disk.

Action. Find error YY in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Also see *Check for Disk Problems* in Section 8.

NOTE

Direct disk I/O is not allowed; therefore, you cannot specify DS01, DS02, and similar notations as output devices. You must send output to a disk only to a file.

NONE DIRECTORY HAS BAD FILE COUNT [C]
[LD]

System Error. The internal file counts for the directory are incorrect.

Action. If you want to list the files in a directory, enter the Map Disk (MD) command. MD should respond with the same error, but it will list the directory also. To correct the directory, use the Copy Directory (CD) command to copy the old directory to the new directory. Then delete the old directory using the Delete Directory (DD) command.

NONE DISK I/O ERROR [C]
[LD]

Hardware Error. An error occurred when the List Directory (LD) command read the records of a directory.

Action. Reenter the command. Some of the disk's files will not be copied. You must recreate these files, or, if they have been backed up, copy them from the backup medium onto the new disk. If the error reoccurs, see *Check for Disk Problems* in Section 8.

NONE DISK NAMES NOT ALLOWED IN PATHNAMES [C]
[BD,CD,RD,VB,VC]

User Error. A pathname you gave begins with DSxx, where the xx is the disk drive's number. Legal device names are not allowed as pathnames in these commands.

Action. Replace DSxx with the disk's volume name.

NONE DISK NOT INITIALIZED
[DCOPY]

User Error. DCOPY cannot use the disk volume because it was not properly initialized.

Action. Perform an initialize new volume (INV) on the disk.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

15	DISK PARITY ERROR DETECTED DURING DISK TRANSFER [C] [DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF] *Hardware Error.* This message has the same meaning as the SVC error code > 15 with the same message, except that it applies to the diskette. *Action.* See error code > 15 in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1.
19	DISK UNIT IS NOT READY [C] [DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF] *Hardware Error.* This message has the same meaning as the SVC error code 19 with the same message, except that it applies to a diskette. *Action.* See error code > 19 in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1.
1A	DISK UNIT IS WRITE PROTECTED [C] [DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF] *Hardware Error.* This message has the same meaning as the SVC error code 1A with the same message, except that it applies to a diskette. *Action.* See error code > 1A in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1.
NONE	DISKETTE ACCESS ERROR nn [C] [IBMUTL] *System Error/User Error.* IBMUTL encountered an error while accessing the IBM data-set. *Action.* Refer to Table 4-2 for error code nn and apply that information to SVC opcode > 00 in Table 4-1. The program prompts for diskette drive. Respond according to individual error code.
NONE	DISKETTE DIRECTORY FULL [C] [IBMUTL] *User Error.* You exceeded the maximum number of data-sets allowable (19) per IBM formatted diskette. *Action.* The program prompts for the diskette drive. Install a new IBM format diskette and retry the transfer function.
NONE	DISKETTE NOT SINGLE DENSITY [C] [IBMUTL] *User Error.* The specified diskette is not single density. *Action.* Insert a single-density diskette in the drive. IBMUTL supports only single-sided, single-density diskettes.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE DISKETTE TO BE INITIALIZED IS CURRENTLY ASSIGNED TO ANOTHER USER [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. Another user is currently accessing the diskette you want to initialize.

Action. Check the device name you specified, check with other users, and reenter the command.

NONE DISKETTE UNUSABLE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Warning. There is a disk error in an allocation unit (0 – 5) that the system uses.

Action. Retry the operation with a new diskette, or one known to be good. If the error does not recur and you suspect the original diskette is bad, discard the original diskette. If the error recurs, see *Check for Disk Problems* in Section 8, or have the dealer or customer representative check the device.

NONE DON'T HAVE #### BLOCKS OF MEMORY [C]
[CVD,DCOPY]

Hardware Error. The amount of memory that the utility needs to do the copy/verify function is not available. The maximum amount of memory available has already been added by a get memory request and this area is less than that required to perform the function.

Action. Try to copy the disk without verifying the copy. If that fails, more physical memory is required. See the comments for the error message CAN'T GET #### BLOCKS OF MEMORY.

NONE DS01 USED AS OUTPUT — IPL REQUIRED
[CVD]

No Error Condition. During the process of copying, you used DS01 as the copy or master device. To ensure that the structures in memory reflect the data on the system disk, perform an initial program load (IPL). Under this condition, the utility forces a >177 crash to enforce the IPL requirement.

NONE DSxx IS OFF-LINE
[SVS]

User Error/Hardware Error. The disk unit is not available to the controller.

Action. Insert the disk pack into the drive unit and wait for the drive to show ready. If the drive does not show ready, it may be faulty and in need of service.

NONE DSxx IS OFF-LINE (BY USER OR OPERATOR COMMAND)
[SVS]

User Error. The specified unit has been set offline by a user or an operator command.

Action. Use another drive to install the volume, or determine why the device is offline.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE EDIT ALREADY IN PROGRESS FOR < filename> [T]

User Error. You attempted to edit a second file while you were already editing another file.

Action. Use the Quit Edit (QE) command to terminate the current edit session, or complete the current edit session and then enter the QE command. Then reenter the Execute Text Editor (XE) command and specify the file you want to edit in the FILE ACCESS NAME prompt.

NONE EITHER SOURCE OR DESTINATION MISSING [C]
[BD,CD,RD,VB,VC]

User Error. You did not specify a source and a destination directory, either from the original prompts, or from a MOVE directive before the utility encounters an INCLUDE or EXCLUDE directive in the control file.

Action. Correct the error and reinitiate the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE END ACTION TAKEN [C]
[AF,CC]

System Error. DX10 forced an end action on this program. Someone entered a Kill Task (KT) command or a Kill Task SVC for the program, or you have entered the hard break key sequence while the program was active at your terminal. (To perform the hard break key sequence, press the Attention key, release it, and hold down the Control key while you press the X key.)

Action. Attempt to locate and correct the cause of the error. See *IPL the System*. If the problem persists, call your dealer or customer representative.

NONE END COLUMN PAST RIGHT MARGIN [T]

User Error. The END COLUMN value you specified exceeds the right margin.

Action. Either retry the operation, specifying a new end column value, or adjust the right margin by using the Modify Right Margin (MRM) command.

NONE END LINE NO. LESS THAN START LINE NO. [T]

User Error. The utility issues this error report during the processing of a Copy Line or Move Line command if you specify a larger line number for the START LINE prompt than for the END LINE prompt.

Action. Reselect the command. Correct one or both of the expressions.

NONE END-OF-TAPE — Mount another tape before next rerun
[BDD]

Informative Message. The tape drive sensed an end-of-tape (EOT) marker just as the current backup completed.

Action. Mount a new tape before proceeding with the next backup.

00XX ERROR ASSIGNING LUNO TO DRIVE [C]
[SVS]

User Error/System Error. The utility encountered an error when it attempted to assign a LUNO to the drive containing the disk volume. The code XX is an error code returned by the Assign LUNO file utility routine.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. You possibly specified an invalid drive name.

XX ERROR ASSIGNING TO < accessname> [C]
[AF,CC]

User Error. Error XX occurred when the utility issued an SVC to assign a LUNO to the device or file name indicated.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

00XX ERROR ASSIGNING TO KIF [C]
[CKR,CKS,CSK]

User Error. The utility cannot assign a LUNO to the key indexed file you supplied.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Reissue the command after correcting the cause of the error.

00XX ERROR ASSIGNING TO SEQUENTIAL FILE [C]
[CKR,CKS,CSK]

User Error. The utility cannot assign a LUNO to the sequential file you supplied.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Reissue the command after correcting the cause of the error.

NONE ERROR ATTEMPTING TO ASSIGN LUNO [C]
[LD]

User Error. The directory you want to list does not exist.

Action. Reenter the command and specify the correct pathname. If the pathname is correct, see *Check the Directory Structures* in Section 8.

NONE ERROR ATTEMPTING TO CLOSE DIRECTORY FILE [C]
[LD]

System Error. The command failed in its attempt to close the directory file.

Action. Call your dealer or customer representative.

NONE ERROR ATTEMPTING TO GET PARAMETER x [C]
[CPI,MPI,SPI]

User Error/System Error. The Copy Program Image (CPI) command utility cannot get parameter x.

Action. See *Check the Command Procedure* in Section 8, then reissue the command.

NONE ERROR ATTEMPTING TO OPEN DIRECTORY FILE [C]
[LD]

System Error. The command failed to open a directory after assigning a LUNO to it.

Action. Refer to *Check for File Access Conflicts* in Section 8. If the error persists, call your dealer or customer representative.

NONE ERROR ATTEMPTING TO RELEASE LUNO [C]
[LD]

System Error. The command attempted to release a LUNO and failed. System structures in system memory are possibly damaged.

Action. Refer to *IPL the System* in Section 8. If the problem persists, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0000 ERROR: CANNOT FIND LUNO JUST OPENED [C]
[SVS]

System Error. The program was unable to find the logical device table (LDT) for the LUNO assigned to the drive containing the volume.

Action. Refer to *IPL the System* in Section 8. Call your dealer or customer representative.

NONE ERROR: CODE = < CCEE> [C]

User Error/Hardware Error/System Error. The utility has detected an error in an SVC.

Action. Refer to Table 4-2 for error code EE and SVC opcode CC.

XXXX ERROR CODE NOT IN TABLE [C]
[MD,MKF,MPF]

System Error. This is an internal or command procedure error.

Action. Refer to *Check the Command Procedure* in Section 8 for correct PARMS clause. If the error persists, call your dealer or customer representative.

XXXX ERROR ENCOUNTERED FROM S$PARM [C]
[MKL]

User Error/System Error. S$PARM returned the error code. The logging flag was not modified during the Modify KIF Logging (MKL) command.

Action. Refer to the appropriate SCI error code listed as:

**** ERROR < XXXX> ****

0001 ERROR FORMATTING OUTPUT [C]
[SVS]

System Error/User Error. An output routine returned an error.

Action. See *Check the Listing File or Device* for the output file. If the error persists, call your dealer or customer representative.

0002 ERROR FORMATTING OUTPUT [C]
[SVS]

System Error/User Error. An output routine returned an error.

Action. See *Check the Listing File or Device* for the output file. If the error persists, call your dealer or customer representative.

00XX ERROR FROM ASSIGN LUNO [C]
[MKL]

User Error/System Error. The utility attempted to assign a LUNO to the directory containing the key indexed file and failed.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. The KIF logging flag was not modified.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

00XX ERROR FROM OPEN [C]
[MKL]

User Error/System Error. The utility attempted to open the LUNO assigned to the directory containing the key indexed file and failed.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. The KIF logging flag was not modified.

DATE ERROR FROM PC : XX [C]
[TFTPC]

User Error/System Error. This is a fatal error and the file transfer has been aborted. DATE represents the date of the error in the format:

YYDDD HHMM

YY are the last two digits of the year, DDD is the Julian day, HH is the hour, and MM is the minute that the error occurred.

The Texas Instruments Professional Computer returned error code XX to the file transfer task. If the error code is in the range from 00 to 0F, the error is a disk error that you can find in the *Model 931 Video Display Terminal Emulator Manual.* The remaining error codes are:

1F — File already exists
20 — Bad sequence number on transmission block
21 — Too many retries

Action. Verify that the file you want to access is on the right diskette and that the diskette is not full. Also verify that no interference or "noise" exists on your communication line. Refer to the *Model 931 Video Display Terminal Emulator Manual* for further help.

00XX ERROR FROM READ [C]
[MKL]

User Error/System Error. The utility attempted to read a record from the directory containing the key indexed file and failed.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. The KIF logging flag was not modified.

NONE ERROR FROM S$CLOS [C]
[LD,LS]

System Error. The command cannot close the listing file.

Action. Look in the system log for disk errors resulting from deferred write errors. See *Check for Disk Problems.* If you need assistance, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ERROR FROM S$FMT [C]
[MS]

System Error. An error occurred when the utility set up the Modify Synonym (MS) prompting menu.

Action. Check if I/O was aborted on your terminal. If the error persists, call your dealer or customer representative.

NONE ERROR FROM S$GKEY [C]
[MS]

System Error. The utility encountered an error while processing your response to one of the prompts.

Action. Call your dealer or customer representative.

NONE ERROR FROM S$GTCA [C]
[LD,LS,MS]

User Error/System Error. Your responses to prompts are passed to utility programs via the disk file S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

NONE ERROR FROM S$IASC [C]
[LD,LS,MS]

System error. The utility could not convert a binary integer to ASCII.

Action. Call your dealer or customer representative.

NONE ERROR FROM S$MAPS [C]
[MS]

System error. The utility encountered this internal problem while getting a synonym value pair from the synonym table.

Action. Refer to *Check the TCA File* in Section 8. If you need assistance, call your dealer or customer representative.

NONE ERROR FROM S$OPEN [C]
[LD,LS]

User Error. The pathname you entered as the listing file cannot be opened with exclusive access.

Action. Make sure that the output device is a valid device and that it is online and available. If the output is going to a file, the utility autocreates the file, but any directory levels within the pathname must already exist. See *Check the Listing File or Device* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ERROR FROM S$PARM [C]
[LD,LS]

System Error. The List Directory (LD) or List Synonym (LS) command could not get a parameter from SCI.

Action. See *Check the Command Procedure* and *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

NONE ERROR FROM S$RTCA [C]
[LD,LS]

System Error. The utility attempted to release the Terminal Communication Area (TCA) file and failed.

Action. Refer to *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

NONE ERROR FROM S$SNCT [C]
[LS]

System Error. An internal problem occurred while processing the synonym table.

Action. Refer to *Check the TCA File.* If the error persists, call your dealer or customer representative.

NONE ERROR FROM S$WEOL [C]
[LD,LS]

System Error. The command cannot write to the listing file.

Action. Refer to *Check the Listing File or Device* in Section 8.

NOTE

The error that occurs when the LD command list is prematurely terminated by a device error, such as a line printer going offline, is related to the device error and is not an internal error.

NONE ERROR FROM S$WRIT [C]
[LD,LS]

System Error. While DX10 was building a record to be written to the listing file, an illegal operation was executed. This is an internal error.

Action. Call your dealer or customer representative.

00XX ERROR FROM WRITE [C]
[MKL]

User Error/System Error. The utility generated error code XX when it attempted to write to the directory that contains the key indexed file.

Action. Find the error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. The KIF logging flag was not modified.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

00XX ERROR GETTING FILE CHARACTERISTICS [C]
[CKR,CKS,CSK]

User Error/System Error. The command tried to get the key indexed file's characteristics and failed. This error may occur during an assign LUNO, open, or read of the directory which catalogues the key indexed file.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Reissue the command after correcting the error.

NONE ERROR GETTING PARAMETER [C]

User Error/System Error. The utility could not get a parameter from the PARMS clause of the .BID, .QBID, or .DBID primitive that you used to invoke the utility.

Action. See *Check the Command Procedure* and *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

NONE ERROR GETTING PARAMETER # x / x = 1,2, OR 3 [C]
[CKR,CKS,CSK]

User Error. The utility could not obtain parameter number 'x'.

Action. See *Check the Command Procedure* and *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

NONE ERROR GETTING THE TCA [C]
[CKR,CKS,CSK]

User Error/System Error. The utility attempted to open a LUNO to the TCA file, but failed. This message indicates that the system LUNOs and/or files are being released or modified.

Action. Enter the Quit (Q) command and log back on. If the error recurs, see *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

0002 ERROR IN ASSIGNING OR OPENING PROGRAM FILE [C]
[CPI,MPI,SPI]

System Error. The utility was unable to access the program file.

Action. Ensure that the file exists. If it does, see *Check for File Access Conflict* in Section 8. If the error persists, see *Check the Directory Structures* in Section 8 for the file.

XXXX ERROR IN FORMATTING DISPLAY [C]
[STS]

System Error. One of the routines that formats output returned this error. The XXXX represents an error code such as 0004 or 0006.

Action. See *Check the Listing File or Device* in Section 8. If the error persists, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ERROR IN GET SYSTEM POINTER TABLE ADDRESS SVC [C]

System Error. This is an internal error.

Action. See *IPL the System* in Section 8. Retry the command. If the error persists, call your dealer or customer representative.

0001 ERROR IN HEX CONVERSION [C]
[LLR]

System Error. This error occurs during binary to ASCII conversion of data for output. An internal buffer being used for output overflowed.

Action. Call your dealer or customer representative.

0002 ERROR IN HEX CONVERSION [C]
[LLR]

System Error. This error occurs during binary to ASCII conversion of data for output. An internal call to open the output file did not occur.

Action. Call your dealer or customer representative.

0003 ERROR IN HEX CONVERSION [C]
[LLR]

System Error. This error occurs during binary to ASCII conversion of data for output.

Action. Check that input parameters are correct. Call your dealer or customer representative.

0004 ERROR IN HEX CONVERSION [C]
[LLR]

System Error. This error occurs during binary to ASCII conversion of data for output. The field that the utility is converting is too long.

Action. Call your dealer or customer representative.

0008 ERROR IN I/O TO PROGRAM FILE [C]
[CPI,MPI,SPI]

User Error/System Error. The utility attempted to access a program file and the Read or Write SVC returned an error code.

Action. The most common cause of this error is a write-protected program file. Either use a Modify File Protection (MFP) command to unprotect the file, or use a different file. For the Modify Program Image (MPI) command, check to see if the disk is write-protected.

00XX ERROR IN MEMORY MANAGEMENT [C]
[MD]

System Error. The XX is an error code for SVC opcode > 13. The error occurred when the program tried to release memory.

Action. This error should not occur. Call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0004 ERROR IN OUTPUT [C]
[SIS]

User Error/System Error. This is an error found by the self-check function in the program.

Action. Make sure that the output device is a valid device and that it is online and available. If it is, see *Check the Listing File or Device* in Section 8. If the procedures there fail to correct the problem, call your dealer or customer representative.

4113 ERROR IN PARAMETER < NN> [C]
[MHPC]

User Error. Parameter NN is invalid.

Action. Correct parameter NN, and reenter the command.

0000 ERROR IN PATHNAME FOR LIST OUTPUT [C]
[MD,MKF,MPF]

User Error/System Error. Either the pathname you entered for the LISTING ACCESS NAME prompt has an error in it, or the system has an internal error.

Action. Verify that the pathname you entered is correct and reinitialize the command. Refer to *Check the Listing File or Device* in Section 8. If the error persists, call your dealer or customer representative.

0000 ERROR IN PATHNAME TO MAP [C]
[MD]

User Error. The pathname you entered for the PATHNAME prompt has an error in it.

Action. See *Check the Command Procedure* in Section 8 for the PARMS clause. Also see *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

XXXX ERROR IN RECORD NUMBER CALCULATION [C]
[LLR]

System Error. The utility generated error XXXX during an internal call to S$IADD or S$ISUB while performing 32-bit addition to compute record numbers.

Action. Check that parameters for record numbers are valid. Refer to the SCI error codes for further explanation. If the error recurs, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0001 ERROR IN WRITING TO OUTPUT BUFFER [C]
[MAD,MADU,SAD,SADU]

User Error/System Error. One of the routines that format output generated this error. An internal buffer that contains a line of output overflowed, or a pointer to the current column in the buffer is too large.

Action. Ensure that the input parameters are correct, the input file exists, and the input file is of the correct type. See *Check the Command Procedure* in Section 8 for the correct PARMS clause. Also refer to *Check the Listing File or Device* in Section 8.

NOTE

Direct disk I/O is not allowed; therefore, you cannot specify DS01, DS02, and similar notations as an output device. Output to a disk can only go to a file.

0002 ERROR IN WRITING TO OUTPUT BUFFER [C]
[LLR,MAD,MADU,SAD,SADU]

User Error/System Error. One of the routines that formats output generated this error. An internal buffer that contains a line of output overflowed, or a pointer to the current column in the buffer is too large.

Action. Ensure that the input parameters are correct, that the file exists and that it is of the correct type. See *Check the Command Procedure* in Section 8 for the correct PARMS clause.

NOTE

Direct disk I/O is not allowed; therefore, you cannot specify DS01, DS02, and similar notations as an output device. Output to a disk can only go to a file.

See *Check the Listing File or Device* in Section 8.

0001 ERROR INITIALIZING INPUT
[SVS]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ERROR: INVALID DATA IN TEXT FILE [T]

User Error. You issued a Recover Edit (RE) command that the utility cannot complete. One of the editor work files (the text file) contains invalid data.

Action. Reenter the Recover Edit (RE) command. If the error recurs, abandon efforts to recover the edit. This problem can indicate errors in the disk file structure. The changes you made in that edit session are probably lost.

NOTE

CFKEY sequence errors can occur under the following conditions:

1. In batch mode, when you omit one or more commands.
2. In batch mode, when you enter an invalid sequence, subsequent CFKEY commands will be in error even if they are otherwise correct. For example, the following sequence will exhibit errors on statements b, c, d, and e even though the sequence c, d, e is correct:
   a. CFKEY
   b. ENDKEY
   c. CFKEY
   d. KEY
   e. ENDKEY
3. In interactive mode, when you do not enter KEY or ENDKEY explicitly (they are called automatically). If you abort CFKEY using the Command key, the next CFKEY command will get a CFKEY BEFORE ENDKEY error, but subsequent CFKEYs will operate correctly.

NONE ERROR: INVALID CFKEY SEQUENCE; CFKEY BEFORE ENDKEY — RETRY CFKEY [C]

User Error. You invoked and aborted the Create Key Indexed File (CFKEY) command before the ENDKEY command completed.

Action. See the preceding note. Delete the error and try again. The error can be deleted by performing a CFKEY and allowing the error to occur. When the error is deleted, the system is reset and subsequent CFKEYs will be successful.

NONE ERROR: INVALID CFKEY SEQUENCE; ENDKEY BEFORE CFKEY [C]

User Error. You made one of two errors. Possibly you failed to include a KEY in the CFKEY sequence. At least one KEY, the primary, is required. Or you entered ENDKEY before its corresponding CFKEY command. The required sequence of commands is CFKEY, KEY, and ENDKEY.

Action. Refer to the preceding note. Restart the CFKEY sequence.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE ERROR: INVALID CFKEY SEQUENCE; KEY BEFORE CFKEY [C]

User Error. KEY command must follow CFKEY command.

Action. See the preceding note. Reinitiate the CFKEY sequence. The required sequence is: CFKEY, KEY, ENDKEY.

00XX ERROR IS A SYSTEM ERROR [C]
[BD,CD,RD,VB,VC]

User Error. The XX is an error code received from SVC opcode > 00. For example: XX equals 27 if you enter the pathname of a nonexistent file, either through a MOVE directive or from the prompting menu.

Action. Look up error code XX in Table 4-2, and apply that information to SVC opcode > 00. Then correct the error, and reinitiate the command.

00XX ERROR MAPPING NAME TO ID [C]
[MOE,MPE,MTE]

User Error. An error occurred when the utility executed a MAP NAME TO ID SVC (SVC opcode > 31). This usually indicates that there is no task with the name specified.

Action. Check that you are using the correct name. Otherwise, refer to the SVC error codes (Table 4-2) to determine the nature of error XX.

XXXX ERROR OBTAINING DRIVE PARAMETER [C]
[SVS]

User Error/System Error. The program could not obtain the valid name of a disk drive. The possible values of XXXX, and the suggested response, are the same as for the following error report, with the word VOLUME replaced by DRIVE.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXXX ERROR OBTAINING VOLUME PARAMETER [C]
[SVS]

User Error/System Error. The severity of the error depends on the code XXXX. Possible values of XXXX are:

0001 — You specified more than one volume name in response to the VOLUME NAME prompt.

Action. See *Check the Command Procedure* in Section 8.

0002 — You entered an illegal type of parameter for the volume name.

Action. See *Check the Command Procedure* in Section 8.

0003 — You did not specify a required parameter. You must enter a volume name or drive name.

Action. Retry the command specifying either a volume name or a drive name.

XX04 — You entered a parameter that exceeds the maximum number of characters allowed for string parameters.

Action. Retry the command, checking that the name does not have too many characters.

0005 — An internal call to open the TCA file did not occur.This is an internal system error.

Action. Call your dealer or customer representative.

XXYY ERROR OCCURRED IN SVC BLOCK [C]
[CPI,MPI,SPI]

User Error/System Error. The specified error, YY, occurred when the utility executed the specified SVC opcode, XX.

Action. Find error code YY in Table 4-2, and apply that information to SVC opcode XX in Table 4-1. Correct the error, then reissue the command. If the error persists, call your dealer or customer representative for software help.

XXXX ERROR ON ASCII CONVERSION [C]
[AF,CC]

System Error. The utility encountered an ASCII conversion error while trying to convert the time, date, or the page number to a printable form.

Action. This is an internal error. Call your dealer or customer representative.

XX ERROR ON CLOSE TO < accessname> [C]
[AF,CC]

User Error. The utility encountered error XX when it issued an SVC to close the device or file indicated by < accessname> .

Action. Take the corrective action indicated by the error code XX in Table 4-2. SVC opcode > 00 in Table 4-1 returned the error.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XX ERROR ON CLOSE/EOF TO < accessname> [C]
[AF,CC]

User Error. The utility encountered error XX when it issued an SVC to do a close with end-of-file (EOF) on the device or file indicated by < accessname> .

Action. Take the corrective action indicated by the error code XX in Table 4-2. SVC opcode > 00 in Table 4-1 returned the error.

0001 ERROR ON GET PARAMETER [C]
[AF,CC]

User Error. You specified a parameter as a list, and a list parameter is not allowed.

Action. Make sure that lists are allowed, or correct the parameter. See *Check the Command Procedure* in Section 8.

0002 ERROR ON GET PARAMETER [C]
[AF,CC]

User Error. You specified a parameter other than an integer, string, or YES/NO.

Action. Check the parameters you are using, correct the incorrect one, and reenter the command. See *Check the Command Procedure* in Section 8.

0003 ERROR ON GET PARAMETER [C]
[AF,CC]

User Error. You failed to specify at least one of the necessary parameters by skipping through a required field.

Action. Make sure that you specify all the required parameters. Refer to *Check the Command Procedure* in Section 8.

0004 ERROR ON GET PARAMETER [C]
[AF,CC]

User Error. One of the parameters you specified is too long.

Action. Check that an integer variable is not out of range or that a string variable does not have too many characters. See *Check the Command Procedure* in Section 8.

0005 ERROR ON GET PARAMETER [C]
[AF,CC]

User Error/System Error. An internal call to open the Terminal Communication Area (TCA) has not occurred.

Action. See *Check the Command Procedure* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0001 ERROR ON GET TCA
[AF,CC]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

XXXX ERROR ON GET TERMINAL STATUS [C]
[AF,CC]

System Error. SCI maintains current information on your station or terminal. The utility attempted to identify the calling station and could not obtain the necessary information.

Action. Call your dealer or customer representative.

XX ERROR ON GETTING MEMORY [C]
[AF,CC]

User Error. Input and output buffers are dynamically allocated using Get Memory SVCs. The SVC returned error XX when the utility issued it in order to get the necessary input/output buffers.

Action. The maximum record size specified (or the default size of 512 words) made the program too large for the current hardware configuration. Specify a smaller maximum record size. Refer to Get Memory SVC (> 12) errors in Table 4-2 for more information. Also see *Check the Available Memory Size* in Section 8.

XXYY ERROR ON I/O ON FILE [C]
[MD]

User Error/System Error. The utility encountered an error when it issued an I/O SVC. The XX is an SVC opcode and the YY is an error code.

Action. Locate error code YY in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1.

XXXX ERROR ON I/O TO FILE [C]
[MKF,MDF]

System Error. An error occurred during I/O to the list file.

Action. Make certain that the output or list device or file is online and in a state to accept output. See *Check the Listing File or Device* then try again.

XX ERROR ON OPEN TO < accessname> [C]
[AF,CC]

User Error. Error XX occurred when the utility issued an SVC to open the device or file indicated by < accessname> .

Action. Refer to error code XX in Table 4-2. SVC opcode > 00 in Table 4-1 returned the error.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXXX ERROR ON PARAMETER SPLIT [C]
[AF,CC]

User Error. The standard SCI command procedures cannot produce this error. A modified command procedure either contains a parameter more than 50 characters in length, or has an open set of parentheses.

Action. See *Check the Command Procedure* in Section 8 then reenter the command using the proper prompt input format.

0000 ERROR ON PATHNAME TO MAP [C]
[MKF,MPF]

System Error. Same as ERROR IN PATHNAME TO MAP.

NONE ERROR < XX> ON READ TO TAPE:
FIX TAPE X
MOUNT TAPE
TYPE $ TO QUIT, Y TO CONTINUE [C]
[BD,CD,RD,VB,VC]

System Error/User Error. An error occurred as the utility tried to read a tape that was mounted after the utility received an end-of-tape message.

Action. To continue: Remount or fix depending on the error message received. Type 'Y' when the tape is ready. To quit: Type '$' to terminate command.

XXXX ERROR ON SYNONYM SUBSTITUTION [C]
[AF,CC]

User Error/System Error. An attempt was made to perform synonym substitution on the pathname from the prompt input. Internal program buffers are set up to hold more than the maximum length allowable for a pathname. If synonym substitution cannot be done in the buffer allocated, the pathname obtained by synonym substitution is invalid.

Action. Correct the synonyms and retry. See *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative for software help.

NONE ERROR < XX> ON WRITE TO TAPE:
FIX TAPE X
MOUNT TAPE
TYPE $ TO QUIT, Y TO CONTINUE [C]
[BD,CD,RD,VB,VC]

System Error/User Error. The utility received an error when it tried to write to a tape that was mounted after the utility received an end-of-tape message.

Action. To continue: Remount or fix depending on the error message received. Type 'Y' when the tape is ready. To quit: Type '$' to terminate command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

00XX ERROR OPENING KIF [C]
[CKR,CKS,CSK]

User Error/System Error. SVC opcode > 00 returned error code XX when the key indexed file was opened.

Action. Take the corrective action indicated by the error code XX in Table 4-2. Then reissue the command.

00XX ERROR OPENING LUNO TO DRIVE [C]
[SVS]

User Error/System Error. The utility attempted to open the LUNO assigned to the disk drive containing the volume, but failed. The code XX is an error code returned by the Open LUNO I/O supervisor call.

Action. Look up the error code XX in Table 4-2 and apply the information there to SVC opcode > 00 in Table 4-1.

0001 ERROR OPENING OUTPUT FILE [C]
[MRF,SRF]

User Error. The utility attempted to open the output file or device, and failed.

Action. See *Check the Listing File or Device* in Section 8 for the specific output file. Make sure that the output device is a valid device and that it is online and available.

0002 ERROR OPENING OUTPUT FILE [C]
[MRF,SRF]

System Error/User Error. The utility attempted to open the output file or device and failed.

Action. The maximum record length specified by the program is greater than 136 or less than one. Call your dealer or customer representative.

00XX ERROR OPENING SEQUENTIAL FILE [C]
[CKR,CKS,CSK]

User Error/System Error. The utility encountered error XX when it attempted to open the sequential file.

Action. Find error code XX in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1. Reissue the command after correcting the error.

0001 ERROR OPENING TERMINAL LOCAL FILE [C]
[CKR,CKS,CSK]

System Error. The utility program writes the number of records copied to the sequential file. The attempt to open the Terminal Local File (TLF) failed.

Action. Since this failure occurs only when writing the number of records copied, the sequential file should be intact. However, verify that the TLF has not been destroyed.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0002 ERROR OPENING TERMINAL LOCAL FILE [C]
[CKR,CKS,CSK]

System Error. The utility program writes the number of records copied to the sequential file. The attempt to open the Terminal Local File (TLF) failed.

Action. Since this failure occurs only when writing the number of records copied, the sequential file should be intact. However, the maximum record length specified by the program was greater than 136 or less than one, indicating an internal error. Call your dealer or customer representative.

XX ERROR READING FROM < accessname> [C]
[AF,CC]

User Error/Device Error. The Read SVC generated error XX while attempting to read a record from the device or file indicated by < accessname> .

Action. Look up error code XX in Table 4-2 and apply that information to the Read SVC in Table 4-1.

00XX ERROR READING FROM DRIVE [C]
[SVS]

User Error/System Error. The Read Direct I/O SVC returned error code XX when the utility attempted to read from the volume.

Action. Look up the error code XX in Table 4-2 and apply the report there to the I/O SVC, opcode > 00 from Table 4-1.

NONE ERROR READING NAME ENTRY [C]
[CPI,MPI,SPI]

System Error. The utility tried to read the name entry record of the program file, but failed.

Action. Manually inspect the record using the Show Relative to File (SRF) command. If the record is intact, retry the command. If the error continues to occur, you may need to rebuild the file.

00XX ERROR READING PROGRAM FILE [C]
[MOE,MPE,MTE]

User Hardware Error. The utility encountered an error while attempting to read the program file.

Action. Refer to Table 4-2 for error code XX. See *Check for Disk Problems* in Section 8.

00XX ERROR RECEIVED [C]
[DD]

User Error/System Error. The utility possibly issued an Assign, Open, Close, or Read SVC which then encountered an error. Or you may have attempted to delete a file that is delete protected or has a LUNO attached to it.

Action. Refer to error code XX in Table 4-2 and follow the instructions there. Then you can issue a Delete File (DF) command or a Delete Directory (DD) command to delete the specified file or directory.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XX ERROR RELEASING < accessname> [C]
[AF,CC]

System Error. The Release LUNO SVC generated error XX when it tried to release the LUNO assigned to the device or file specified by < accessname> .

Action. Refer to error code XX in Table 4-2.

XX ERROR RELEASING MEMORY [C]
[AF,CC]

System Error. The utility issued an SVC to release the utilities buffer areas back to the system, but the SVC generated error code XX.

Action. This is an internal error. Call your dealer or customer representative.

NONE ERROR: VOLUME NOT INSTALLED [C]
[SVS]

User Error. No volume by the name you specified is currently installed on the system.

Action. Retry the command, verifying that you have entered the proper volume name. If you do not know the volume name, specify the drive name.

NONE ERROR WHILE ATTEMPTING TO RELEASE MEMORY [C]
[LD]

System Error. The utility could not return the memory it acquired back to the system.

Action. Attempt the List Directory (LD) command again. If the same error occurs, call your dealer or customer representative.

NONE ERROR WHILE WRITING TO THE LISTING FILE [C]
[CKR,CKS,CSK]

User Error/System Error. The utility encountered an error when it attempted to write to the listing file.

Action. If the listing file is a device, check to insure that the device is available. Also check to see if the file is write protected and that it is valid.

NOTE

If Xs appear where an error code usually appears, the utility cannot convert the binary error code to ASCII. A bug exists in the utility. Call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XX ERROR WRITING TO < accessname> [C]
[AF,CC]

User Error/Device Error. The utility issued a Write SVC to the device or file < accessname> . The SVC generated error XX.

Action. Find error code XX in Table 4-2 and follow the instructions there.

NONE ERROR WRITING TO OUTPUT ACCESS NAME [C]
[RCRU,WCRU]

User Error. You responded to the OUTPUT ACCESS NAME prompt illegally.

Action. Respecify the output access name.

0003 ERROR WRITING TO OUTPUT BUFFER [C]
[LLR]

User Error/System Error. The utility detected an error while writing to the listing file or device. The most likely causes are a line printer is offline, a directory is full, a disk is full, or you aborted the output of the utility at a terminal.

Action. See *Check the Listing File or Device* in Section 8. Press the Return key to enter another command. If the error persists, call your dealer or customer representative for software help.

0001 ERROR WRITING TO OUTPUT FILE [C]
[MRF,SRF]

System Error. One of the routines that format output generated this error. Specifically, an internal buffer that contains a line of output overflowed, or a pointer to the current column in the buffer is too large.

Action. See *Check the Listing File or Device* in Section 8. If the problem persists, call your dealer or customer representative.

0002 ERROR WRITING TO OUTPUT FILE [C]
[MRF,SRF]

System Error. One of the routines that format output generated this error. Specifically, an internal call to open the output file has not occurred.

Action. See *Check the Listing File or Device* in Section 8. If the problem persists, call your dealer or customer representative.

00XX ERROR WRITING TO PROGRAM FILE [C]
[MOE,MPE,MTE]

User Error/Hardware Error. An I/O error occurred when the utility attempted to write to a program file.

Action. Check to see if the disk drive and the program file are write-protected. See Table 4-2 for error XX for SVC opcode > 00, and apply that information to the program file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0XX ERROR WRITING TO SEQUENTIAL FILE [C]
[CKR,CKS,CSK]

User Error/System Error. The utility returned error code XX when you were writing to the sequential file.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Reissue the command after correcting the error.

XXXX ERROR WRITING TO TERMINAL LOCAL FILE [C]
[CKR,CKS,CSK]

System Error. One of the routines that format output generated error XXXX. The report occurs when the routine formats the message informing you how many records were written to the sequential file in CKS.

Action. No action is necessary. This error has no effect on the copy. If this error occurs, the desired sequential file should be complete, but the record count will not be printed. See *Check the Listing File or Device* in Section 8 for the TLF. If the error persists, call your dealer or customer representative.

NONE ERRORS ENCOUNTERED ON BACKUP MEDIUM — FILE NOT RESTORED
[RD,VB]

Hardware Error. A disk error occurred when you backed up a file. The Backup Directory (BD) command flagged the file as being nonrestorable, and the utility did not restore the file. (This error report occurs only in a listing file and will not appear on your screen.)

Action. Call your dealer or customer representative.

NONE ERRORS ENCOUNTERED ON BACKUP MEDIUM — REMAINING TASKS NOT RESTORED
[RD,VB]

Hardware Error. When you backed up this program file, a disk error occurred. The command restored the preceding tasks, but did not restore those not listed, nor did it restore the file. (This error report occurs only in a listing file and does not appear on your screen.)

Action. Call your dealer or customer representative.

NONE FATAL I/O ERROR [C]
[IBMUTL]

System Error. The utility encountered a fatal read/write error. IBMUTL is terminated.

Action. Try to execute IBMUTL again, and/or try another diskette. See *Check for Disk Problems* in Section 8 if the problem possibly involves writing to or reading from the DX10 file.

NONE FILE ALREADY EXISTS [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The file with the given pathname already exists, and you did not specify the REPLACE option.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

Action. Retry the command, and either use a different pathname for the output file, or enter YES for the REPLACE option.

26 FILE ALREADY EXISTS [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. This message has the same meaning as SVC error code > 26 with the same message, except that it applies to a diskette.

Action. See error code > 26 in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

NONE FILE DIRECTORY EMPTY [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Information Message. The file directory for the diskette is empty.

Action. Take no action if the diskette is truly without any files on it. If the diskette does have files on it, suspect a hardware error. Check the device for errors or have the dealer or customer representative check it.

3F FILE DIRECTORY FULL [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The file directory on the diskette is full.

Action. Install a different diskette in the device and retry the command, or delete a file on the diskette and retry the command. If you suspect that the diskette structures are damaged, rebuild the diskette.

FFFF FILE EXISTS AND REPLACE NOT SPECIFIED [C]
[CKR,CKS,CSK]

User Error. The output file exists and you did not specify the REPLACE parameter.

Action. If you want to replace the file, answer YES to the REPLACE parameter. If not, name another file for the output.

0001 FILE INITIALIZATION FAILED
[AT,CKR,CKS,CSK]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

NONE FILE NAME SYNTAX ERROR [C]
[MVI]

User Error. The syntax of a changed file name is illegal; for example, you entered S.LOADER for .S$LOADER.

Action. Correct the syntax error. Since an I/O error also occurs, the command terminates. You must reinstate the Modify Volume Information (MVI) command to continue modifying the volume information.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0000 FILE NOT REQUESTED TYPE [C]
[MKF,MPF]

User Error. The file being mapped is not of the correct type; that is, it is not a key file if an MKF is being attempted, or it is not a program file if an MPF is being attempted.

Action. Correct the pathname of the file being mapped or use another type of map command.

NONE FILE RENAME FAILED, I/O ERROR NO. < 00XX> [T]

User Error. The Text Editor utility issues this error report while processing the Quit Editor (QE) command when the temporary file consisting of input file data, as modified by the edit session, cannot be converted to a permanent file of the name specified in the OUTPUT FILE ACCESS NAME prompt. The usual cause is that you responded NO to the REPLACE prompt, and the file you named already exists. Possibly you specified a write-protected file or a write-protected disk.

Action. Check the error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Correct the condition and reissue the QE command.

nn FILE SERVICE ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error/System Error. The utility encountered error nn while accessing a TX990 user file. Code nn represents the condition of the TX990 diskette.

Action. Find error code nn in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

NONE FILE SERVICE ERROR nn [C]
[IBMUTL]

System Error/User Error. The utility encountered error nn while accessing DX10 user files.

Action. The program returns to the DISKETTE DRIVE prompt. Find error code nn in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

DATE FILE XFER ENDED. RETRIES = ?3 RATE(BPS) = ?4 [C]
[TFTPC]

Informative Message. This message does not report an error. It only indicates that the file transfer completed successfully. The effective transfer rate and the number of block retries is shown in the message. DATE refers to when you receive the message. The format for the date is:

YYDDD HHMM

YY are the last two digits of the year, DDD is the Julian day, HH is the hour, and MM is the minute that the message occurred.

Action. None.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

nn FLOPPY DISK ACCESS ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error/System Error. The utility encountered error nn while accessing the IBM data-set. Code nn represents the condition of the IBM format disk.

Action. Find error code nn in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

XXYY FORMAT ERROR [C]
[CKD,RCD]

System Error. The utility formats Track 0 before rewriting it. One of the routines that formats output generated the error. An internal buffer that contains a line of output has overflowed, a pointer to the current column in the buffer is too large, or an internal call to open the output file has not occurred.

Action. Call your dealer or customer representative.

12 GAP ERROR DETECTED DURING DISK TRANSFER [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error. This message has the same meaning as SVC error code > 12 with the same message, except that it applies to a diskette.

Action. Find error code > 12 in Table 4-2 and apply the information there to SVC opcode > 00 in Table 4-1.

XXYY GET DATE/TIME SVC ERROR [C]
[SDT]

System Error. The SVC issued by the utility could not obtain the date and time.

Action. Retry the Show Date and Time (SDT) command. Refer to Table 4-2 for error code YY and apply that information to SVC opcode > 03. If the problem persists, call your dealer or customer representative.

00XX GET MEMORY ERROR [C]
[CKR,CKS,CSK]

User Error/System Error. A Get Memory SVC (> 12) operation returned this error code. The utility requires twice the physical record length of the key indexed file for buffer space.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 12 in Table 4-1.

NONE GET TCA ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility cannot get the Terminal Communication Area (TCA) file, which has the parameters being passed to the utility.

Action. See *Check the TCA File* in Section 8. If the error persists, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE IBM DISKETTE IS FULL [C]
[IBMUTL]

Informative Message. Data capacity of IBM format diskette has been reached. The last file is labelled as an empty data-set and transfer is terminated.

Action. The program returns to the DISKETTE DRIVE prompt. Install a new IBM format diskette or delete a data-set and retry the transfer function.

NONE ID OUT OF RANGE [C]
[CPI,MOE,MPE,MPI,MTE,SPI]

User Error. The ID you gave exceeds the maximum value permitted for a given type (task, procedure, or overlay) of the image on the program file.

Action. Use the Modify Program File (MPF) command to check the values given for the image type in the program file. Correct the ID given to the program and retry the utility.

NONE ID TOO LARGE [C]
[BD,CD,CPI,MPI,RD,SPI,VB,VC]

User Error. Either a task, procedure, or overlay exists in the source with an ID larger than the maximum ID specified in the destination program file, or the ID you specified is too large.

Action. For the first condition, if you need the tasks, procedures, or overlays noted, either recreate the destination with larger values or allow the task (CD, RD) to create the destination. For the second condition, be sure you specify the correct program file and make sure that the ID exists by executing a Modify Program File (MPF) command. Correct the error, and reissue the original command.

11 ID WORD ERROR DURING DISK TRANSFER [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error. This message has the same meaning as SVC >00 error code >11 with the same message, except that it applies to a diskette.

Action. See error code >11 in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

NONE IDS – BAD SYNTAX IN BAD TRACK INPUT [C]
[IDS,INV]

User Error. One of two situations exists. Either the information you specified when prompted for the bad track information is incorrect, or the file you specified for bad track information has incorrect data.

Action. Verify that any bad track information follows this format:

HEAD, CYLINDER; HEAD, CYLINDER; (and so on...)

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE IDS – BAD TRACK ACCESS NAME CANNOT BE AN INTERACTIVE DEVICE [C] [IDS]

User Error. Interactive bad track input to the INV command is not allowed. Mapped bad tracks may inadvertently be marked for avoidance by routinely entering the list of known bad tracks to the Initialize New Volume (INV) command.

Action. If you want the bad tracks mapped and your disk supports this, then perform an Initialize Disk Surface (IDS) command on your disk. If your disk does not support bad track mapping or you want the bad tracks avoided, put the bad track list in a file and use the file pathname for the bad track access name.

NONE IDS – BAD TRACK LIST CANNOT BE DELETED OR RESTORED [C] [IDS]

User Error. Either the disk needs to be formatted and analyzed, or it has had a partial surface analysis that was not completed.

Action. Perform an Initialize Disk Surface (IDS) command on the disk, or restart the suspended surface analysis and allow it to complete. This action insures that the disk has been formatted and analyzed.

NONE IDS – BAD TRACK LIST CANNOT BE RESTORED [C] [IDS,INV]

User Error. You attempted to restore the bad track list from a disk type that does not contain the diagnostic cylinder containing that information, and you had no response to the BAD TRACK ACCESS NAME prompt.

Action. If you know the bad tracks, provide the list of bad tracks to the Initialize Disk Surface (IDS) command. This can be done either interactively or from a file by answering the BAD TRACK ACCESS NAME prompt with the name of the file or device from which the bad tracks will be entered. If you do not know the bad tracks, perform an IDS command on the disk.

NONE IDS – DEVICE < device name> IS NOT A DISK [C] [IDS,INV]

User Error. The Initialize Disk Surface (IDS) and Initialize New Volume (INV) commands can be performed only on a disk device. All disk device names begin with the letters DS.

Action. Correct the disk device name and retry the command.

NONE IDS – DEVICE < device name> NOT FOUND IN SYSTEM [C] [IDS,INV]

User Error. The disk drive that you specified is not known to the operating system.

Action. Verify that the device name you specified is listed in the system configuration by performing a List Device Configuration (LDC) command. Then retry the IDS command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE IDS – DISK < disk name> IS INSTALLED OR IN USE [C]
[IDS,INV]

User Error. The disk you specified to be initialized is either installed, or is already being initialized.

Action. If the disk you specified is installed, unload it using the Unload Volume (UV) command. If it is already being initialized, wait for the initialization process to complete.

NONE IDS - DISK WITH LESS THAN 256 BYTES PER SECTOR CANNOT BE INITIALIZED [C]
[IDS]

User Error. DX10 file management cannot be used on disks with less than 256 bytes per sector; therefore, this disk cannot be initialized.

Action. Use a disk with 256 bytes per sector or more.

NONE IDS – IDS CONTINUATION IS INVALID WITHOUT PARTIAL SURFACE ANALYSIS [C]
[IDS]

User Error. No partial surface analysis has been done on this disk. IDS continuation is intended to restart a surface analysis that has been interrupted.

Action. If you want a surface analysis, retry the operation answering NO to the prompt IDS CONTINUATION?.

NONE IDS – INPUT PARAMETERS ARE NOT CONSISTENT [C]
[IDS]

User Error. You specified incorrect parameter values for the desired function. The IDS utility supports multiple functions that cannot be performed simultaneously.

Action. Verify the correct parameters in Volume II of the DX10 manuals, then retry the operation.

NONE IDS – TOO MANY BAD TRACKS ON DISK [C]
[IDS,INV]

User Error. The disk you are initializing has too many bad tracks.

Action. Use another disk.

NONE IDS – TRACK 0 OR 1 IS BAD [C]
[IDS]

User Error. DX10 requires both track 0 and track 1 of a disk to be in good condition, otherwise the disk is unusable.

Action. Use another disk.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE IDS - USER MUST EXECUTE IDS COMMAND BEFORE FIRST
INV COMMAND [C]
[INV]

User Error. Before you can initialize a disk for system use, the disk surface must be initialized, and any bad tracks identified by the disk manufacturer must be specified during initialization.

Action. Perform the Initialize Disk Surface (IDS) command, and specify YES to the INITIALIZE NEW VOLUME? prompt.

NONE ILLEGAL CHARACTERS IN CONTROL FILE [C]
[BD,CD,RD,VB,VC]

User Error. You have entered control file option information containing characters other than alphanumeric or $.

Action. Correct the control file and rerun the utility.

1C ILLEGAL DISK ADDRESS [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error/System Error/User Error. This message has the same meaning as SVC >00 error code >1C with the same message, except that it applies to a diskette.

Action. Find error code >1C in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

0007 ILLEGAL MEMORY ADDRESS [C]
[MPI,SPI]

User Error. You asked the utility to display or modify a memory address that was not within the limits of the program being displayed or modified.

NOTE

This program accesses the disk even if the program to be modified is in memory. If a task being modified has attached procedures, you must take the procedure biases into account. Make sure that all system tasks are biased by the load point for system tasks (>C000).

Action. Correct the address and retry.

NONE ILLEGAL OPTION SPECIFIED [C]
[CPI,MPI,SPI]

User Error. You specified something other than ADD or REPLACE as the option.

Action. Reissue the command and specify a valid option.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0003 ILLEGAL PARAMETER [C]
[SIS]

User Error. One of the input parameters has an illegal value.

Action. Retry with a corrected input parameter.

NONE ILLEGAL TERMINAL SPECIFICATION: CC [C]
[XHT,XT,XTS]

User Error. The prompt asked you to supply a station ID (station number) and you entered the value shown in the CC field of the message. This is not a valid station ID for this system.

Action. Retry with a valid station ID (number). Each station on a system has a number associated with it. All stations on the system have a name in the form STXX, where XX is the station ID (number).

NONE ILLEGAL VALUE [C]
[MOE,MPE,MTE]

User Error. In interactive mode you just entered an illegal value. In batch mode one of the batch values is not allowed. This usually means that the utility expected an integer, character, or YES/NO and the batch stream contained something else.

Action. Check for typographical errors, make sure that hexadecimal digits are preceded by > or 0, and that you understand the type of response required (integer, character, or YES/NO).

In batch mode, lists of length two are allowed. The first value is verification data and the second is the new data. The list must have parentheses around it in the form (verification data, new data).

NONE IMPROPER COMMAND [C]
[MS]

User Error. You entered an illegal key while modifying a synonym. The cursor returns to the beginning of the field in which the error occurred.

Action. Reenter the value in the field indicated by the cursor if necessary, and press the proper action key (such as Forward Tab, Next Line, Previous Line, Skip, and so on).

NONE INCLUDES MIXED WITH EXCLUDES [C]
[BD,CD,RD,VB,VC]

User Error. INCLUDE and EXCLUDE directives cannot apply to the same MOVE directive or to the values given in the prompting menu.

Action. Change the control file to contain only one set of INCLUDE directives or one set of EXCLUDE directives for each MOVE directive. Then reinitiate the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INCOMPATIBLE DISK TYPES; RESPECIFY [C]
[CVD,DCOPY]

User Error. You tried to copy/verify with devices of a different capacity, such as Diablo-31 to Trident-80, and so on. The error also includes using tape as intermediate storage (checked on tape restore).

Action. Respecify the function with disk drives of the correct type.

NONE INITIALIZATION COMPLETE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Informative Message. The utility successfully initialized the diskette.

Action. None.

XXXX INITIALIZATION ERROR [C]
[MOE,MPE,MTE]

System Error. A call to get the Terminal Communication Area (TCA) record failed.

Action. Check that TCA file has not been deleted and that it is the correct file type. For further information see the SCI error codes:

NONE — **** ERROR FF05 **** UNABLE TO ACCESS THE TCA [S]

or

NONE — **** ERROR FF07 **** INVALID TCA CONTENTS [S]

NONE INPUT FILE DOES NOT EXIST [C]
[MD,MKL]

User Error/System Error. Two related errors can cause this error: One, the file defined by your response to the PATHNAME prompt does not exist; or two, the key indexed file pathname does not exist.

Action. In either case, reinitiate the command using the correct pathname.

NONE INPUT FILE EXCEEDS 65520 RECORDS [T]

User Error. The input file you specified for the Text Editor has more than 65,520 records, which is the maximum number allowed for an edited input file.

Action. Either rebuild the input file and reduce its size, or use a different command to modify the file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INPUT FILE I/O ERROR NO. < 00XX> [T]

User Error/Possible System or Hardware Error. The utility encountered an I/O error.

Action. Consult Table 4-2 for error XX and SVC opcode > 00, and apply that information to the input file. Correct the condition and reselect the command being processed at the time the message was issued. To recover without loss of changes made during the current session, enter the Show Line (SL) command and use the default value of one. Then enter the Quit Editor (QE) command with a different output file access name. You can edit the resultant file; however, data past the point of the error condition is lost.

NOTE

An error code of 0000 implies that the file being edited has more than one end-of-file record. You cannot text edit such a file without incurring this error if the last records of the file are displayed.

NONE INPUT FILE IS NOT A KEY INDEXED FILE [C]
[MKL]

User Error. The input file you specified is not a key indexed file.

Action. Reissue the command and specify an appropriate file name.

NONE INPUT FILE IS NOT REL REC OR SEQUEN. [T]

User Error. The specified input file is not a relative record file or a sequential file, and these are the only types of files that you can edit with the Text Editor.

Action. Either retry the operation specifying a valid INPUT FILE ACCESS NAME, or use a different command to modify the desired file.

NONE INPUT FILE USES HASH PLACEMENT [C]
[MKL]

User Error. The Modify KIF Logging (MKL) command can be used only on sequential placement key indexed files. The input file is a hash placement file.

Action. If you want to use a fast load, convert the file to sequential placement. You must have specified sequential placement during system generation.

NONE INPUT IS NOT A PROGRAM FILE [C]
[CPI,MPI,SPI]

User Error. The input file specified is not a program file.

Action. Reissue the command specifying a valid program file.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

25 INSUFFICIENT DISK SPACE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error/System Error. This has the same meaning as SVC error code > 25 with the same message, except that it applies to a diskette.

Action. See error code > 25 in Table 4-2 for SVC opcode > 00 in Table 4-1.

PPQQ INTEGER PARAMETER EXPECTED [C]
[Refer to Note 2 at the beginning of this table.]

User Error. You entered a nonnumeric value for a parameter that can only be numeric. Interpret the error code PPQQ as follows:

PP — the number of the parameter in the PARMS list that is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry using a numeric value.

XXXX INTERNAL ADDITION ERROR [C]
[CKR,CKS,CSK]

System Error. The utility encountered an error while performing 32-bit arithmetic to compute a record number for a file.

Action. Check that the parameters for record numbers are valid. Refer to the SCI error codes in this table for further explanation. SCI error reports take the following form:

**** ERROR xxxx **** < AN ERROR MESSAGE>

where xxxx represents a numerical error code such as 9004, 901B, and so on.

NONE INTERNAL ERROR [C]
[MD,MOE,MPE,MPI,MTE]

Informative Message/User Error/System Error. If you terminate output during the execution of a Modify Program Image (MPI) command, this error appears. Otherwise, the system encountered an error while inserting the name or ID in an internal buffer.

Action. If you terminated the output during an MPI command, disregard the error message, and continue to your next command. If the error comes from another command, check that all parameters are correct. See *Check the Listing File or Device* and *Check the Command Procedure* in Section 8. If the problem persists, call your dealer or customer representative.

XXXX INTERNAL ERROR [C]
[CVD,MKF,MPF]

User Error. The device is not installed, it is not available, or an I/O utility returned an error.

Action. Correct the device ID or place the unit online. See *Check the Listing File or Device* and *Check the Command Procedure* in Section 8. If the error persists, call your dealer or customer representative for software help.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INTERNAL STACK OVERFLOW [C]
[CVD]

System Error. This is an internal error.

Action. Call your dealer or customer representative.

NONE INTERNAL SUBROUTINE ERROR [C]
[LLR,MRF,SRF]

System Error. The system returned this error from an internal subroutine.

Action. Call your dealer or customer representative.

NONE INTERNAL SYSTEM ERROR [C]
[AF,CC]

System Error. The self-check function within the utility found an inconsistency and terminated the utility.

Action. Call your dealer or customer representative.

NONE INVALID ACCESS NAME [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The pathname you specified is incorrect.

Action. Retry the command and enter the correct pathname.

NONE INVALID ADDRESS [C]
[MAD,MADU,SAD,SADU]

User Error. You specified a sector address that is out of range, or the verification list or data list goes outside of the sector boundary.

Action. Check that the parameters SECTOR and FIRST WORD are within range. Check that lists for the VERIFICATION DATA and DATA parameters do not go past sector boundaries.

NONE INVALID BIT MAP NUMBER ENCOUNTERED — FATAL [C]
[CVD]

System Error/Hardware Error. The format disk routine of the utility attempted to read a nonexistent partial bit map from the disk being initialized.

Action. Retry the disk format. If the same error occurs, change the volume. If the error still occurs, verify that the hardware is operational.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INVALID DEVICE / < name> [C]
[AF,CC]

User Error. You specified < name> as an input or output device, and it is not a valid device for the function specified; for example, you specified a printer as an input device.

Action. Retry, using the proper devices for the functions specified.

NOTE

Direct disk I/O is not allowed; therefore, DS01, DS02, and so on, cannot be specified as an output device. Output to disk can only be to a file.

NONE INVALID DIRECTIVE [C]
[BD,CD,RD,VB,VC]

User Error. There is an illegal directive in the control file, such as INCLUDR instead of INCLUDE.

Action. Correct the error in the control file and reinitiate the command.

NONE INVALID EXCLUSIVE EDIT PARAMETER [T]

User Error. You did not specify YES or NO to the EXCLUSIVE EDIT prompt of the Text Editor.

Action. The Initiate Text Editor (XE) and Initiate Text Editor with Scaling (XES) commands supplied by Texas Instruments ensure this parameter is YES or NO. Check the command procedure being used to see how it differs from the standard command procedure. Correct the error and retry the operation.

NONE INVALID EXPRESSION [T]

User Error. You issued an illegal value for the START LINE or END LINE prompts for any of the applicable subcommands within the Text Editor.

Action. Reselect the subcommand and correct your response to the prompts.

NONE INVALID FILE NAME OR SYNTAX [C]
[BD,CD,RD,VB,VC]

User error. Either the utility cannot find a portion of the pathname (including the volume name), or the pathnarne is syntactically incorrect.

Action. See *Check the Command Procedure* in Section 8. Correct the file name and reinitiate the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INVALID FILE TYPE [C]
[MKF,MPF]

User Error. The file being mapped is not of the correct type; that is, it is not a key indexed file if a Map KIF (MKF) command is being attempted, or it is not a program file if a Map Program File (MPF) command is being attempted.

Action. Correct the pathname of the file being mapped or use another type of map command.

NONE INVALID FILE TYPE FOR INSERT FILE [T]

User Error. The only file types that are valid for the Insert File (IF) command are relative record files and sequential files.

Action. Inspect the file name specified in the IF command and verify that it is a relative record file or a sequential file.

NONE INVALID HEAD/CYLINDER [C]
[CVD]

User Error. The utility attempted to format a volume, but the bad track list specified contains an illegal track specification, either a bad head or cylinder value.

Action. Identify and correct the bad track specification and reenter the specification or rerun the utility.

NONE INVALID HORIZONTAL ROLL VALUE [T]

User Error. The parameter you specified for the horizontal roll value in the Modify Horizontal Roll (MHR) command is invalid.

Action. See *Check the Command Procedure* in Section 8.

0001 INVALID INPUT FILE TYPE [C]
[CKR,CKS,CSK]

User Error. For the Copy KIF to Sequential (CKS), and the Copy KIF Randomly (CKR) commands, the input file is not a key indexed file. For the Copy Sequential to KIF (CSK) command, the input file is not a sequential file.

Action. Verify that the input file type is correct by performing a Map Disk (MD) command on the file. Use the correct command for the types of files involved.

NONE INVALID ITEM [C]
[MVI]

User Error. When the program prompted with WHICH ITEM (S, O, P, L, D, V, W), you entered a character other than those listed.

Action. The command prompt reappears after the error message. Press the C key and then the Return key to enter the next item to be changed.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0001 INVALID KEY [C]
[CKS]

User Error. You specified a key that is not defined for this file.

Action. Reenter the command and specify a key that is defined for the file. Perform a Map KIF (MKF) command to determine which keys are defined for the file.

NONE INVALID LINE LENGTH PARAMETER [T]

User Error. You responded to the LINE LENGTH prompt of the Text Editor with an invalid number.

Action. See *Check the Command Procedure* in Section 8.

NONE INVALID LINE NUMBER [T]

User Error. You specified the line number as zero, which is an invalid line number for the specified command.

Action. Retry the operation, specifying a valid line number.

NONE INVALID MOD LIST ACCESS NAME [T]

User Error. The file you specified for the MOD LIST ACCESS NAME prompt of the Quit Edit (QE) command is the same file you specified as the input or output file access name.

Action. Retry the QE command, specifying a different file, or no file for the MOD LIST ACCESS NAME.

NONE INVALID MODE VALUE [T]

User Error. The parameter passed to the Text Editor from the Initiate Text Editor (XE) or the Initiate Text Editor with Scaling (XES) command which indicates whether or not the scaling line is to be displayed, is invalid.

Action. See *Check the Command Procedure* in Section 8.

NONE INVALID OPTION [C]
[BD,CD,RD,VB,VC]

User Error. You have an illegal option in the control file; for example: OPTION ADD in the control file for a Backup Directory (BD) command, or OPTION REPLACE in the control file of any command.

Action. Correct the error and reinitiate the command.

0001 INVALID OUTPUT FILE TYPE [C]
[CKR,CKS,CSK]

User Error. For the Copy KIF to Sequential (CKS), and the Copy KIF Randomly (CKR) commands, the output file is not a sequential file. For the Copy Sequential to KIF (CSK) command, the output file is not a key indexed file.

Action. Verify that the output file type is correct by performing a Map Disk (MD) command on the file. Use the correct command for the types of files involved.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INVALID PARAMETER [C]
[RCRU,WCRU]

User Error. You specified an invalid parameter.

Action. Identify and correct the parameters. See *Check the Command Procedure* in Section 8 for correct keyword types and correct PARMS clause.

0001 INVALID PARAMETER [C]
[AT,CKS,CKR,CPI,CSK,LLR,MAD,MADU,MPI,MRF,SAD,SADU,SPI,SRF]

User Error. One of the parameters you specified is not correct. The parameter is a list and a list is not allowed.

Action. See *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause.

0002 INVALID PARAMETER [C]
[AT,CKS,CKR,CPI,CSK,LLR,MAD,MADU,MPI,MRF,SAD,SADU,SPI,SRF,STS]

Two errors can cause this report:

User Error. One of the parameters you specified is the wrong type. The allowable types are integer, string, or YES/NO.

Action. See *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause.

System Error. Program initialization failed. The utility encountered an error while attempting to read the Terminal Communication Area (TCA) file, opening the output file, or obtaining the system overlay table.

Action. See *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause. See *Check the TCA File* in Section 8. If the error persists after you take the corrective measures indicated, call your dealer or customer representative.

0003 INVALID PARAMETER [C]
[AT,CKS,CKR,CPI,CSK,LLR,MAD,MADU,MPI,MRF,SAD,SADU,SPI,SRF]

User Error. You failed to specify a parameter, or you specified an incorrect one.

Action. See *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause.

0004 INVALID PARAMETER [C]
[AT,CKS,CKR,CPI,CSK,LLR,MAD,MADU,MPI,MRF,SAD,SADU,SPI,SRF]

User Error. The parameter length is too long.

Action. See *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0005 INVALID PARAMETER [C]
[AT,CKS,CKR,CPI,CSK,LLR,MAD,MADU,MPI,MRF,SAD,SADU,SPI,SRF]

User Error/System Error. One of the parameters you specified is not correct, or an internal call to open the Terminal Communication Area (TCA) field has not occurred, indicating a system malfunction.

Action. For the first instance, see *Check the Command Procedure* in Section 8 for the correct keyword types and correct PARMS clause. In the second instance, see *IPL the System* in Section 8. If the error persists, call your dealer or customer representative.

00NN INVALID PARAMETER # [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The parameter that NN specifies is not in the form that the utility expects.

Action. Retry the command and enter the correct parameters for the prompts.

00NN INVALID PARAMETER # [T]

User Error. The parameter you specified for the right margin in the Modify Right Margin (MRM) command is invalid. You must enter a positive integer less than or equal to 240.

Action. The MRM command supplied by Texas Instruments ensures that this parameter is valid. Check the command procedure being used to see how it differs from the standard command procedure. Correct the error and retry the operation.

NONE INVALID RIGHT MARGIN VALUE [T]
[MRM]

User Error. The parameter you specified for the right margin in the Modify Right Margin (MRM) command is invalid. It must be a positive integer less than or equal to 240.

Action. The MRM command supplied by Texas Instruments ensures that this parameter is valid. Check the command procedure being used to see how it differs from the standard command procedure. Correct the discrepancies and retry the command.

NONE INVALID SELECTION [C]
[MVI]

User Error. In response to the SELECT prompt, you entered something other than P (Primary), S (Secondary), or T (Test).

Action. The command prompt reappears after the error message. Reexecute the entire change operation to get back to where the error occurred. Once you arrive at the SELECT prompt, enter P, S, or T.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE INVALID TAB STOP [T]

User Error. One of the tab stops you specified is a non-numeric value or a value that is not a comma.

Action. Check the command you used to establish tabs to be sure it allows you to enter only legal tabs.

NONE INVALID TELEPHONE NUMBER [C]
[CALL]

User Error. The telephone number contains characters other than 0 – 9, #, *, or =.

Action. Retry, using a valid telephone number.

NONE INVALID TERMINAL TYPE [C]
[ANS,CALL,DISC]

User Error. The terminal access name was not a port designated at system generation to be of type TPD.

Action. Retry with valid data.

4104 INVALID TERMINAL TYPE [C]
[MHPC]

User Error. The port you specified in response to the TERMINAL ACCESS NAME prompt was not designated as type TPD during system generation.

Action. Retry the command, using a valid port.

NONE INVALID TEXT FILE RECORD LENGTH [T]

User Error. The utility cannot delete and recreate one of the Text Editor work files, the text file, with the proper record length for the current edit session. The file probably has a LUNO assigned to it.

Action. See *Check for File Access Conflicts* and *Check the Directory Structures* in Section 8, for the edit temp file.

NONE INVALID TYPE FOR SAVE FILE [T]

User Error. The file you specified for the Save File (SF) prompt already exists and is not a sequential or relative record file.

Action. Execute the Save Lines (SVL) command again, specifying a sequential or relative record file as the SAVE FILE, or specifying a file that does not exist.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0001 INVALID VERB CODE PARAMETER IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The first parameter that the utility call specified is invalid because it is a list.

Action. Change the parameter so that it is no longer a list. In Section 8, see *Check the Command Procedure* for the correct PARMS clause. Also see *Check the TCA File* in section 8.

0002 INVALID VERB CODE PARAMETER IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The utility call specified an incorrect type for the first parameter. The allowable type is an integer.

Action. Correct the parameter and resubmit. In Section 8, see *Check the Command Procedure* for the correct PARMS clause. Also see *Check the TCA File* in Section 8.

0003 INVALID VERB CODE PARAMETER IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The first parameter specified by the utility call does not exist, (it is a null value). The parameter is required.

Action. In Section 8, see *Check the Command Procedure* for the correct PARMS clause, and *Check the TCA File.*

0004 INVALID VERB CODE PARAMETER IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The first parameter that the utility call specified is too long.

Action. Check that an integer variable is not out of range, or that a string variable does not have too many characters. In Section 8, see *Check the Command Procedure* for the correct PARMS clause, and *Check the TCA File.*

0005 INVALID VERB CODE PARAMETER IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The first parameter specified by the utility call is not valid. An internal call to open the TCA file has not occurred.

Action. In Section 8, see *Check the Command Procedure* for the correct PARMS clause. Also see *Check the TCA File.*

NONE INVALID VERTICAL ROLL VALUE [T]

User Error. The parameter you specified for the vertical roll value in the Modify Roll (MR) command is invalid.

Action. See *Check the Command Procedure* in Section 8 for the correct keywords and PARMS clause.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE I/O ERROR < nn> [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error/System Error. During execution, the utility encountered an I/O error.

Action. Find error code nn in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. The program returns to the DISKETTE DRIVE prompt. Respond according to the information from Table 4-2.

NONE I/O ERROR < CCEE> [C]
[MVI]

User Error. Either the utility encountered an I/O error during execution, or you responded incorrectly to one of the prompts.

Action. Refer to error code EE in Table 4-2 for SVC opcode CC in Table 4-1. Take the corrective measures listed, and then reenter the Modify Volume Information (MVI) command to continue modifying the system files.

XX I/O ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility encountered error code XX while performing I/O to the desired file from the pathname you specified.

Action. See the error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Then check the hardware for errors or have the dealer or customer representative check the device. You may need to write the file on a different diskette or disk if the medium is beginning to wear.

NONE I/O ERROR CODE = < XX> [C]
[CVD,DCOPY]

Hardware Error. The hardware detected an error on an I/O call.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

NONE I/O ERROR WHILE WRITING SYSTEM INFORMATION [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. While writing the diskette information block back to diskette, the utility detected an error.

Action. If the diskette is suspected of being bad, discard the diskette. Try a diskette known to be good. If the error recurs, check the hardware for errors or have the dealer or customer representative check the device.

06 I/O HAS BEEN ABORTED OR I/O OPERATION HAS TIMED OUT [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error/Hardware Error. This message has the same meaning as SVC error code > 06 with the same message, except that it applies to a diskette.

Action. Find error code > 06 in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0001 I/O INITIALIZATION ERROR [C]
[SDT]

User Error. The utility program produces some form of output. The utility attempted to open the output file or device and failed.

Action. Make sure that the output device is a valid device and that it is online and available. If the output is going to a file, the file will be autocreated but any directory levels within the pathname must already exist. See *Check the Listing File or Device* in Section 8.

XXYY I/O SUPERVISOR CALL ERROR [C]
[MRF,SRF]

User Error/System Error. An internal supervisor call returned an error.

Action. Find error code YY in Table 4-2, and apply that information to SVC opcode > 00 in Table 4-1.

NONE < aliasname> IS AN ALIAS OF < filename> [C]
[BD,CD,RD,VB,VC]

Informative Message. This message indicates that the utility copied an alias because the ALIAS option was specified.

XXYY LUNO CLOSED, RELEASE FAILED (ERROR CODE, LUNO) [C]
[RAL]

System Error. The utility failed to release LUNO YY because the Release LUNO SVC encountered error XX.

Action. This is an internal error. See *IPL the System* in Section 8. If the error persists, call your dealer or customer representative.

0001 LUNO NOT FOUND [C]
[SIS]

User Error. You requested the status of a specific LUNO and the utility cannot find that LUNO. Either the LUNO has been released, or you specified an incorrect LUNO.

Action. Retry the command, specifying the correct LUNO.

NONE MASTER DISK FATAL ERROR [C]
[CVD,DCOPY]

Hardware Error. The utility attempted to execute the Store Registers to the disk and encountered a fatal error.

Action. Retry the utility. If the failure recurs with the same error, a controller error may exist. Verify that the hardware is operational.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE MASTER DISK FORMAT ERROR [C]
[CVD,DCOPY]

User Error. The master disk is not formatted or the format of track 0 has been destroyed. The utility will simulate a one sector per record format and continue. Any additional error on track 1 will terminate the utility.

Action. Correct any hardware malfunctions, for example, clean the heads, and/or change the volume.

NONE MASTER DISK NOT 3.X FORMAT [C]
[CVD]

User Error. The master disk has not been initialized using a DX10 3.X operating system.

Action. Change the volume to one that has been initialized using DX10 3.X.

NONE MASTER DISK OFFLINE/NOT READY [C]
[CVD,DCOPY]

User Error. The master disk drive is not ready.

Action. Make sure that the master disk is online and up to speed. For details, refer to the hardware user's guide for the particular disk drive.

NONE MASTER DISK, TRACK 0 OR 1 IS BAD — FATAL ERROR [C]
[CVD,DCOPY]

Hardware Error. The utility attempted to read track 0 or 1 of the master disk and failed.

Action. Correct any hardware malfunctions (for example, clean the heads), and/or change the volume. See *Check for Disk Problems* in Section 8.

NONE MASTER VOLUME NAME ERROR — SPECIFIED = <VNSPECIF>/ACTUAL = <VNACTUAL> [C]
[CVD,DCOPY]

User Error. The actual volume name (VNACTUAL) on the disk or tape does not match the name you specified (VNSPECIF) in response to the prompt MASTER VOLUME.

Action. If the correct volume is mounted, answer Y to the prompt USE NAMES AS TYPED?. If the wrong volume has been mounted, answer N and then answer Y to the prompt CHANGE VOLUMES. If the wrong device has been specified, answer N to both prompts to respecify both the device and volume names.

NONE MAXIMUM NUMBER OF OVERLAYS DIFFER / > xx TO > yy [C]
[BD,CD,RD,VB,VC]

Informative Message. The "xx" value equals the maximum number of overlays in the source. The "yy" value equals the maximum number of overlays in the destination.

Action. No action is required from you.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE MAXIMUM NUMBER OF PROCEDURES DIFFER / > xx TO > yy
[BD,CD,RD,VB,VC]

Informative Message. The "xx" value equals the maximum number of procedures in the source. The "yy" value equals the maximum number of procedures in the destination.

Action. No action is required from you.

NONE MAXIMUM NUMBER OF TASKS DIFFER / > xx TO > yy
[BD,CD,RD,VB,VC]

Informative Message. The "xx" value equals the maximum number of tasks in the source. The "yy" value equals the maximum number of tasks in the destination.

Action. No action is required from you.

NONE MEMORY NOT ALLOCATED [C]
[LLR,MAD,MADU,MRF,SAD,SADU,SRF]

System Error. The task could not get enough memory for its internal buffers because the Get Memory SVC failed. There is probably insufficient memory available in the system.

Action. Perform the operation again. If the problem persists, you need to create more room in user memory. Several options exist to do this:

- Delete some devices from the system.
- Reduce the physical record size of the file in question by reconstructing it.
- Reduce the size of the System Table Area by regenerating the system.
- If you are still unable to correct the problem, call your dealer or customer representative.

NONE MENU PROCESSING ERROR [C]
[MOE,MPE,MTE]

System Error. The utility encountered an error while processing the menu displayed on the terminal. This is an internal error.

Action. Call your dealer or customer representative.

NONE MINUS RELATIVE LINE NO. NOT ALLOWED [T]

User Error. A negative relative line number is not permitted in the END LINE expression for any applicable command.

Action. Retry the command and correct your response to the END LINE prompt.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE MODIFICATION ALREADY APPLIED
[MPI]

Informative Message. The verification data does not match the data currently in the program image. However the values supplied as the new data are currently in the program image. Either you issued the command previously, or made the change by some other means.

NONE MODIFICATION PREVIOUSLY APPLIED
[MRF]

Informative Message. See *MODIFICATION ALREADY APPLIED* in this table.

NONE MODULE DELETE PROTECTED [C]
[CD,RD]

User Error. The Restore Directory (RD) or Copy Directory (CD) command cannot replace the specified module in a program file because the file is delete protected.

Action. If the file names you specified for input and output are the same, respond with REPLACE to the OPTION prompt. Correct the protection status as needed for the Copy Directory (CD) or Restore Directory (RD) commands. Rerun the utility with the correct option/protection.

0003 MODULE DOES NOT EXIST [C]
[CPI,MPI,SPI]

User Error. The indicated program does not exist on the program file you specified.

Action. Retry, specifying the correct program on the program file.

NONE MODULE NAME ALREADY USED [C]
[MOE,MPE,MTE]

User Error. This error occurs when you change module names. You already installed a task, procedure, or overlay with the name that you specified in the Modify Task Entry (MTE), Modify Procedure Entry (MPE), or Modify Overlay Entry (MOE) command in the same program file. Two tasks, two procedures, or two overlays cannot have the same name, although a task and a procedure or a procedure and an overlay can.

Action. Select a different name.

NONE MORE THAN 2 BAD TRACKS, FORMAT ABORTED [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The diskette is not usable.

Action. Install new diskette and retry the format operation. If several new diskettes, or diskettes known to be good continue to give this error, service the diskette drive or call your dealer or customer representative to do so.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE MUST HAVE SRC AND DST OR CONTROL FILE [C]
[BD,CD,RD,VB,VC]

User Error. You must enter either a source and a destination directory or a control file in the prompting menu.

Action. Reenter the command, responding with sufficient information to the prompts.

NONE NAME LENGTH ERROR [C]
[CVD,DCOPY]

User Error. The number of characters you entered in response to a prompt is incorrect.

Action. Reenter response with a name of valid length. Device names are one to four characters and volume names are one to eight characters. Zero characters, or a null response is allowed only in the LISTING ACCESS NAME prompt, and then only when specifying no listing.

4105 NO ANSWER — ABANDON CALL TIMEOUT [C]
[CALL]

User Error. The terminal being dialed did not answer the telephone. The automatic call unit timer expired.

Action. Verify that the correct number is being dialed and that the terminal is configured to answer the telephone. Verify that the terminal is not currently connected to another circuit. A good technique for verifying this is to use an ordinary telephone to call the terminal. The terminal should answer the telephone and produce a carrier tone. Occasionally, calls do not complete due to overloading or other problems in the telephone network.

4106 NO ANSWER — CONNECT NOT CONNECTED [C]
[CALL]

User Error. The terminal being dialed did not answer the telephone. A software timer expired.

Action. Verify that the correct number is being dialed and that the terminal is configured to answer the telephone. Use an ordinary telephone to verify that the terminal is not currently connected to the terminal in question. The terminal should answer the telephone and produce a carrier tone. Occasionally, calls are not completed due to overloading or some other problem in the telephone network.

410B NO ASSOCIATED ACU [C]
[CALL]

User Error. Automatic dialing was indicated but the port specified has no associated automatic call unit.

Action. Use manual dialing, or use a different port with an associated automatic call unit.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE NO DESTINATION SPECIFIED [C]
[BD,CD,RD,VB,VC]

User Error. A MOVE directive containing only a source file name followed by a comma is the last record in the control file.

Action. Correct the MOVE directive to perform the move you desire. See Volume II for more information on MOVE directives. You must process the entire control file again if you entered the Backup Directory (BD) command. If you are executing a Copy Directory (CD) command, then place the pathnames in the MOVE directive in the prompting menu, with no control file to produce the desired results.

4109 NO DISCONNECT — ASSOCIATED TASKS ACTIVE [C]
[DISC]

User Error. The specified station has associated tasks; for example, SCI is active at the station.

Action. Terminate the active tasks and retry.

4116 NO DISCONNECT — DEBUG ACTIVE [C]
[DISC]

User Error. You cannot disconnect while the debugger is active.

Action. Either allow the debug session to complete or abort it, then retry the disconnect.

4115 NO DISCONNECT — EDIT IN PROGRESS [C]
[DISC]

User Error. You cannot disconnect while the Text Editor is active.

Action. Terminate the edit session and then retry the disconnect.

410A NO DISCONNECT — OTHER TASKS USING THE TERMINAL [C]
[DISC]

User Error. Other tasks have LUNOs assigned to the station.

Action. Release the LUNOs and retry the command.

27 NO FILE DEFINED BY NAME SPECIFIED [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. This message has the same meaning as SVC error code > 27 with the same message, except that it applies to a diskette.

Action. See error code > 27 in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0003 NO KSB FOR TERMINAL LOCAL LUNO [C]
[SIS]

System Error. This is an internal error.

Action. See *IPL the System* in Section 8. If the problem persists, call your dealer or customer representative.

4114 NO MODIFICATION — OTHER TASKS USING TERMINAL [C]
[MHPC]

User Error. Other tasks have LUNOs assigned to the port.

Action. Release the LUNOs and retry the command.

NONE NO RIGHT PAREN IN PATHNAME [C]
[BD,CD,RD,VB,VC]

User Error. If you set off the last file name of a pathname in a MOVE directive by a left parenthesis, then you must terminate the directive with a right parenthesis. For example:

```
MOVE .FIRST.SECOND(THIRD,.X.Y
```

should be

```
MOVE .FIRST.SECOND(THIRD),.X.Y
```

Action. Correct the control file error and reinitiate the command.

29 NO SYSTEM TABLE SPACE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. You attempted to assign a LUNO, and the system could not allocate memory for the internal data structure necessary for LUNO assignment. The operation was not performed.

Action. Retry the request. If this problem occurs frequently, regenerate the system to include a larger system table area.

NONE NON-DISK SPECIFIED WITH DISK OPTION [C]
[RD,VB]

User Error. You specified a disk as the sequential medium device for a Restore Directory (RD) or Verify Backup (VB) command, but the file specified on the disk was not produced using the disk option for Backup Directory (BD).

Action. Review the BD listing to determine the type of backup done, then retry the command with the proper information.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

4112 NOT A SWITCHED CIRCUIT [C]
[ANS,CALL]

User Error. The port specified was not defined as a switched circuit during system generation.

Action. Select another port, or regenerate the system designating the device port in question as a switched circuit. (This applies to keyboard send/receive (KSR) device types designated at system generation to use the TPD device service routine.)

NONE < filename> NOT COPIED

System Error/User Error. The system encountered an error while trying to copy the file.

Action. See *Check for File Access Conflicts* in Section 8. Attempt to access the file with a different utility, such as the Copy/Concatenate (CC), or Copy KIF to Sequential File (CKS) commands. Then proceed according to the error returned for that command.

NONE NOT ENOUGH MEMORY [T]

User Error/System Error. Not enough memory is available to complete the execution of the Copy Lines (CL) or Move Lines (ML) command.

Action. Copy or move fewer lines at a time.

NONE < file name> NOT FOUND
[BD,CD,RD,VB,VC]

Informative Message. The file name in this message was in the backed up sequential file, but not in the directory it was being compared to.

PPQQ NUMERIC PARAMETER OUT OF RANGE [C]
[Refer to Note 2 at the beginning of this table.]

User Error. A numeric input parameter failed a range check. The error code PPQQ is interpreted as follows:

PP — the number of the parameter in the PARMS list which is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry with corrected parameter.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXYY OPEN ERROR [C]
[CKD,RCD]

User Error/System Error. The utility is unable to assign a LUNO or open a file or device.

Action. Look up error YY in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1. See *Check the Listing File or Device* in Section 8 for a related problem with your defined file, the foreground or background TCA file, the TCA library file, or the Terminal Local File (TLF).

XX OPEN ERROR ON INPUT [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The utility encountered SVC error code XX on opening the input from the diskette or disk.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

XX OPEN ERROR ON OUTPUT [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The utility encountered SVC error code XX when it attempted to open the output on the diskette or disk.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

30 OPERATION EXCEEDS RANGE OF FILE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. This message has the same meaning as SVC error code 30 with the same message, except that it applies to a diskette.

Action. See error code >30 in Table 4-2, and apply the information there to SVC opcode >00 in Table 4-1.

NONE OPTIONS MIXED WITH EXCLUDES [C]
[BD,CD,RD,VB,VC]

User Error. A MOVE or another EXCLUDE directive are the only directives permitted between two EXCLUDE directives in a control file.

Action. Correct the control file error and reinitiate the command.

NONE OTHER ACTIVE TERMINALS AND TASKS MUST BE TERMINATED [C]
[CVD,DCOPY]

User Error. You cannot use DS01 in a disk copy as either master or copy unless all terminals are logged off (Quit) except the one where CVD or DCOPY is active.

Action. Execute the Quit (Q) command on all other active terminals, then proceed with the copy from your terminal.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE OUTPUT ACCESS NAME IS NOT A FILE [T]

User Error. This error report is issued during the processing of the Quit Editor (QE) command if you responded to the OUTPUT FILE ACCESS NAME prompt with the name of a device (DS02, LP01, MT04, and so on). The Text Editor only permits output to a file.

Action. Reselect the QE command and enter a valid file access name.

NONE OUTPUT FILE ACCESS NAME IS NOT A FILE [T]

User Error. This error report is issued during the processing of the Quit Editor (QE) command if you responded to the OUTPUT FILE ACCESS NAME prompt with the name of a device (DS02, LP01, MT04, and so on). The Text Editor only permits output to a file.

Action. Reselect the QE command and enter a valid file access name.

NONE OUTPUT FILE FULL [T]

User Error/System Error. The output file currently has 65,250 records and you attempted to insert another record. You cannot text edit files with more than 65,250 records.

Action. Enter the Execute Text Editor (XE) command and delete some records, or enter the Quit Edit (QE) command to terminate editing.

NONE OUTPUT FILE I/O ERROR NO. < 00XX> [T]

User Error/System Error/Hardware Error. The Text Editor encountered error code XX in attempting I/O to the output file.

Action. Find error code XX in Table 4-2 and apply the information there to SVC opcode > 00 in Table 4-1. Correct the error condition and reselect the command being processed at the time the message was issued.

NONE OUTPUT FILE IS NOT REL REC OR SEQUEN. [T]

User Error. The output file you specified is not a relative record file or a sequential file. The Text Editor can only edit these types of files.

Action. Reselect the Quit Editor (QE) command and specify a valid response to the OUTPUT FILE ACCESS NAME prompt.

NONE OUTPUT FILE IS WRITE PROTECTED [T]

User Error/System Error. You responded with the name of a write-protected file when the Quit Edit (QE) utility prompted you for an output file access name.

Action. Either modify the file protection for the output file that you specified, or specify another output file that is not write-protected.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE OUTPUT IS NOT A PROGRAM FILE [C]
[CPI]

User Error. The output file you specified is not a program file.

Action. Reissue the command, specifying a valid program file.

XXXX OUTPUT PROCESSING ERROR [C]
[SDT]

User Error/System Error. Either you terminated output at the output device before the utility could display the time and date, or a hardware malfunction occurred.

Action. Retry the command. If the error persists, call your dealer or customer representative.

NONE OUTPUT QUEUER ERROR > FF80 [C]
[HO,KO,PF,RO,SOS]

User Error/System Error. The internal queues maintained by SCI are partially destroyed. Possibly a Halt Output (HO), Kill Output (KO), or a Resume Output (RO) command has been issued with an invalid device name.

Action. Perform an IPL to restore the destroyed structures.

PPQQ PARAMETER DOES NOT EXIST [C]
[Refer to Note 2 at the beginning of this table.]

User Error. You neglected to supply a necessary parameter. The error code PPQQ is interpreted as follows:

PP — the number of the parameter in the PARMS list which is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. See *Check the Command Procedure* in Section 8, and then retry the command, specifying all necessary parameters.

XXXX PARAMETER ERROR [C]
[MOE,MPE,MTE]

System Error. The parameter is too large, does not exist, should be a list, or should not be a list.

Action. See *Check the Command Procedure* in Section 8. Also see the SCI errors at the beginning of this table to determine the nature of the problem, then determine which parameter is not right. The SCI error uses this format:

NONE - **** ERROR 9XXX **** error message

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE PARAMETER FETCH/CONVERSION ERROR [C]
[IDT]

User Error. One of the parameters you specified is not correct.

Action. See *Check the Command Procedure* in Section 8 for the correct keywords and a correct PARMS clause. If the problem persists, call your dealer or customer representative.

NONE PARAMETER < x> IS INVALID [T]

User Error. One of the parameters passed to the Text Editor via the PARMS list is invalid. This happens only if the standard SCI command procedure has been modified, or if you are using a non-standard SCI command procedure.

Action. See *Check the Command Procedure* in Section 8. Use the standard Text Editor command procedure to correct the SCI command procedure, and then retry the command.

NONE PARAMETER 1 IS NOT A KIF [C]
[CKR,CKS,CSK]

User Error. The pathname you specified for the key indexed file is not that of a key indexed file.

Action. Determine the correct pathname, and reissue the command.

NONE PARAMETER 2 IS NOT A SEQUENTIAL FILE [C]
[CKR,CKS,CSK]

User Error. The pathname you specified for the sequential file prompt is not that of a sequential file.

Action. Determine the correct pathname, and reissue the command.

0202 PARAMETER OUT OF RANGE [C]
[IDT]

User Error. The year parameter that you specified is greater than or equal to 2000.

Action. Correct the value of the year parameter and retry the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0303 PARAMETER OUT OF RANGE [C]
[IDT]

User Error. The month parameter you specified is greater than 12 or equal to 0.

Action. Correct the value of the month, or enter the name of the month and retry the command.

0404 PARAMETER OUT OF RANGE [C]
[IDT]

User Error. The day parameter you specified is 0 or larger than the number of days in the month you specified.

Action. Check the month and day parameters that you entered, and retry the command.

0505 PARAMETER OUT OF RANGE [C]
[IDT]

User Error. The hour parameter you specified is less than 0 or greater than 23.

Action. Correct the hour parameter and retry the command.

0606 PARAMETER OUT OF RANGE [C]
[IDT]

User Error. The minute parameter you specified is less than 0 or greater than 59.

Action. Correct the minute parameter and retry the command.

FFFF PARAMETER OUT OF RANGE [C]
[CKR,CKS,CSK]

User Error. The key value you designated for sorting is too large. Key values are in the range of 1 through 14.

Action. Specify a valid key value. You can obtain valid keys for the file by performing a Map Key Indexed File (MKF) command.

PPQQ PARAMETER SHOULD NOT BE A LIST [C]
[Refer to Note 2 at the beginning of this table.]

User Error. You entered a list of items for a prompt that allows only one item, or you entered an illegal comma. Commas are allowed only in lists. The error code PPQQ is interpreted as follows:

PP — the number of the parameter in the PARMS list which is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry, using a single item answer for the prompt. Do not use commas except in lists or quoted strings. See *Check the Command Procedure* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE PARAMETER TOO LARGE [C]
[MAD,MADU,SAD,SADU]

User Error. Your response to the TRACK, SECTOR, FIRST WORD, VERIFICATION DATA, DATA, and/or LAST WORD prompt is too large.

Action. Make sure you specify the correct parameters and that they are within the correct range.

PPQQ PARAMETER TOO LONG FOR SVC FIELD [C]
[Refer to Note 2 at the beginning of this table.]

User Error. The value you entered for a prompt was too long for the utility to insert into a DX10 SVC. Usually this report occurs when a task name, device name, or volume name is too long. The error code PPQQ is interpreted as follows:

PP — the number of the parameter in the PARMS list which is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry the command after correcting the parameter value. See *Check the Command Procedure* in Section 8. If the error persists, call you dealer or customer representative for software help.

NONE PATHNAME IS A DEVICE [C]
[LD]

User Error. You entered a device name instead of a directory pathname in response to the PATHNAME prompt.

Action. Reinitiate the command, giving the correct pathname.

NONE PATHNAME IS NOT OF A DIRECTORY [C]
[LD]

User Error. The given pathname exists for a file, but not for a directory.

Action. Reinitiate the command, responding with the proper pathname for the directory. If you need a listing of a single file, use the Map Disk (MD) command.

NONE PATHNAME UNDEFINED [C]
[IBMUTL]

User Error. You entered an illegal pathname.

Action. Determine the correct pathname and reenter the command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE PREVIOUS MODULE NOT RESTORED

Hardware Error. A disk error occurred when you backed up this program file. The previous task is flagged as not restorable. (This error report occurs only in a listing file, and does not appear on your screen.)

Action. Call your dealer or customer representative.

NONE PREVIOUS MODULE NOT VERIFIABLE

Hardware Error. A disk error occurred when you backed up this program file. The previous task is flagged as not restorable. (This error report occurs only in a listing file, and does not appear on your screen.)

Action. Call your dealer or customer representative.

NONE PRIORITY NOT LEGAL [C]
[MTE]

User Error. The priority value you entered is not allowed.

Action. Check the REAL TIME value and confirm that it is compatible with the priority value:

- If the REAL TIME value is NO, the priority must be in the range of 0 through 4.
- If the REAL TIME value is YES, the priority can be in the range of 1 through 127 (decimal values.)

NONE PROCEDURE OR OVERLAY LINKAGE IS INCORRECT [C]
[CPI]

System Error. The internal procedure and/or overlay IDs associated with the task are too large.

Action. If possible, rebuild the program file, otherwise call your dealer or customer representative.

NONE PROCESS USED SYSTEM DISK — IPL REQUIRED
[DCOPY]

No Error Condition. When DS01 is used as either the copy disk or the master disk, the program may modify structures in memory without also modifying them on disk. To ensure system integrity if DS01 is used, DCOPY ends by forcing a >177 crash. Perform an initial program load (IPL) and proceed.

NONE RD: (< error message text>)

Disregard the RD: preface to the error message. This table lists the text following the RD: alphabetically. Once you have found the error message, apply the description and recovery procedure to the Restore Directory (RD) command.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XX READ ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility encountered error code XX when it attempted to read the file from the pathname you specified.

Action.

- See the error code XX in Table 4-2 and apply that information to SVC opcode > 00 (from Table 4-1.)
- Check the hardware for errors or have your dealer or customer representative check the device.
- Read the desired file from a different diskette or disk. The diskette could be worn.

NONE READ ERROR — TRACK = @@@@ / CHARACTER COUNT = #### [C]
[CVD,DCOPY]

Hardware Error. The utility attempted to read hexadecimal track number @@@@, but encountered an error. The character count #### indicates the number of characters requested for the read. The data in the read buffer may be the data from the previously read track, or it may be the data from the indicated track, depending on the error. An I/O error code appears on the terminal where the utility is being executed. A character count of less than > A0 indicates a read format error.

Action. If you selected the COPY function, retry the copy, since the original copy failed. If you selected a verify only function, moving the volume to a different drive can help the copy. If neither attempt executes successfully, the volume is possibly damaged, or a hardware failure has possibly erased some information from the media. Full recovery of data from the media is doubtful. See *Check for Disk Problems* in Section 8. Correct any hardware malfunction and rerun the utility. If recovery attempts still fail, recover the data from backup media. Nonstandard procedures can be used in an attempt to salvage irreplaceable data. Call your dealer or customer representative for assistance.

XXYY READ ERROR ON TRACK 1 COPY [C]
[CKD,RCD]

System Error. The volume information on track 1 is unreadable. The volume information on track 1 is a copy of the information on track 0, sector 0, which was copied when the disk was initialized. The disk is unusable and cannot be recovered by the Recover Disk utility.

Action. Restore the data from backup. If the problem persists, consult your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXYY READ FORMAT ERROR [C]
[CKD,RCD]

User Error. The utility cannot read the format of the disk you specified. An internal buffer that contains a line of output has overflowed, or a pointer to the current column in the buffer is too large. Possibly, an internal call to open the output file has not occurred.

Action. Call your dealer or customer representative.

04 RECORD LOST DUE TO POWER FAILURE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error. This message has the same meaning as SVC error code >04 with this error message, except that it applies to a diskette.

Action. See error code >04 in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

NONE RECOVER EDIT NOT ALLOWED WITH EDIT IN PROGRESS [T]

User Error. You attempted to use the Recover Edit (RE) command while an edit session was already in progress.

Action. Use the RE command only after an initial program load (IPL) to recover an edit that was in progress before the IPL. If you currently have an edit session in progress, use the Quit Edit (QE) command to save the session.

NONE REPLACEMENT STRING OVERFLOWS LINE [T]

User Error. The length of the specified replacement string plus the starting column of the string exceeds the right margin. The string was not replaced.

Action. Examine the line and determine the nature of the problem. Check the right margin by using the Modify Right Margin (MRM) command. Retry the operation specifying the desired parameters.

NONE RVS***ERROR >9390 : BAD VOLUME STRUCTURES

System Error. Either a bad directory entry (FDR) or bad partial bit maps has caused RVS problems.

Action. Run Check Disk (CKD) to determine the problem. See *Rebuild the Disk Volume* in Section 8.

NONE RVS***ERROR >9391 : FUNCTION NOT IMPLEMENTED

System Error. This is an internal error in the RVS utility.

Action. Call your dealer or customer representative.

NONE RVS***ERROR >9392 : ABORTED BY USE OF COMMAND KEY

Informative Message. You pressed the Command key, which prematurely stopped RVS.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE RVS***ERROR >9393 : SYSTEM IN USE

User Error. RVS will work on the system volume only when all stations, except the one running RVS, are logged off.

Action. Try again after all users have logged off.

NONE RVS***ERROR >9394 : VOLUME IN USE

User Error. RVS stops if files other than those specified are accessed. If this volume is the system volume, RVS automatically allows access to certain system files.

Action. Either specify the files with the ALLOW FILE(S) prompt or stop users from accessing the files. See *Check for File Access Conflicts* in Section 8 for information on locating the files and users.

NONE RVS***ERROR >9061 : VOLUME NOT FOUND

User Error. The specified volume was not installed in the system.

Action. Install the volume and try again.

NONE SAVE FILE ALREADY EXISTS AND OPTIONS = ADD [T]

User Error. The file you specified in the SAVE FILE prompt for the Save Lines (SVL) command already exists, but you specified an ADD option.

Action. Retry the command, and either specify a different SAVE FILE pathname, or respond with the REPLACE option.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE SAVE FILE IS TOO LARGE [T]

User Error. You attempted to extend a file using the Save Lines (SVL) command, but the file contains more than 65,250 records.

Action. Reexecute the SVL command, specifying a smaller file, or a file that does not yet exist, in response to the SAVE FILE prompt.

NONE SD—***ERROR 90E2***
[SD]

User Error. The specified device name is not the name of a disk, and the utility works only with disks.

Action. Specify a valid disk name and try the operation again.

NONE SD—***ERROR 9151***
[SD]

User Error. DX10 file management cannot be used with disks that have fewer than 256 bytes per sector.

Action. Use a disk with at least 256 bytes per sector.

NONE SD—***ERROR 9325***
[SD]

User Error. The volume in the indicated disk drive has not been initialized.

Action. Use the Recover Disk (RDC) command to recover the contents of sector 0; then try SD again. If the error persists or if RDC returns an error, check to see if you can recover the data from another medium. If you can, use the Initialize New Volume (INV) command and restore the data. Otherwise, call your dealer or customer representative for assistance.

NONE SD—***ERROR 93A0***
[SD]

User Error/System Error/Hardware Error. The utility could not read sector 0 of the specified disk, and it cannot perform the desired operation without the information from that sector.

Action. Verify that the disk pack is in the correct type of drive. Use the Recover Disk (RDC) command to recover the contents of sector 0; then try SD again. If the error persists or if RDC returns an error, check to see if you can recover the data from another medium. If you can, use the Initialize New Volume (INV) command and restore the data. Otherwise, call your dealer or customer representative for assistance.

NONE SD—***ERROR 93A1***
[SD]

User Error/System Error/Hardware Error. The utility could not read the first record of directory .VCATALOG on the specified disk, and it cannot perform the desired operation without the information from that record.

Action. No standard utility program exists for recovery of information that has been destroyed. If you cannot recover the data from another medium, call your customer service representative for assistance.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

1D	SEEK INCOMPLETE DETECTED BY DISK CONTROLLER [C] [DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF] *Hardware Error.* This message has the same meaning as SVC error code > 1D with the same message, except that it applies to a diskette. *Action.* See error code > 1D in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1.
NONE	SOURCE MUST BE SEQUENTIAL FILE OR MAG TAPE [C] [BD,CD,RD,VB,VC] *User Error.* You responded to the SEQUENTIAL ACCESS NAME prompt with something other than a sequential file or magnetic tape. *Action.* Reinitiate the command, entering an appropriate pathname for the SEQUENTIAL ACCESS NAME prompt.
NONE	SOURCE NOT CREATED BY BACKUP [C] [RD,VB] *User Error.* The sequential access name that you supplied for the Verify Backup (VB) or Restore Directory (RD) command does not contain data created by the Backup Directory (BD) command. *Action.* Consult the BD listing for the proper access name. Verify that any MOVE directives used correspond to the BD listing. If applicable, see *Check for Magnetic Tape Problems* in Section 8. If the error persists, call your dealer or customer representative for software help.
NONE	SPECIFIED CRU ADDRESS OUT OF RANGE [C] [RCRU,WCRU] *User Error.* The CRU address you specified is not within legal bounds. *Action.* Identify and correct the CRU address, then retry the command.
NONE	SPECIFIED WRITE LENGTH OUT OF RANGE [C] [WCRU] *User Error.* The write length you specified is greater than 15. *Action.* Respecify the write length and retry the command. Use a zero write length to specify 16 bits.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listiing (Continued)

NONE SPECIFIED WRITE VALUE TOO LARGE [C]
[WCRU]

User Error. Your response to the VALUE TO BE WRITTEN prompt is not a single precision value, that is, it does not fit in 16 bits.

Action. Retry the command, specifying a hexadecimal value capable of being represented by 16 bits or less.

NONE SPURIOUS CHARACTERS IN CONTROL FILE [C]
[BD,CD,RD,VB,VC]

User Error. While processing a record in the control file, the utility found invalid characters for the end-of-line marker. These characters could possibly be a comment that you did not precede by an exclamation point. For example, the command:

```
MOVE .S$PROC.BD,.TEST BD PROC
```

would cause this error. The correct form is:

```
MOVE .S$PROC.BD,.TEST ! BD PROC
```

Action. Correct the control file and reinitiate the command.

NONE START COLUMN PAST END COLUMN [T]

User Error. The start column you specified for the Find String (FS), Delete String (DS), or Replace String (RS) command is larger than the end column that you specified.

Action. Correct your responses to the prompts and retry the command.

NONE STRING EXCEEDS COLUMN LIMITS [T]

User Error. This error is returned by the Find String (FS), Delete String (DS), and Replace String (RS) commands if the given string is longer than the difference of the columns given.

Action. Retry the command, specifying either a shorter string or different column limits.

XXYY SUPERVISOR CALL ERROR [C]
[LLR]

User Error. An internal supervisor call (SVC) returned an error.

Action. Refer to SVC error code YY in Table 4-2 and apply that information to SVC opcode, or I/O subopcode XX in Table 4-1.

NONE SVC ERR *** ERROR < > XXYY> *** [C]
[BD,CD,RD,VB,VC]

System Error. SVC opcode XX returned error code YY.

Action. Find SVC error YY in Table 4-2 and apply that information to SVC opcode XX in Table 4-1.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

07XX SVC ERROR [C]
[AT]

User Error/System Error. The Activate Task (> 07) SVC returned a task state code.

Action. Find state code XX in Volume III of the DX10 manuals and apply that information to SVC opcode > 07 in Table 4-1. If XX equals 06, one of two situations exists. Either you were able to activate the task with the Activate Task (AT) command, or if you halted the task with the Halt Task (HT) command, you need to reactivate the task with the Resume Task (RT) command.

NONE SVC ERROR *** ERROR CCEE *** [C]
[MAD,MADU,SAD,SADU]

System Error/User Error. While executing, the utility encountered an SVC error.

Action. Find SVC error EE in Table 4-2, and apply that information to SVC opcode CC in Table 4-1.

NONE SVC ERROR < error number> [C]
[CVD]

System/Hardware Error. This is an internal error.

Action. Call your dealer or customer representative.

XXYY SVC ERROR [C]
[ANS,CALL,CKR,CKS,CSK,DISC,LHPC,MHPC]

System Error/User Error. While executing, the utility encountered an SVC error.

Action. Find error code > YY in Table 4-2 and apply that information to SVC opcode > XX in Table 4-1. (For CKR, CKS, and CSK commands, XX represents the subopcode of SVC opcode > 00.)

CCEE SVC ERROR (SVC CODE, ERROR CODE) [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. The utility attempted to issue a DX10 SVC and received an error. The SVC issued is shown by the two characters CC and the error code returned is EE.

Action. Look up SVC error EE in Table 4-2, and apply that information to the SVC opcode CC in Table 4-1.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

3BFF SVC TO STORE DATE/TIME ENCOUNTERED ERROR [C]
[IDT]

System Error. The task within the system that performs this function was not installed as a privileged task.

Action. Check the system program file and verify that task > 19 is installed as a privileged task. If not, use the Modify Task Entry (MTE) command to modify the program file and make this task privileged. See Volume II for information on the MTE command. If you are testing a new system program file using the Modify Volume Information (MVI) command, verify that the program file is created correctly and has all the system-supported tasks installed in the correct manner.

22 SYNTAX ERROR IN PATHNAME [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The pathname you supplied the utility contained bad syntax.

Action. Retry the command, correcting the syntax error for the diskette pathname.

NONE SYS: BUFFER OVERFLOW [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utility encountered a condition that requires more internal buffer space than was allocated.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: BUFFER TOO SHORT FOR SVC FIELD [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utilities internal buffer area is too small for the function attempted.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

XXXX SYS: DO NOT SUSPEND SVC FAILED [C]
[RAL]

System Error. An internal program error occurred.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: INPUT INITIALIZE NOT CALLED [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The program did not call the initialization procedure. This is an internal error.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

XXXX SYS: NO BUFFER FOR STRING [C]
[Refer to Note 2 at the beginning of this table.]

System Error. A call to an internal subroutine failed to provide a string buffer. This is an internal error.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: NO BUFFER FOR STRING FIELD [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utility program has not designated a buffer area for use by a lower level routine.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: NUMBER TOO LARGE FOR FIELD ON OUTPUT [C]
[Refer to Note 2 at the beginning of this table.]

System Error. While formatting the output, the program encountered a number larger than the maximum space allowed on the print line.

Action. This could possibly be a list device error. See *Check the Listing File or Device* and also *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: OUTPUT INITIALIZE NOT CALLED [C]
[Refer to Note 2 at the beginning of this table.]

System Error. Internal program initialization was not completed for the output device (file).

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: PARAMETER TOO LONG FOR BUFFER [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utilities internal buffers are not long enough to hold the parameters entered.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

NONE SYS: SPECIFIED FIELD LENGTH TOO LARGE [C]
[Refer to Note 2 at the beginning of this table.]

System Error. While moving data internal to the program, a string of data was encountered with a length greater than allowed by the program.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listiing (Continued)

NONE SYS: STRING WAS PLACED WHEN NOT WANTED [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utility expected a non-string parameter at this point in the processing, but received a string parameter.

Action. See *Check the Command Procedure* in Section 8. If the recommendations there fail to correct the error, call your dealer or customer representative.

2A SYSTEM CANNOT GET MEMORY [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility is unable to get enough table area for the function required.

Action. Find error >2A in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

0002 SYSTEM ERROR [C]
[SIS]

System Error. Program initialization has failed. An error was received while reading the TCA, opening the output file, or obtaining the system overlay table address.

Action. See *Check the TCA File* and *Check the Listing File or Device* in Section 8. If the error persists, call your dealer or customer representative.

0003 SYSTEM ERROR [C]
[STS]

User Error. One of the input parameters has an illegal value.

Action. Retry the command, correcting the input characters.

0001 SYSTEM ERROR O$HEX [C]
[MRF,SRF]

System Error. During binary to ASCII conversion of data for output, an internal buffer being used for output overflowed.

Action. Call your dealer or customer representative.

0002 SYSTEM ERROR O$HEX [C]
[MRF,SRF]

System Error. During binary to ASCII conversion of data for output, an internal call to open the output file did not occur.

Action. Call your dealer or customer representative.

0003 SYSTEM ERROR O$HEX [C]
[MRF,SRF]

System Error. This error occurs during binary to ASCII conversion of data for output.

Action. Verify that the input parameters are correct. If they are, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

0004 SYSTEM ERROR O$HEX [C]
[MRF,SRF]

System Error. This error occurs during binary to ASCII conversion of data for output. Specifically, the field being converted is too long.

Action. Check that your response to the FIRST WORD prompt is not longer than nine characters.

0001 SYSTEM ERROR O$INIT CALL [C]
[MRF,SRF]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

XXXX SYSTEM ERROR S$DIV [C]
[MRF,SRF]

System Error. When calculating the record number to modify or show, the system encountered a division error.

Action. Check that the input parameters for record numbers are valid. See the SCI errors at the beginning of this table to determine the nature of the problem, then find which parameter is not right. You can find the SCI error by its format:

NONE **** ERROR 9XXX **** error message

XXXX SYSTEM ERROR S$IADD [C]
[MRF,SRF]

System Error. An error occurred during an internal call to S$IADD while performing 32-bit addition to compute record numbers.

Action. Check that the input parameters for record numbers are valid. See the SCI errors at the beginning of this table to determine the nature of the problem and then find which parameter is not right. You can find the SCI error by its format:

NONE **** ERROR 9XXX **** error message

XXXX SYSTEM ERROR S$ISUB [C]
[MRF,SRF]

System Error. This is caused by subtraction error when calculating the record number to modify or show.

Action. Check that the input parameters for record numbers are valid. See the SCI errors at the beginning of this table to determine the nature of the problem and then find which parameter is not right. You can find the SCI error by its format:

NONE **** ERROR 9XXX **** error message

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE TAB NOT FOUND BEFORE RIGHT MARGIN [T]

User Error. The utility cannot find any tab settings before the right margin.

Action. Use the Modify Tabs (MT) command to establish tab settings that precede the right margin, or use the Modify Right Margin (MRM) command to change the right margin. See *Check the Command Procedure* in Section 8 for an improper call.

NONE TAPE FATAL ERROR [C]
[CVD,DCOPY]

Hardware Error. During tape I/O, an unexpected error occurred. The software cannot recover.

Action. Remount the tape on the tape drive. Ready the drive and make one more attempt to perform the copy/verify function. If this fails, try a different tape or service the hardware (clean the heads, and so on). See *Check for Magnetic Tape Problems* in Section 8.

NONE TAPE NOT OF SAME BACKUP DIRECTORY AS FIRST TAPE. MOUNT TAPE x; TYPE $ TO QUIT, Y TO CONTINUE [C]
[BD,CD,RD,VB,VC]

User Error. The volume that is mounted has a different time and date from the first volume read.

To continue: Find the correct volume and ready it. Type Y to continue the command. To quit: Type $ to quit the command.

NONE TAPE TO TAPE ILLEGAL [C]
[CVD,DCOPY]

User Error. The utility does not allow tape-to-tape processing.

Action. Retry the command and specify different devices, or use another command.

NONE TAPE UNIT — OFFLINE/NO WRITE RING [C]
[CVD,DCOPY]

User Error. Either you did not ready the tape drive, or the reel does not contain a write-enable ring.

Action. Ready the tape drive or insert a write-enable ring. You must insert a write-enable ring on any reel mounted when you specify the magnetic tape device in response to the prompt COPY DEVICE, even if the verify only function is selected.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

4000 TASK ABORTED [C]
[ANS,CALL,DISC,LHPC,MHPC]

System Error/User Error. A task aborted. Someone entered a Kill Task (KT) command or a Kill Task SVC for the program, or you have entered the Hard Break key sequence while the program was active at your terminal. The Hard Break key sequence consists of pressing the Attention key, releasing it, then holding down the Control key while pressing the X key.

Action. Attempt to locate and correct the cause of the error. See *IPL the System* in Section 8. If the problem persists, call your dealer or customer representative.

0001 TASK NOT FOUND [C]
[STS]

Informative Message. The utility did not find the indicated task in the system. Either the task terminated, or you specified an incorrect task ID.

Action. Verify that the task ID you need is correct, and that the task is still active.

0003 TASK NOT FOUND [C]
[SIS]

User Error. You specified task local LUNOs, but the indicated task was not found in the system. Either the task terminated, or you specified an incorrect task type or ID.

Action. Retry the command with the correct task type and ID.

NONE TASK STATE: < XX> [C]

Informative Message. This message appears whenever you try to activate a task. Look for error code XX in Table 4-2 and apply that information to SVC opcode > 07 in Table 4-1. A state other than > 06 means that the task did not activate.

Action. Be sure you are trying to activate the correct task. If you cannot activate or kill a task, see *IPL the System* in Section 8.

NONE TEMP FILE I/O ERROR NO. < 00XX> [T]

User Error/System Error. The utility encountered error XX when attempting I/O with a temporary file.

Action. Find error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Correct the condition and reselect the command that was being processed at the time the message was issued. See *Check the Listing File or Device* in Section 8 for the edit temporary files.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE THE TEXT EDITOR MAY NOT BE USED IN BATCH [T]

User Error. You issued a Text Editor command in a batch input stream. You cannot use the Text Editor in batch mode.

Action. Determine another method to accomplish your goal.

nn THIS PARAMETER NUMBER INVALID [C]

User Error. The parameter specified by the number "nn" is not in the form expected by the utility.

Action. Verify that you entered the correct responses for the parameters and retry the command. Consult the utility as to the maximum parameter length and correct form. See *Check the Command Procedure* in Section 8.

NONE TOO MANY BAD TRACKS, FORMAT ABORTED [C]
[IBMUTL]

Media Error. The diskette is bad.

Action. The program control returns to the DISKETTE DRIVE prompt. Install a new diskette and retry the format function.

NONE TOO MANY INCLUDES OR EXCLUDES [C]
[BD,CD,RD,VB,VC]

User Error. You are limited to 50 INCLUDE or EXCLUDE names per MOVE.

Action. Reduce the number of INCLUDE/EXCLUDES and retry the command.

NONE TOO MANY KEYS [C]
[CFKEY]

User Error. The maximum number of keys allowed for a key indexed file is 14. You attempted to create a key indexed file with more than 14 keys.

Action. Retry the command with 14 or fewer keys.

NONE TOO MUCH DATA [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The IBM format diskette reached its data capacity. The last data-set is labeled empty and transfer is terminated.

Action. Install a new IBM format diskette and retry the transfer.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE TRACK ALLOCATION CONFLICT. TRACKS MARKED BAD ARE NEEDED FOR IMAGE RESTORE [C]
[DCOPY]

User Error/Hardware Error. A track containing data on the master disk is marked bad on the destination disk. The DCOPY utility requires a track for track correspondence between the master disk and the copy disk; therefore any conflict means that the copy cannot be performed.

Action. If you are copying from disk to disk, (without using tape as an intermediate medium) use another copy disk with fewer or no bad tracks, or use the Copy and Verify Disk (CVD) command for the copy. If you are using tape as an intermediate medium, you can only use another copy disk with fewer or no bad tracks.

NONE TYPE/USAGE CONFLICT [C]
[BD,CD,RD,VB,VC]

Informative Message. The file you want to copy already exists, but it is of a different type (relative record, sequential, or key-indexed) or usage (directory, program file, or image file). You cannot copy the file to the destination unless the two files have the same name and usage and are of the same type.

Action. Use the Copy Concatenate (CC) command to copy the file to the destination once you have performed the Copy Directory (CD) command. If this error occurred during a Restore Directory (RD) command, delete the destination file and rerun the command in order to restore the file.

NONE UNABLE TO ALLOCATE DISK SPACE FOR < filename> [C]
[CVD]

System Error. The system was unable to find enough contiguous disk space on the copy disk for the file indicated. Imperfections on the copy disk can cause this.

Action. Copy to another disk.

NONE UNABLE TO BID THE BACKGROUND TASK [S]

User Error/System Error. SCI cannot bid a task in the background with a .QBID or .DBID primitive.

Action. Most likely, the LUNO specified in the .QBID or .DBID primitive is not a global LUNO. Reassign the LUNO as a global LUNO. If this is not the case, one of the errors possible for >2B SVC is likely (>FB, >FC are common; see Section 4). If that is not the case, internal SCI structures are likely to be destroyed. Restore these structures by performing an initial program load (IPL). If the problem persists, delete the file .S$BGTCA and see *IPL the System* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listiing (Continued)

NONE UNABLE TO GET TCA [C]
[CPI,MPI,SPI]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

3B UNABLE TO GRANT REQUESTED ACCESS PRIVILEGES [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. This message has the same meaning as SVC error code >3B with the same message, except that it applies to a diskette.

Action. See error code >3B in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

NONE UNABLE TO LOCATE TASK [C]
[AT]

User Error. The task to be activated either terminated or did not execute.

Action. Check that the task has actually been bid and is suspended.

0001 UNABLE TO OPEN INTERMEDIATE FILE
[LLR]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

0001 UNABLE TO OPEN OUTPUT FILE [C]
[LLR]

User Error. The utility program produces some form of output. An attempt was made to open the output (file or device) and this attempt failed.

Action. Make sure that the output device is a valid device and that it is online and available. If it is, see *Check the Listing File or Device* in Section 8. If the procedures there fail to correct the problem, call your dealer or customer representative.

0002 UNABLE TO OPEN OUTPUT FILE [C]
[LLR]

User Error. The utility program produces some form of output. An attempt was made to open the output file or device and this attempt failed.

Action. Make sure that the output device is a valid device and that it is online and available. If it is, see *Check the Listing File or Device* in Section 8. If the procedures there fail to correct the problem, call your dealer or customer representative.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE UNABLE TO OPEN THE LISTING FILE [C]
[CKR,CKS,CSK]

User Error. The utility cannot open the pathname given for the listing file with exclusive access.

Action. Ensure that the listing access name is of a valid device or of a valid file pathname. The file will be autocreated but the directory must preexist. See *Check the Listing File or Device* in Section 8.

NONE UNABLE TO REPLACE < imagename> [C]
[CPI]

User Error. The image < imagename> exists in the output program file but the task could not replace it.

Action. The image may already exist at a different ID or under a different name. Delete it using the Delete Task (DT), Delete Overlay (DO), or Delete Procedure (DP) command, then reexecute the command.

XXXX UNDEFINED OPERATION IN VERB ACTION [C]
[Refer to Note 2 at the beginning of this table.]

System Error. The utility program (an interpretive processor) encountered a function that is undefined.

Action. See *Check the Command Procedure* in Section 8. If the error persists, call your dealer or customer representative.

NONE UNDEFINED PATHNAME [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. You entered a pathname that does not represent a file.

Action. Determine the correct pathname and retry the command.

NONE UNDEFINED VERB CODE IN PROC [C]
[IDT]

User Error/System Error. The utility programs obtain their input parameters from the SCI interaction with your terminal. Many of the utilities are capable of performing several functions. A two digit number is passed to the utility to let it know which function is unknown to the utility called. In order for this error to occur, you must have either modified a procedure, or created an erroneous procedure.

Action. See *Check the Command Procedure* in Section 8. If the error persists, call your dealer or customer representative.

XXXX UNDEFINED VERB CODE IN PROC [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. See the preceding error report.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE UNEXPECTED EOF ON BACKUP MEDIA [C]
[BD,CD,RD,VB,VC]

System Error/User Error. An end-of-file status was returned when the Restore Directory (RD) or Verify Backup (VB) command was expecting data.

Action. The Backup Directory (BD) command may have terminated prematurely due to an error. Check listing from BD for errors and rerun BD. If applicable, see *Check for Magnetic Tape Problems* in Section 8.

NONE UNEXPECTED ERROR DURING FORMAT PROCEDURE — FATAL [C]
[CVD]

Hardware Error/System Error. A call to a formatting routine returned an unexpected and undefined error.

Action. Retry the command. If the error recurs, see *Check for Disk Problems* in Section 8.

0101 UNEXPECTED ERROR OR ERROR IN ERROR PROCESSING [C]
[Refer to Note 2 at the beginning of this table.]

User Error/System Error. Possibly the synonym table overflowed. If not, the utility encountered a condition that should never occur, or encountered an error while processing an error condition.

Action. Delete unnecessary synonyms if the synonym table is too full. Otherwise, See *Check the Command Procedure* in Section 8. If the error persists, call your dealer or customer representative.

4000 UNEXPECTED INTERNAL ERROR [C]
[ANS,CALL,DISC,LHPC,MHPC]

System Error. The task experienced difficulty accessing system files or system tables.

Action. See *Check the Command Procedure* in Section 8. If you text edited the procedure, verify that a correct number of PARMS is indicated.

1B UNIT CHECK ERROR DURING DISK I/O [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

Hardware Error. This message has the same meaning as SVC error code >1B with the same message, except that it applies to a diskette.

Action. See error code >1B in Table 4-2 and apply that information to SVC opcode >00 in Table 4-1.

NONE UNIT OFF LINE [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The system is unable to detect a diskette in the device specified.

Action.

1. Insert the diskette into the device properly and close the device door.
2. Check the hardware for errors or have the dealer or customer representative check the device.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

FFFF UNSPECIFIED ERROR [S]

System Error. An internal routine has encountered a totally unexpected error.

Action. See *Check the Command Procedure* in Section 8. If the error persists after you attempt corrective action, call your dealer or customer representative.

NONE UTILITY ONLY FOR SEQUENTIAL KIF [C]
[CKR,CKS,CSK]

User Error. Use this utility only on sequential placement key indexed files.

Action. Recover the file by using other means.

NONE VALIDATION ERROR ON ASSUMED TX FORMATTED DISKETTE [C]
[TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The diskette you want to access has not been initialized correctly.

Action. Initialize the diskette and reenter the command. If the error persists, check for hardware errors.

NONE VALUE TOO LARGE FOR FIELD [C]
[MOE,MPE,MTE]

User Error. One of the specified values has too many characters. Field lengths are: 8 for NAME; 2 for ID (+ 1 for hexadecimal indicator); 3 for all others.

Action. Check that all fields are the correct length or less.

NONE VB: < error message text>

Disregard the VB: preface to the error message. This table lists the text following the VB: alphabetically. Once you have found the error message, apply the description and recovery procedure to the Verify Backup (VB) command.

NONE VC: < error message text>

Disregard the VC: preface to the error message. This table lists the text following the VC: alphabetically. Once you have found the error message, apply the description and recovery procedure to the Verify Copy (VC) command.

NONE VERB PROCESSING INITIALIZATION ERROR [C]
[IDT]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

0001 VERB PROCESSING INITIALIZATION ERROR
[SDT]

User Error/System Error. Input to terminal prompts are passed to utility programs via the disk file .S$FGTCA. The utility attempted to read this file and failed.

Action. Refer to *Check the TCA File* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE VERIFICATION ERROR [C]
[MOE,MPE,MTE]

User Error. This error occurs in batch mode only. The verification data you supplied in the list did not match the actual data.

Action. Check that the specified values are correct for the verification data. Retry with the proper data.

NONE VERIFICATION ERROR [C]
[CVD]

Hardware Error. The utility did not verify a file due to a data check failure between the source and copy disks.

Action. Check that the specified values are correct for the verification data. Retry with the proper data.

0004 VERIFICATION ERROR [C]
[MPI,SPI]

User Error. If you enter verification data, the utility will compare it to the data currently on the program file. If the compare fails, the verification error occurs and modification does not take place.

Action. Make sure you are attempting to modify the proper location. Retry the command with the proper data.

NONE VERIFICATION FAILED [C]
[MAD,MADU,MRF,SRF]

User Error. The verification data you supplied while executing a Modify Relative to File (MRF), Modify Absolute Disk (MAD), or Modify Allocatable Disk Unit (MADU) command did not match the actual data.

Action. Check that you specified the correct address, and that the data at that address is also correct. You can do this with the SRF command (for MRF), SAD command (for MAD), or the SADU command (for MADU).

000A VERIFICATION FAILED [C]

User Error. See NONE – VERIFICATION FAILED.

NONE VERIFY ERROR TRACK ####, BYTE @ @ @ @ [C]
[CVD,DCOPY]

Hardware Error. The data values in bytes @ @ @ @ on track #### of the devices differ.

Action. Make sure that you are verifying the proper volumes. If you are using the proper volumes, recopy, in order to correct the error. See *Check for Disk Problems* in Section 8.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listing (Continued)

NONE VOLUME NOT FIRST OF SEQUENCE [C]
[BD,CD,RD,VB,VC]

User Error. The volume which has been mounted (as the first volume) was not the first volume of the backup.

Action. Find the first volume of the backup, mount it, and reexecute the command.

XX WRITE ERROR [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

System Error. The utility encountered error code XX when it attempted to write to the desired file from the pathname you specified. The hardware cannot write the desired file to the diskette/disk as denoted by the function of the utility.

Action.

- See the error code XX in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Also see the error codes for the diskette utilities for a further explanation of what action to take.
- Check the hardware for errors or have your dealer or customer representative check the device.
- Write the file on a different diskette/disk. The diskette may be starting to wear.

XXYY WRITE ERROR [C]
[CKD,RCD]

User Error/System Error. The utility encountered error YY while attempting to rewrite track 0.

Action. Look up error code YY in Table 4-2 and apply that information to SVC opcode > 00 in Table 4-1. Adjust the problem and retry the operation.

NONE WRITE ERROR TRACK = @@@@ / CHARACTER COUNT = #### [C]
[CVD,DCOPY]

Hardware Error. A write of hexadecimal track number @@@@ has resulted in an error. The number of characters requested for the write is indicated by the character count ####. An I/O error code is indicated on the terminal where the CVD or DCOPY task is being executed. In addition, a character count of less than > A0 indicates a write format error.

Action. See *Check for Disk Problems* in Section 8. If you selected a copy function, execute the copy again since the data transferred is probably invalid. If this fails, moving the volume to a different drive may allow the write to complete. If neither attempt results in write completion, the volume is possibly damaged, or a hardware failure occurred. Correct any hardware malfunction and rerun CVD or DCOPY. If writing still fails, replace the volume.

Table 3-1. SCI, Command, Debugger, and Text Editor Error Message Listiing (Continued)

NONE WRITE PROTECTION ON [C]
[DXTX,IBMUTL,TXCM,TXCP,TXDF,TXDX,TXMD,TXSF]

User Error. The diskette in the drive is write protected.

Action. If the diskette has a WRITE PROTECT hole in it, and you wish to write on the diskette, cover the WRITE PROTECT hole in the diskette. Check the diskette drive for errors or have your dealer or customer representative check the device.

NONE WRONG DEVICE TYPE [C]
[CKD,IBMUTL,RCD]

User Error. You specified a device other than a disk device (DSxx or DKxx) in response to the DISK DRIVE NAME or DISKETTE DRIVE NAME prompt.

Action. Retry the command, specifying a disk or diskette as the device.

NONE WRONG VOLUME OF A BACKUP SERIES [C]
[BD,CD,RD,VB,VC]

User Error. The volume that you mounted after the end-of-volume MOUNT VOLUME request is not in order.

Action. To continue: Find the volume number that you specified in the MOUNT VOLUME request and ready it. Type Y to continue the command. To quit: Type $ to quit the command.

NONE WRONG VOLUME/REEL/DATE/DISK FORMAT [C]
[DCOPY]

User Error. The header label of the tape contains data different from the trailer label of the previous tape.

Action. Mount the correct tape volume.

PPQQ YES/NO PARAMETER EXPECTED [C]
[Refer to Note 2 at the beginning of this table.]

User Error. You entered a non-YES/NO response to a prompt that required a yes or no answer. Interpret the error code PPQQ as follows:

PP — the number of the parameter in the PARMS list that is involved in the error condition (for example, 1 = first parameter, 2 = second, and so on.)

QQ — zero if parameter PP is not a list; otherwise QQ is the index into the list of the subparameter involved.

Action. Retry the command, specifying YES or NO to the prompt.

4

SVC Error Reporting

4.1 INTRODUCTION

User tasks interface with the DX10 operating system by issuing supervisor calls (SVCs) that request the operating system to perform a specific function. SVCs are provided within DX10 to perform device and file I/O, task control service functions, memory control, and file utilities. Assembly language tasks use SVCs, whereas high-level language statements are processed by the appropriate interpreter or compiler, and are then translated to the particular SVC required to perform the requested operation. DX10 has extensive internal consistency checks that serve to control functional operation within each standard DX10 supervisor call. Dysfunctional hardware or software operation results in a fault condition particular to the specific SVC related operation executing at the time of the fault. Based on such conditions as device inoperative or busy, memory full, illegal file type, and so forth, DX10 utilities report a coded error and/or a worded message to your terminal. Utilities can also send an error report to the system log.

Since DX10 allows you to include custom SVCs for a particular need or to implement user-designed supervisor calls in assembly language, error reports resulting during the execution of user-generated or other nonstandard SVCs are not within the scope of this manual. For assistance in resolving nonstandard SVC errors, contact the supplier of the non-standard software. *Texas Instruments is not responsible for modifications made to its software.*

NOTE

If you are unable to find a standard DX10 error code in the listings, or you require technical assistance, call your dealer or customer representative.

4.2 SVC ERROR CODE REPORTING FORMAT

SVC errors are one byte in length when returned to the internal memory of the program issuing the SVC. When the issuing program is an SCI command, it often concatenates the SVC opcode or I/O subopcode with the returned error code to form a four-digit hexadecimal number that is displayed at the terminal associated with the call. (Section 3 explains SCI and utility errors.)

4.3 SVC ERROR TABLES

Section 4 divides the SVC error reports into two tables.

4.3.1 SVC Opcode Table

Table 4-1 shows a numerical index of SVC opcodes followed by the category to which each belongs. These four categories include Input/Output SVCs, Program Control SVCs, Memory Control SVCs, and Miscellaneous SVCs. Use the discussion of the program support SVC categories in the following paragraphs to help you locate and define error conditions. Refer to Volume III of the DX10 manuals for detailed information describing supervisor calls and their applications.

Table 4-1. SVC Code Assignments

SVC Code (Hexadecimal)	SVC	Support Category
00	I/O	I/O
00/Subopcode 00	Open	
00/Subopcode 01	Close	
00/Subopcode 02	Close with EOF	
00/Subopcode 03	Open Rewind	
00/Subopcode 04	Close Unload	
00/Subopcode 05	Read Device Status and Read File Characteristics	
00/Subopcode 06	Forward Space	
00/Subopcode 07	Backward Space	
00/Subopcode 09	Read ASCII	
00/Subopcode 0A	Read Direct	
00/Subopcode 0B	Write ASCII	
00/Subopcode 0C	Write Direct	
00/Subopcode 0D	Write EOF	
00/Subopcode 0E	Rewind	
00/Subopcode 0F	Unload	
00/Subopcode 10	Rewrite	
00/Subopcode 12	Open Extend	
00/Subopcode 13	Open Unblock	
00/Subopcode 14	Close Without FDR Update	
00/Subopcode 40	Open Random	
00/Subopcode 41	Read Greater	
00/Subopcode 42	Read by Key and Read Current	
00/Subopcode 44	Read Greater or Equal	
00/Subopcode 45	Read Next	
00/Subopcode 46	Insert	
00/Subopcode 47	Rewrite	
00/Subopcode 48	Read Previous	
00/Subopcode 49	Delete by Key and Delete Current	
00/Subopcode 50	Set Currency Equal	
00/Subopcode 51	Set Currency Greater or Equal	
00/Subopcode 52	Set Currency Greater	
00/Subopcode 90	Create File	
00/Subopcode 91	Assign LUNO to Pathname	
00/Subopcode 92	Delete File	

Table 4-1. SVC Code Assignments (Continued)

SVC Code (Hexadecimal)	SVC	Support Category
00/Subopcode 93	Release LUNO Assignment	
00/Subopcode 95	Rename File	
00/Subopcode 96	Unprotect File	
00/Subopcode 97	Write Protect File	
00/Subopcode 98	Delete Protect File	
00/Subopcode 99	Verify Pathname	
01	Wait for I/O (UCB)	I/O
02	Time Delay	Program control
03	Date and Time	Miscellaneous
04	End of Task	Program control
05*	Bid Task	Program control
06	Unconditional Wait	Program control
07	Activate Suspended Task	Program control
09	Do Not Suspend	Program control
0A	Convert Binary to Decimal	Miscellaneous
0B	Convert Decimal to Binary	Miscellaneous
0C	Convert Binary to Hexadecimal	Miscellaneous
0D	Convert Hexadecimal to Binary	Miscellaneous
0E	Activate Time Delay Task	Program control
0F	Abort I/O (LUNO)	I/O
10	Get Common Data Address	Memory control
11	Change Priority	Program control
12	Get Memory	Memory control
13	Release Memory	Memory control
14	Load Overlay	Program control
15*	Disk File Utility	I/O
16	End of Program	Program control
17	Get Parameters	Program control
1B	Return Common Data	Memory control
1C	Put Data	Miscellaneous
1D	Get Data	Miscellaneous
1F	Scheduled Bid Task	Program control
20	Install Disk Volume	Program control
21	System Log SVC	Miscellaneous
22	Disk Management	I/O
23	Make Task Privileged	Program control
24	Suspend Awaiting Queue Input	Program control
25	Install Task	Program control
26	Install Procedure	Program control
27	Install Overlay	Program control
28	Delete Task	Program control
29	Delete Procedure	Program control
2A	Delete Overlay	Program control

Note:

* Compatibility with DX10 Release 2.2 only.

Table 4-1. SVC Code Assignments (Continued)

SVC Code (Hexadecimal)	SVC	Support Category
2B	Execute Task	Program control
2C	Read/Write TSB	Program control
2D	Read/Write Task	Program control
2E	Self Identification	Program control
2F	End Action Status	Program control
30	Event Character	I/O
31	Map Program Name to ID	Program control
32	Get Overlay Table Address	Program control
33	Kill Task SVC	Program control
34	Unload Disk Volume	Program control
35	Poll Status of Task in Terminal Task Set	Program control
36	Wait on Multiple Initiate I/Os	I/O
37	Assign Space on Program File	Program control
38	Initialize Disk Volume	Program control
39	Get Event Character	I/O
3B	Initialize Date and Time	Miscellaneous
3E	Reset End Action	Program control
3F	Retrieve System Information	Miscellaneous

Note:

* Compatibility with DX10 Release 2.2 only.

4.3.1.1 Input/Output SVCs. Input/output supervisor calls are those directly affecting data flow to or from user programs. They involve devices, device interface and device control within the operating system.

4.3.1.2 Program Control SVCs. Program control supervisor calls are those that directly affect a task, such as those that execute, suspend, or terminate a task.

4.3.1.3 Memory Control SVCs. Memory control supervisor calls allow the calling task to expand its memory space, to access system common memory, to contract its memory space, or to release system common memory. It should be noted that a task can access three distinct portions of memory using the address mapping registers. A task may use one or all of these mapping registers. Memory control SVCs to expand or contract the actual task memory area do not require an additional map register.

These functions are transparent to you, that is, you do not see the mapping functions. However, both hardware and software errors may result if the capabilities of the memory control SVCs are not properly applied.

4.3.1.4 Miscellaneous SVCs. DX10 provides you with a number of SVCs to perform various functions, including intertask communications, binary/decimal and binary/hexadecimal conversion services, time and date service, and system log functions.

4.3.2 SVC Error Report Table

The SVC error report table (Table 4-2) describes the error return, type of error, and suggested user action. The SVC opcode(s) most likely responsible for the error report appear after the error message. The opcodes are enclosed in brackets for ease of reference.

Two classes of errors are worthy of note, because they do not specifically appear in Table 4-2.

- SVCs returning task states are not listed with all errors. These are Bid Task (>05), Activate Task (>07), and Activate Time Delay Task (>0E). Possible task states are listed in Volume III of the DX10 manuals.
- Several SVCs (particularly program file SVCs: >25, >26, >27, >28, >29, >2A, and >37) call the I/O SVCs. If the error code you seek does not list the SVC opcode involved, use the meaning as applied to SVC opcode >00.

Table 4-2. SVC Error Reports

00	DISK OR TAPE ERROR CORRECTION OCCURRED [00] *Informative Message.* Some disk controllers and tape controllers are capable of performing error correction and read-after-write recovery without intervention from the operating system. These controllers send a >00 message to the system log whenever they correct an error. This message does not indicate an immediate problem. Some disk controllers will log error code 00 when accessing a track that has been mapped to an alternate track area because the original is bad. *Action.* Monitor the device in question and the occurrence of the ERR = 00 messages in the system log. Refer to the manual for the disk controller in question, and determine if any accesses required the controller's error-correcting logic (indicated by a bit in register 7 of the afterimage from the system log). Also determine the set of heads, cylinders, and sectors involved in errors. A well-defined set of heads and cylinders, without requiring EEC, usually appears in normal operation. For more information, see the paragraph dealing with disk drives under *Hardware Problems* in Section 8.
01	ILLEGAL USE OF LOGICAL UNIT NUMBER [00] *User Error.* The logical unit number (LUNO) referenced is not assigned. This can indicate that the task is overwriting a call block or other data area. *Action.* Assign the LUNO or use the correct LUNO and run the task.
01	LUNO IS NOT ASSIGNED [15] *User Error.* (Compatible with DX10 2.2 only.) You have attempted to access a LUNO that is not assigned to a file or device. If the request was to add an alias, rename a file, or set a forced write on the file, then the operation was not performed. If the request was to release a LUNO, then the LUNO did not exist.

Table 4-2. SVC Error Reports (Continued)

Action. You should identify the proper LUNO and assign it appropriately. After doing so, rerun the task, if necessary.

01 ILLEGAL TIME SPECIFIED
[1F]

User Error. Either the time that you specified in the scheduled bid is already past, is too far in the future, or you specified an invalid station ID.

Action. Check the specified time; remember that the year is biased by 1900, and that you must specify a calendar day. Verify that you specified the correct station ID.

01 ILLEGAL USE OF LUNO
[25,26,27]

User Error. The specified LUNO is either not assigned or is not assigned to a program file.

Action. Respecify the LUNO and rerun the program.

01 ILLEGAL STATION NUMBER
[2B]

User Error. The specified station number does not exist in the system.

Action. Check the specified station number. Ensure that the active system is generated with the station number desired.

01 MODIFICATION ADDRESS IS OUT OF RANGE
[2C]

User Error. The task status block (TSB) offset value given in the Read/Write TSB SVC block is larger than the length of a TSB.

Action. Check the SVC call block and try again.

01 NO EVENT CHARACTERS ARE PENDING
[30,39]

System Status. No event characters have been typed on your station.

Action. Rerun the program until the characters are typed.

01 TASK DOES NOT EXIST
[33]

User Error. The specified task was not found in the system task list, or it was found but was not associated with the specified station number.

Action. Check the specified task ID; remember that you must use a run-time ID (not an installed ID) in this SVC. Ensure that the task is associated with the specified station number. Other possibilities are that the task already aborted or terminated.

01 INVALID DATA TYPE
[3F]

User Error. You requested a data type not accessible through the >3F SVC opcode. The acceptable data types are physical device table (PDT), overlay table, or addressable memory (system memory).

Table 4-2. SVC Error Reports (Continued)

Action. Verify byte 2 of the SVC call block, then retry the operation.

02 ILLEGAL INPUT/OUTPUT OPCODE
[00]

User Error. Several sources can elicit this error report:

- The I/O subopcode you specified in byte 2 of the call block is not allowed for the device or file you are using.
- You incorrectly specified another part of the SVC call block.
- A user program is overwriting the SVC call block in question.

Action. Take the following actions as necessary:

- Correct the subopcode or reassign the LUNO to the correct device or file.
- Verify that your SVC call block is correct.
- Verify the proper operation of various subroutines with a debug aid suited to the language of the user program.

After making the necessary corrections, retry the operation.

02 UNABLE TO ALLOCATE SYSTEM AREA MEMORY
[21]

System Error. Insufficient system table area is available to queue the message.

Action. Retry the request. If the error occurs often, you should regenerate the system and increase the system table area.

02 NO RUN-TIME TASK ID'S AVAILABLE
[2B]

System Error. This is an extremely unlikely condition. It means that A + B = 255, where A is the number of nonreplicatable tasks installed on the system program file and B is the number of currently executing activations of all other tasks.

Action. Check for nonreplicatable tasks on the system program file that you can delete or reinstall on another program file. Task IDs for nonreplicatable tasks installed on the system program file are reserved and not available as run-time IDs for other tasks.

02 STATION NOT AVAILABLE
[30,39]

System Error/User Error. Another program opened the specified terminal for event characters.

Action. Wait until the specified terminal becomes available, or terminate the other task. You can locate the other task by using the Show I/O Status (SIS) command using the A and WHOLE SYSTEM options.

Table 4-2. SVC Error Reports (Continued)

02 INVALID INDEX/INDEX OUT OF RANGE
[3F]

User Error. The index value you specified in bytes 4 and 5 is either not a valid number, or the value exceeds the number of structures in the data type you are accessing.

Action. Verify that you are accessing the correct structure in the desired data type, correct bytes 4 and 5 of the SVC call block, then retry the operation.

03 LOGICAL UNIT NOT OPENED
[00]

User Error. A program attempted to perform input/output on a LUNO that has not been opened.

Action. Modify the program to open the LUNO first, and verify that the open was successful, (check the error code on the open). Rerun the program.

03 NO SYSTEM TABLE AREA AVAILABLE
[2B]

System Error. The SVC processor could not get system table area to build a task status block (TSB) for the task. This code indicates that the system was generated with insufficient table area.

Action. If this is a peak load condition, retry the SVC when the load levels. If this is a common occurrence, consider regenerating the system to increase system table area allocation.

03 TARGET TASK IS IN WRONG STATE FOR SVC
[2D]

User Error. The Read/Write Task SVC has the restriction that the specified task must either be in memory at the time of the call or be in state 6 (suspended). This error results when the specified task is rolled out of memory and the task is not suspended at the time of the SVC.

Action. Place the target task in a suspended state before issuing the SVC request. You can use SVC > 2C to set the TSB flags that will allow you to suspend the target task next time it executes.

03 ILLEGAL STATION NUMBER/LUNO NOT ASSIGNED TO STATION
[30,39]

User Error. Either the station number you specified is not in the active system or the LUNO specified is not assigned to a station.

Action. Verify the station number you specified, or the LUNO assignments necessary for your operation.

03 LOGICAL UNIT NOT OPENED
[31,37]

User Error. You attempted to perform the SVC using a LUNO that is not open, and the SVC flags were set to indicate that the LUNO has been opened.

Action. Modify the program to open the LUNO, then verify that the open was successful, or set the flag correctly. (Check the error code on the open.) Rerun the program.

Table 4-2. SVC Error Reports (Continued)

03	OFFSET OUT OF RANGE [3F] *User Error.* The offset value into the data structure that you specified is out of the data structure's range. *Action.* Verify bytes 6 and 7 of the SVC call block, then retry the operation. The offset value must be in the range of 0 through L – 1 (in an even number of bytes), where L is the length of the data structure.
04	RECORD LOST DUE TO POWER FAILURE [00] *Hardware Error.* The power failed during an I/O operation on the specified LUNO. *Action.* Attempt the I/O operation again, or perform an initial program load (IPL).
04	SUCCESSFUL COMPLETION OF BID SVC [05,14] *No Error.*
04	SPECIFIED TASK ALREADY BID [05,2B] *User Information Code.* The specified nonreplicatable task is not in a terminated state, therefore you cannot bid it. *Action.* If the task is running as desired, no action is necessary. If you need to restart the task, then kill it, and retry the SVC.
04	MESSAGE LOST [21] *User Error/System Error.* The number of messages queued to be printed exceeds the number permitted (a parameter defined at system generation.) *Action.* If the system log is not initialized, initialize it. If messages are frequently lost, you can enlarge the queue size by regenerating the system.
04	ILLEGAL PROGRAM FILE LUNO SPECIFIED [2B] *User Error.* The program file LUNO you specified is not assigned, or is assigned to something other than a program file. *Action.* Check the LUNO specified. Assign the LUNO if it is not assigned, and retry the SVC.

Table 4-2. SVC Error Reports (Continued)

04 RUN ID SPECIFIED DOES NOT EXIST
[2C,2D]

User Error. The task run-time ID given in the SVC block could not be found in the system at the time of the request. Possibly the wrong ID is being passed in the SVC block. It is also possible that the calling task assumed that the target task was installed non-replicatable and had the same run-time ID as the installed ID, but the specified task was installed replicatable or not bid from the system program file.

Action. Check the SVC block and run-time ID of the target task, then rerun the program.

04 LUNO NOT ASSIGNED TO KEYBOARD DEVICE
[39]

User Error. You did not assign a LUNO to the keyboard device specified.

Action. Verify the LUNO assignments and retry the command.

05 ILLEGAL MEMORY ADDRESS IN I/O CALL BLOCK
[00]

User Error. When the SVC executed, an attempt was made to access memory outside the address space of the program. Or, possibly the physical record of a file does not fit in the available system memory, or a pathname exceeds 48 characters (excluding the length byte).

Action. Correct memory address error and resubmit the program. See Volume V under *System Generation Troubleshooting*. If necessary, reduce the pathname length.

05 SUCCESSFUL COMPLETION OF ACTIVATION
[0E]

No Error.

05 ILLEGAL LOAD ADDRESS SPECIFIED
[14]

User Error. The calling program is trying to load an overlay that would exceed the address space given to the task. Possible causes for this error are that you specified the wrong load address, loaded the wrong overlay, specified the wrong program file, or that the overlay was not linked with the program. It is also possible on a relocatable overlay, that not enough memory was allowed for the overlay and the bit map. See *Compute Total Overlay Size* in Section 8.

Action. Check the SVC block, correct the error, and retry your request.

05 ILLEGAL MEMORY ADDRESS
[21]

User Error. The message you submitted is longer than 71 characters or is at an address outside the program's memory limits.

Action. Check the message length and the address in the SVC block, correct the error, and resubmit the task.

Table 4-2. SVC Error Reports (Continued)

05 ILLEGAL MEMORY ADDRESS SPECIFIED
[2D]

User Error. The memory address you specified in the SVC block is not within the address range of the specified task. Possibly the address you gave is not within the address range of the task, or the entire buffer block that the task requested is not all included in one segment of the task, that is, procedure segment, task segment, or common segment.

Action. Check the SVC block and target task address ranges and retry your request.

06 I/O HAS BEEN ABORTED OR I/O OPERATION HAS TIMED OUT
[00]

User Error/Hardware Error. Either the device did not respond with an interrupt within the expected interval of time, or a program issued an abort I/O call to the device. Possibly a user typed the Hard Break key sequence at a terminal. (The Hard Break key sequence is: press the Attention key release it, and hold down the Control key while you press the X key.)

Action. Reopen the LUNO and retry the I/O operation, or treat as a fatal error.

06 SUCCESSFUL COMPLETION OF ACTIVATION
[07]

No Error.

06 PRIVILEGED SVC ATTEMPTED BY A NON-PRIVILEGED TASK
[2C,2D]

User Error. The Read/Write Task SVC is a privileged SVC and only a privileged task, or a system task can call it. The task issuing the request is not a privileged task.

Action. Verify that you need to use this SVC in this task. If so, change the status of the task so that it is either a privileged or a system task.

07 DEVICE ERROR
[00]

Hardware Error. The device reported an error.

Action. Retry the I/O operation. See *Check for Hardware Problems* in Section 8.

08 ILLEGAL FILE TYPE
[00]

System Error. System data structures do not contain a correct description of the file being accessed.

Action. Check the consistency of the file. See *IPL the System* in Section 8. Also see *Check for FDR Consistency* and *Rebuild the File* in Section 8. If the problem persists, call your dealer or customer representative.

Table 4-2. SVC Error Reports (Continued)

09 DIRECT DISK I/O ATTEMPTED BY NON-PRIVILEGED PROGRAM
[00]

User Error. A LUNO was accidentally assigned to a disk device, or a nonprivileged program attempted to perform direct disk I/O. You should not try to access the disk files with direct disk I/O.

Action. Assign the LUNO to a nondisk device, or install the task as privileged. Also, check if a call block is being overwritten in a user program. This could cause the wrong LUNO to be used.

0A DATA CARRIER LOSS ON REMOTE TERMINAL
[00]

Hardware Error. The data carrier detect (DCD) status line for a terminal has gone low.

Action. If the connection had been previously made, reestablish contact with the remote terminal. If not, check the hardware for proper processing of the status line. Some early 733 cables do not have the DCD line jumpered high.

0B LOGICAL UNIT IN USE BY ANOTHER PROGRAM
[00]

User Error/System Error. Your program attempted to access a LUNO currently in use by another program.

Action. Delay, and retry the Open call until the device becomes available, or terminate the program until the device is available.

0C NO TSB ADDRESS IN LDT
[00]

System Error. An operation encountered inconsistent system data structures.

Action. Retry the operation causing the failure. If the error recurs, see *IPL the System* in Section 8. If the error still appears, call your dealer or customer representative.

0D SPACE IN THE SYSTEM TABLE AREA IS NOT AVAILABLE
[00]

User Error/System Error. The current load on the system table area is too great.

Action. Reduce the activity in the system, or regenerate the system to make the system table area larger, or try the operation later.

0E I/O DEMANDS FOR SPACE IN THE SYSTEM TABLE AREA ARE TOO GREAT
[00]

System Error. The number of I/O requests being processed requires more space in the system table area than has been reserved for I/O at system generation time.

Action. Regenerate the system to increase the additional I/O buffer area, or reduce the number of Initiate I/O calls being issued.

Table 4-2. SVC Error Reports (Continued)

0F ANOTHER LOGICAL UNIT HAS CONTROL OF THIS DEVICE
[00]

User Error/System Error. The requested device is file oriented and another LUNO is open to the device.

Action. Delay and retry the open to the device at a later time, or locate the program that has the LUNO open and decide whether to let the task complete or to terminate it prematurely.

NOTE

SVC error codes >0010 through >0017, and >001E are reported due to error bits 7 through 14 of word 7 of the disk controller status register. Error bits 0 through 5 of word 0 of the controller status register are responsible for producing SVC error codes >0018 through >001D. These error codes can indicate a problem with the disk pack, the controller, or the drive. See *Check for Disk Problems* in Section 8.

10 ABNORMAL COMPLETION OF DIRECT DISK I/O OPERATION
[00]

Hardware Error. The disk controller returns this status only after it detects a TILINE* I/O reset, or a POWER reset. The reset masks all interrupts. DX10's interrupt handler generates the error code, therefore, the system can never report this error code, nor can a bad disk drive or bad interface cables cause the error. (controller status: >A100, >A900)

Action. Retry the operation.

11 ID WORD ERROR DURING DISK TRANSFER
[00]

User Error/Hardware Error. This error can occur if you attempt a disk operation before assigning a volume name to the disk. If the disk already has a volume name, then the error is a disk ID error. In this case, the controller status indicates that the disk read/write heads are *off-track* or that the disk pack is magnetically damaged. The disk controller verifies the correct track location by comparing the disk ID words read from the header of the disk sector with the expected track number. A disk drive seek failure can cause a miscompare, in which case DX10 3.4.1 and later software issues a RESTORE command to recover. A fatal SVC >0011 error can indicate that the ID words recorded on the disk sector are bad, or that the RESTORE command is unable to clear the seek failure. (controller status: >A810, >B810, >9810)

* TILINE is a registered trademark of Texas Instruments Incorporated.

Table 4-2. SVC Error Reports (Continued)

12 GAP ERROR DETECTED DURING DISK TRANSFER
[00]

Hardware Error. This report indicates an FD800 "GAP ERROR", or a TILINE transfer rate error. (Heavy TILINE bus activity can temporarily slow the TILINE transfer rate below the peripheral transfer rate.)

Action. The normal system retry should be successful. Inspect the configuration of the TILINE controllers. See the *TILINE Couplers Users Guide* for information about TILINE configurations. See *Check for Disk Problems* in Section 8. (controller status: > A808, > B808, > 9808)

13 DISK CONTROLLER TIME OUT
[00,20]

Hardware Error. The operation initiated an I/O operation on the disk, and the disk did not respond or complete in time. An internal command timer then terminated the disk controller command to prevent the operation from hanging indefinitely. (controller status: > A804, > B804, > 9804)

Action. Retry the operation. If it is still unsuccessful, see *Check for Disk Problems* in Section 8.

14 MEMORY PARITY ERROR DETECTED DURING DISK TRANSFER
[00]

Hardware Error. While attempting to transfer data from memory to the disk, the operation detected parity errors in the system memory.

Action. The system memory is probably faulty and should be serviced. You can find the actual address of the memory parity error in the system log. Word 5 and the right 5 bits of word 6 form the 21-bit TILINE address + 2 of the memory error. See *Check for Memory Problems* in Section 8. (controller status: > A880, > B880, > 9880)

15 PARITY ERROR DETECTED DURING DISK TRANSFER
[00]

Hardware Error. While attempting to transfer data, the operation detected parity errors. DX10 attempts up to 6 retries, and disk controllers can do up to 100 additional automatic retries (depending on the type of disk controller). This explains why an FD1000, for example, seems to *hang* when an operation reads a corrupted disk. You can calculate track locations from the system log error messages. Word 3 contains the cylinder address, and the right byte of word 1 is the head address. Multiply the cylinder address by the number of tracks per cylinder and add the head address. The resulting number represents the track number.

This error code can also be reported for a "STxx" (VDT) device. In this case, the CRT controller has detected a keyboard parity error, generally indicating a bad CRT controller or VDT power supply. (This problem can be very intermittent, or can happen only once when you turn on the terminal.)

Action. Attempt to recover the data from backup media. The disk pack may have developed bad spots, and you should reinitialize it with the Initialize Disk Surface (IDS) command. See *Check for Disk Problems* in Section 8. If your terminal appears to be at fault, call your dealer or customer representative for service. (controller status: > A840, > B840, > 9840)

Table 4-2. SVC Error Reports (Continued)

16 TIMING ERROR DURING DISK TRANSFER
[00]

Hardware Error. Due to heavy activity on the TILINE bus, the system was not able to complete the transfer.

Action. The normal system retry should be successful. If the error recurs, find the address of the error as described in the report for error > 15. See *Check for Disk Problems* in Section 8. (controller status: > A820, > B820, > 9820)

17 SEARCH ERROR DURING DISK I/O
[00]

Hardware Error. The synchronization (sync) character is missing between 2 sector marks. Like error > 0015, the system and disk retry the operation multiple times. A fatal > 0017 error indicates that a track is destroyed or that the disk pack is not initialized.

Action. Attempt to recover the data from backup media. The drive may need service, or the cartridge may be bad. (controller status: > A802, > B802, > 9802)

NOTE

A large number of > 0015, > 0017, or > 001E errors occurring on a single disk drive using known good disk packs can indicate a problem with disk drive servo positioning systems or read/write heads. See *Check for Disk Problems* in Section 8.

18 DISK UNIT IS OFFLINE
[00,20,38]

User Error/Hardware Error. The disk unit is not available to the controller either because it is not mounted, or not in the *start* or *ready* mode.

Action. Insert the disk pack into the drive, or wait for the drive to show ready. Insure that the controller to disk cables are securely connected. Otherwise, the disk drive may need service. (controller status: > C0F0, > C000, > 8000)

19 DISK UNIT IS NOT READY
[00,20,38]

User Error/Hardware Error. The disk unit is not available to the disk controller. This can indicate a failure in the servo control logic of the disk drive or a fatal error condition that caused the drive to retract its heads. Executing a Show Volume Status (SVS) command on a disk being initialized by the Initialize Disk Surface (IDS) command can also cause this error.

Action. Insert the disk pack in the drive or wait for the drive to show ready. If the error recurs, see if the drive needs servicing. Avoid performing the SVS command during an IDS command. See *Check for Disk Problems* in Section 8. (controller status: > 40F0, > 44F0, > 4000)

Table 4-2. SVC Error Reports (Continued)

1A DISK UNIT IS WRITE PROTECTED
[00]

Hardware Error. The disk drive addressed is write protected by the hardware, but the operation attempted to write to the disk.

NOTE

Do not confuse this error with attempting to write to a write protected file (software protected). For write protected file errors of this nature, see error code >76 in this Table, and apply the information there to SVC opcode >00.

Action. Disable the write protect on the drive or verify that the program is attempting to write to the correct device. Some disk units must be logically unloaded before a change in protection status takes effect. See *Reselect a Disk* and *Check for Disk Problems* in Section 8. (controller status: >20F0, >2000)

1A DISK WRITE PROTECTED
[38]

User Error. You attempted to initialize a new volume while the specified disk was write protected.

Action. Unprotect the disk and retry the request.

1B UNIT CHECK ERROR DURING DISK I/O
[00]

Hardware Error. The disk controller detected a unit check error for a disk drive. Changing media without following prescribed procedures or powering down the drive can cause this error.

Action. You must first determine if an improper media change procedure caused the error. You can determine this using the following procedure:

1. Ensure that the disk is physically installed. Physically removing a disk before logically unloading it (UV) can cause this error. The error report appears on the first disk access after powering up the drive with the new volume.
2. If the disk is physically installed, retry the I/O request.
3. If the error persists, and it is not due to changing disk packs, service is required.

This error is entered into the system log regardless of the reason. (controller status: >10F0, >1000, >14F0)

Table 4-2. SVC Error Reports (Continued)

1C ILLEGAL DISK ADDRESS
[00]

User Error/System Error/Hardware Error. Two causes exist for this error. Either the controller selected a head address that is too large, and caused an end-of-cylinder status, or the device service routine (DSR) detected a bad disk address in its call block. When the disk pack is installed, disk drive parameters are passed to the DSR that uses them to calculate disk addresses from ADU addresses. The maximum number of ADUs is written to the Volume Information sector. If that number is changed, a >001C error can occur. If the disk is incorrectly formatted, or if the disk controller returns invalid disk parameters, a >001C error can occur. The end-of-cylinder status can occur during normal operation, and in those cases, it does not produce an SVC error.

Action. If a faulty user's program issued the disk I/O, correct the program and resubmit it. Otherwise, the system issued a faulty request. You should verify the disk files for integrity and restore them from backup media, if necessary. If a standard DX10 utility (unmodified) produces this error, or if it is the result of file I/O, perform an initial program load (IPL) and try a disk pack that you know to be good. If the error still appears, see *Check for Disk Problems* in Section 8. If not, reinitialize the bad disk pack. (controller status: >0080)

1C ILLEGAL PROGRAM FILE LUNO
[14]

User Error. The program file LUNO specified in the SVC block was not assigned, or the LUNO was not assigned to a program file.

Action. Check the SVC block for the correct program file LUNO and make sure it is assigned at the time of the call.

1C DISK SEEK ERROR
[20]

System Error. Data used in disk I/O was not physically on the disk.

Action. Verify that the disk is formatted with release 3.X DX10 software. See *IPL the System* in Section 8 and try the SVC or command again. If the problem persists, perform an initial program load (IPL), and try a disk pack that you know to be good. If the error still appears, see *Check for Disk Problems* in Section 8. If not, reinitialize the bad disk pack.

1D SEEK INCOMPLETE
[00]

Hardware Error. Probably the disk drive is faulty, or an operation issued an illegal disk address. This error also results from an improper volume change procedure on the disk drive.

Action. Be sure to logically install and unload volumes (using the Install Volume (IV) and Unload Volume (UV) commands respectively) when you change media, to avoid this problem. Verify that the drive is functioning properly. Verify that the operation does not specify an illegal disk address. See error code >1C, and apply that information to SVC opcode >00. (controller status: >04F0, >0400)

Table 4-2. SVC Error Reports (Continued)

1E	DELETED SECTOR READ [00]

User Error/System Error/Hardware Error. If the disk in question is an IBM formatted FD800 diskette being read in an FD1000 disk drive, this message is normal because of differences in formatting. Sectors 9 through 26, Track 1 can normally show this error.

If this error occurs on an operation using a disk other than an FD800 diskette, the controller detected both an ID word error (> 11) and a data error (> 15).

Action. If the error results from using the IBMUTL utility, this is normal.

If you are not working with an FD800 diskette, and your program issued the disk I/O, then retry the operation. You should verify the integrity of the system, and the disk to which the I/O was performed. Check for > 11 and > 15 error conditions, but follow the action recommended by error > 17. See *Check for Disk Problems* in Section 8. (controller status: > A850, > B850, > 9850)

1F	SELF-TEST FAILURE [00]

Hardware Error. The disk unit failed to pass its internal diagnostic tests.

Action. Call Field Service. The TILINE status words in the system log will indicate the specific problem. See the installation and operation manual for the appropriate disk controller/drive for specific information.

20	LUNO IS IN USE [00,15]

User Error. (SVC opcode > 15 is compatible with DX10 2.2 only.) You attempted to release a LUNO that is currently in use (open), or tried to modify the characteristics of a LUNO assigned to a TPD device. You cannot release or modify a LUNO in such instances. The operation has not been performed.

Action. Verify that you attempted to release or modify the correct LUNO. If so, wait until the LUNO is free before retrying the SVC. See *Check File Access Conflicts* in Section 8.

21	BAD DEVICE NAME/DISK VOLUME NOT INSTALLED [00,15]

User Error. (SVC > 15 is compatible with DX10 2.2 only.) The device or volume name you supplied is either an illegal device or volume, or the volume is not installed. This error also occurs when an operation assigns a LUNO to a device that is not in the system. The operation has not been performed.

Action. Check the validity of the device or volume name and, if necessary, install the proper volume.

Table 4-2. SVC Error Reports (Continued)

22 LUNO PREVIOUSLY ASSIGNED
[00,15]

User Error. (SVC > 15 compatible with DX10 2.2 only.) You attempted to assign a LUNO that is already assigned. The operation has not been performed.

Action. Verify the LUNO assignment and determine if you tried to assign the proper LUNO. Then, if you find no problem, choose another LUNO, and retry the operation. Use the generate LUNO feature of the Assign LUNO I/O SVC, (see Volume III).

23 KEY INDEXED FILE AND SYSTEM SUPPORT DIFFER
[00]

User Error. There are two types of key indexed files: hashed and sequential placement. The file that the LUNO was to be assigned to is of the type other than the one generated into the system.

Action. Use a system with the correct placement algorithm designated during system generation to access the file. If you want to use the system in which the error occurred, you must rebuild the file. This can be done by performing a Copy Key Indexed File to Sequential File (CKS) command on a system generated with the correct placement algorithm, and then a Copy Sequential File to Key Indexed File (CSK) command on the system in which the error occurred.

25 INSUFFICIENT DISK SPACE
[00,15]

User Error. You attempted to create a file, but the disk allocation necessary to create the file exceeds the available space on the disk. The operation has not been performed.

Action. Evaluate the full size requested, and reduce it if possible. If this does not resolve the problem or a reduction in request size is not acceptable, the file cannot be created on the specified disk.

26 FILE ALREADY EXISTS
[00,15]

User Error. You attempted to create a file or add an alias file that already exists. The request has not been performed.

Action. Identify the existing file, and decide whether to delete the first file or choose another filename for the second file. Then retry the operation.

27 NO FILE DEFINED BY NAME SPECIFIED
[00,15]

User Error. You attempted to assign a LUNO to a file, but the file you specified does not exist. The operation has not been performed.

Action. Determine whether the file name you specified is correct. If necessary, create the file and retry the operation. If the error occurs when you are specifying one of the pseudo devices (LP$X), verify that .S$PRINT exists.

Table 4-2. SVC Error Reports (Continued)

28 MEMORY PROTECTION VIOLATION IN SVC CALL BLOCK
[00,2D]

User Error. This error indicates that a buffer address or the SVC block itself is in an area of memory that you specified as write protected when you installed the task or procedure.

Action. Modify the program or the memory protection area to allow access to the SVC block, or move the call block and/or buffer.

29 NO SYSTEM TABLE SPACE AVAILABLE
[00,15]

User Error. You attempted to assign a LUNO, but the system could not allocate memory for the internal data structure necessary for a LUNO assignment. The operation has not been performed.

Action. Retry the request. If this problem occurs frequently, regenerate the system to include a larger system table area.

2A SYSTEM CANNOT GET MEMORY
[00]

User Error/System Error. The requested memory allocation is not available.

Action. Reduce the load on the system, or try again later.

2C UNABLE TO RELEASE SYSTEM LUNO
[00,15]

User Error/System Error. You (or the system) attempted to release a system LUNO. System LUNOs cannot be released. The operation has not been performed.

Action. Determine whether the LUNO specified is the proper LUNO. If so, you must use the Modify LUNO Protection (MLP) command to first unprotect the LUNO before you reattempt to release it.

WARNING

Do not release any LUNOs assigned by the system, such as system reserved LUNOs. See Volume V of the DX10 manuals.

2D BAD DEVICE NAME
[00,15]

User Error. You attempted to assign a LUNO to a device that is not a valid device on this system. The operation has not been performed.

Action. Determine if the device name syntax you specified is valid. If it is, the device does not exist. The request cannot be serviced. Specify a valid device name, and retry the operation.

Table 4-2. SVC Error Reports (Continued)

2E ABNORMAL TERMINATION
[00]

User Error. An attempted operation caused the processor to terminate abnormally.

Action. Verify that the request is legal for the processor and resubmit the task. See *IPL the System* in Section 8. If the error persists, call your dealer or customer representative for software help.

30 OPERATION EXCEEDS RANGE OF FILE
[00,25,26,27]

User Error. An I/O SVC attempted to access a record that is beyond the extent of the file.

Action. The error is normal for the following:

1. A sequential file read past the last record (including EOF marks) in the file.
2. A relative record file using a write EOF operation that specifies a record number past the disk space allocated to the file.

Both cases require you to correct the program logic. In all other cases (especially KIF and program files), this error indicates that the directory structures describing the file, or the internal structures of the file, have been damaged. If the error occurs while you are accessing a KIF, you are possibly misusing the MKL command. See *Rebuild the File* in Section 8.

36 FILE I/O HAS TERMINATED ABNORMALLY
[00]

System Status. Another program aborted the file I/O.

Action. Abort the program, or delay and try accessing the file later.

3A UNABLE TO ALLOCATE SYSTEM TABLE AREA
[00]

System Error. An operation attempted to obtain space in the system table area, but none was available.

Action. Reduce the activity in the system, or regenerate the system to obtain a larger system table area.

3B UNABLE TO GRANT REQUESTED ACCESS PRIVILEGES
[00]

User Error. One of two situations exist. The first is that you requested access privileges to a file. However, another operation opened the file before you, and the access privileges contained in that open request conflict with the access privileges contained in your request to open the file. See Volume III for information about file access privileges. The second situation is that a nonprivileged program requested other than read only privileges on a special usage file (image, directory, or program).

Action. Either reduce the scope of the access privileges that your program requires, or wait until the file is available. See *Check for File Access Conflicts* in Section 8.

Table 4-2. SVC Error Reports (Continued)

3E BLOCK NUMBER IS OUT OF RANGE FOR DISK
[00]

System Error. An internal consistency check on a file's structure generated this error.

Action. Perform an initial program load (IPL) and retry the operation. If the problem persists, see *Rebuild the File* in Section 8.

3F INVALID PARAMETERS IN INTERNAL SYSTEM STRUCTURES
[00]

System Error. An internal consistency check on a file's structure generated this error.

Action. Perform an initial program load (IPL) and retry the operation. If the problem persists, see *Rebuild the File* in Section 8.

40 MAG TAPE CONTROLLER TIME OUT
[00]

User Error/Hardware Error. The controller for the magnetic tape unit did not respond to a command from the system software. This error occurs when the tape controller attempts to read a blank tape.

Action. If the tape is known to contain data at the point where the read was issued that resulted in the time-out, and several good tapes give the same error, the controller or magnetic tape drive is probably faulty and should be serviced. Otherwise, the tape is blank at the point the read was issued, and you should restore the data to the tape.

41 BEGINNING OF TAPE
[00]

User Error. The tape controller detected a beginning-of-tape mark while attempting a backspace operation. The first record on the tape may not be readable, either because the tape is bad, or because the density is incorrect (800 bpi on 1600 bpi drive).

Action. Ensure that you addressed the proper tape drive. Check for logic errors in your program. Verify that the tape density is correct for the drive.

Table 4-2. SVC Error Reports (Continued)

42 END OF TAPE
[00]

System Status. The tape controller detected an end-of-tape mark while attempting a read, write, or forward space operation. The tape is positioned after the last record read, written, or spaced over.

Action. If the operation is a write, terminate the reel by writing an end-of-volume indicator of your choice. Several feet of tape past the end of tape marker are available for writing some data and the end-of-volume indicator. The application program can then request that a new tape reel be mounted. If the operation is a read or forward space, the application program should read until it finds the end-of-volume indicator. The record written or read at the time the EOT status is returned has no errors in it.

NOTE

These operational characteristics are different from previous releases of DX10. It is now possible to read and write data past the EOT marker, where previously it was not. However, programs written to work with previous releases of DX10 should continue to function properly.

43 MAG TAPE UNIT IS OFFLINE
[00]

Hardware Error. Either a reel of tape needs to be mounted or the reel is not correctly loaded.

Action. Mount and/or load a reel of tape. If a tape cannot be mounted, or this error occurs when a reel is mounted, the tape drive should be serviced.

44 WRITE-RING IS MISSING FROM A REEL OF TAPE
[00]

Hardware Status. An operation attempted to write to a tape reel that does not have a write-ring mounted.

Action. Verify that the program expects a writable tape, and insert a write-ring on the reel.

45 PARITY ERROR ENCOUNTERED ON MAG TAPE
[00]

Hardware Error. The data being read contains parity errors.

Action. The data on the tape is faulty, or the tape is bad and needs replacing. Recovery of data is often not simple. See *Recover Tape Data* in Section 8.

46 MEMORY PARITY ERROR DETECTED BY MAG TAPE CONTROLLER
[00]

Hardware Error. The data being written to tape contains parity errors.

Action. The memory in the system is probably faulty and should be serviced. Rewrite the data to tape, and call your dealer or customer representative.

Table 4-2. SVC Error Reports (Continued)

47 MAG TAPE CONTROLLER ABNORMAL COMPLETION
[00]

Hardware Error. The magnetic tape controller has reported the abnormal completion of a transfer.

Action. The tape unit may need service. If necessary, attempt to recover data by retrying the operation.

48 TILINE TIME-OUT DURING MAGTAPE I/O
[00]

User Error/Hardware Error. The TILINE time-out probably indicates that the address of the memory specified for the transfer is not within the physical address space of the system.

Action. Verify the address in the user program. The error may also reflect a problem with system memory. See *Check for CPU Problems* in Section 8.

49 MAG TAPE FORMAT ERROR
[00]

Hardware Error. The reel of tape that the operation is reading is not formatted correctly. The tape reel may not be initialized, or it may have been erased, or the data on the tape is lost.

Action. Ensure that the tape is the right density for the drive. Attempt to recover or recreate data from other media. See *Check for Magnetic Tape Problems* in Section 8.

4A TIMING ERROR DURING MAG TAPE TRANSFER
[00]

Hardware Error. Data was not successfully transferred because of high activity on the TILINE.

Action. The normal system retry should eventually be able to complete the transfer. If the error persists, see *Check for Magnetic Tape Problems* in Section 8.

4F END-OF-TAPE AND UNIDENTIFIED ERROR
[00]

System Error. The controller sensed the EOT marker plus an unidentified error. The operation failed.

Action. Retry the operation. If the error persists, the data on the tape is faulty, or the tape is bad and needs replacing. Recovery of data is often not simple. See *Recover Tape Data* in Section 8. Inspect the system log to identify the error.

50 PARITY ERROR
[00]

Communication Error. The data read contains at least one character with a parity error.

Action. The device service routine (DSR) parity error replacement character replaces the erroneous character.

Table 4-2. SVC Error Reports (Continued)

50 BAD OBJECT FORMAT
[25,26,27]

User Error/System Error. This error occurs during an install operation. Some possible causes are checksum error, invalid tag, or missing parts of the object.

Action. If you changed any of the object, verify the checksum as well as the actual changes. If a portion of the object is missing, generate a new object. Reenter the install request and proceed.

51 FRAMING ERROR
[00]

Communication Error. The controller did not detect a proper start bit or stop bit associated with at least one character of the last read. The data read might contain invalid data.

Action. Verify the data, and retry the operation.

51 GIVEN ID IS ALREADY DEFINED
[25,26,27,28,29,2A,31]

User Error. The given ID is already in the program file.

Action. Pick an ID that is not being used or delete the present ID. You can then resubmit the task.

52 LOST CHARACTERS
[00]

System Error. A keyboard status block (KSB) buffer overflow caused characters to be lost on the last read operation. On 931 and 940 VDTs, this error could also indicate an overrun error (characters coming to the host too fast for the DX10 software to handle properly).

Action. Regenerate the system for a larger character buffer at the port for your terminal (TPD, 931, or 940). If an overrun error is indicated, regenerate the system with the 931 or 940 VDT at a higher priority interrupt, reduce its speed, and avoid sharing interrupts.

52 GIVEN NAME IS ALREADY DEFINED
[25,26,27]

User Error. The given name for the image type specified in the SVC is already in the program file.

Action. Pick a name that is not being used or delete the present name. You can then reenter the install request.

53 MISSING COLON RECORD IN OBJECT FILE
[25,26,27]

User Error/System Error. The colon card of the object is missing.

Action. Generate a new object. You can then reenter the install request.

Table 4-2. SVC Error Reports (Continued)

54 NO ID IS AVAILABLE
[25,26,27]

User Error. The program file already contains the maximum allowed entries of the desired type.

Action. Use the Modify Program File (MPF) command to verify the state of the program file. Delete an entry of the desired type from the program file, and retry the install request. Alternately, place the entry in a different program file.

55 LENGTH IN OBJECT IS ZERO
[25,26,27]

User Error. Your object contains no data or it is an absolute module.

Action. Check the source that created the object. Make sure that an AORG directive is not included. If it is not, the source should be reassembled and the installation retried.

56 NO OBJECT LUNO GIVEN
[25,26,27]

User Error. You did not provide a LUNO in the object LUNO field.

Action. Assign a LUNO to the object file and place it in the object file LUNO field of the SVC. Retry the install request.

57 NO PROGRAM FILE LUNO GIVEN
[25,26,27,37]

User Error. You did not provide a LUNO in the program file LUNO field.

Action. Assign a LUNO to the program file and place it in the program file LUNO field. Retry the request.

58 NAME NOT FOUND IN DIRECTORY
[0F,28,29,2A,31]

User Error. The name you provided is not in the program file for the type specified.

Action. Check the name and type of file that you specified against the output of a Map Program File (MPF) command. Change the name, the type, or both as necessary, and retry the request.

59 PFLUNO NOT A PROGRAM FILE
[25,26,27,28,29,2A,31,37]

User Error. The LUNO you gave as the program file LUNO is assigned to a file other than a program file.

Action. Reassign the LUNO to the correct program file and retry the request.

Table 4-2. SVC Error Reports (Continued)

5A OBJECT LUNO NOT ASSIGNED TO A SEQUENTIAL FILE
[25,26,27]

User Error. The LUNO you gave as the object file LUNO is not assigned to a sequential file.

Action. Verify that the file is the correct object for the task. If not, retry the SVC or command using the correct object file. If necessary, reassemble, recompile, or relink the program.

5B LUNO NOT ASSIGNED
[25,26,27,28,29,2A,37]

User Error. The LUNO you gave as the program file LUNO is not assigned to anything.

Action. Assign the LUNO to the program file and resubmit the task.

5C INVALID OVERLAY LINK
[25,27,28,2A]

System Error. The program file's internal links are destroyed.

Action. Perform a Copy Directory (CD) command on the program file and resubmit the task using the new program file. If the CD command fails or the task still fails with this error when run on the new program file, you must delete the task. Delete the task's overlays first, and then the task. If this does not correct the problem, delete the entire program file, and rebuild it.

5D ID NOT PROVIDED AS REQUIRED
[28,29,2A,31]

User Error. You did not specify a task ID as required by the operation.

Action. Specify the desired ID and retry the SVC or command.

5E INVALID TYPE GIVEN FOR MAP NAME
[31]

User Error. The bits specifying the type (task, overlay, or procedure) are set incorrectly.

Action. Set the bits to the correct type and retry the request.

5F ID TO DELETE IS NOT DEFINED
[28,29,2A]

User Error. The ID to be deleted does not exist for the type specified.

Action. Check the type bits and the ID value against a map of the program file. (Use the Map Program File (MPF) Command.) Change the ID or type or both to the correct values and resubmit the task.

Table 4-2. SVC Error Reports (Continued)

60 ODD RECORD LENGTH SPECIFIED
[00,15]

User Error. You have attempted to create a file with either an odd physical or odd logical record length.

Action. Identify the improper specification and retry the SVC or command.

60 NO ATTACHED PROCEDURE 1 FOR SYSTEM TASKS
[25]

User Error. It is illegal to provide procedure one if the task is being installed as a system task.

Action. Retry the Install Task SVC or command using procedure two or no procedures instead of procedure one.

61 ZERO INITIAL FILE ALLOC. SPECIFIED
[00,15]

User Error. You attempted to create a nonexpandable file with an initial file allocation of zero.

Action. Identify the improper specification and retry the request.

61 BAD DISK NAME
[20]

User Error. You attempted to install a volume where the device name specified is not valid.

Action. Identify the correct device name. Retry the SVC or command.

61 ID OUT OF RANGE
[25,26,27,28,29,2A,31]

User Error. The ID you gave exceeds the maximum value permitted for the given type of program file (task, procedure, or overlay.)

Action. Use the Modify Program File (MPF) to check the maximum defined when the file was created. Check the values given for the program file, type, and ID. Correct the erroneous ID(s) and rerun the task or command.

62 PHYSICAL RECORD SIZE LESS THAN MINIMUM
[00,15]

User Error. You attempted to create a file specified as a sequential file with a physical record length less than the minimum (10 characters).

Action. Identify the correct file specification and resubmit the request.

62 ILLEGAL CHARACTER IN DISK NAME
[20]

User Error. You attempted to install volume where the disk name specified is not syntactically correct.

Action. Correct the syntax error and resubmit the request.

Table 4-2. SVC Error Reports (Continued)

63 PHYSICAL RECORD LENGTH LESS THAN LOGICAL RECORD LENGTH
[00,15]

User Error. You attempted to create a file with the physical record specified less than the logical record length.

Action. Specify a valid logical to physical record size ratio and retry the request. See Volume III for a discussion of file record lengths.

63 BAD VOLUME NAME
[20,34,38]

User Error. You attempted to access a volume. If the request was to unload or install a volume, the specified volume name could not be found. If the request was to initialize a new volume, the volume name syntax is invalid.

Action. You should identify the proper volume or correct the syntax of the volume name and retry the request. Check for synonyms with names identical to those of the drives of volumes you are trying to install. See *Check the Volume Structures* in Section 8.

64 LOGICAL RECORD LENGTH EQUAL TO ZERO
[00,15]

User Error. You attempted to create a file specified as a key indexed file with a logical record length of zero.

Action. Specify a nonzero value for the logical record length, and retry the SVC or command.

64 ILLEGAL CHARACTER IN VOLUME NAME
[20]

User Error. You attempted an install volume, and the volume name you specified contains a character that is not alphabetic or numeric.

Action. Identify the correct volume name syntax and retry the request.

65 KEY BLOCK LENGTH INCORRECT FOR NUMBER OF KEYS SPECIFIED
[00,15]

User Error. You attempted to create a key indexed file with the key specification block improperly defined. The length of the specified block is inconsistent with the number of keys specified.

Action. Correct the inconsistency and rerun the SVC.

65 DEVICE IS NOT A DISK
[20]

User Error. You attempted an install volume, and the device you specified is not a disk.

Action. Identify the correct disk device and retry the install SVC or command.

66 NO KEYS SPECIFIED
[00,15]

User Error. You attempted to create a key indexed file with no keys.

Action. Resubmit the request, making sure to specify at least one key (the primary).

Table 4-2. SVC Error Reports (Continued)

66 VOLUME NAMES DON'T MATCH
[20]

User Error. You attempted to install a volume, but the volume name you specified does not match the name found on the disk pack.

Action. Verify that the disk in the drive is the one you want by performing a Show Volume Status (SVS) command. If the disk is not the one you want, remove it and install the proper one. Otherwise, retry the installation, specifying the correct volume name.

67 NUMBER OF KEYS EXCEEDS MAXIMUM
[00,15]

User Error. You attempted to create a key indexed file with the number of keys exceeding the maximum of fourteen.

Action. Resubmit the request, and specify a legal number of keys.

67 NO TABLE SPACE
[20]

System Error. You attempted to install a volume, but the system is unable to allocate system table space for VCATALOG and/or the disk manager work area. The operation has not been performed.

Action. Retry the request at a later time. If the problem occurs frequently, regenerate the system with a larger table area.

68 NUMBER OF RECORDS SPECIFIED EQUALS ZERO
[00,15]

User Error. You attempted to create a key indexed file with the number of records specified equal to zero.

Actions. Correct the record specification and retry the request.

68 COULDN'T FIND VCATALOG
[20]

User Error. You attempted to install a volume, but the specified disk did not have a VCATALOG.

Action. The disk is not a DX10 3.X format disk. Use another disk.

69 PRIMARY KEY SPECIFIED OPTIONAL (MODIFIABLE)
[00,15]

User Error. You attempted to create a key indexed file with the primary key specified as optional (modifiable).

Action. Correct the primary key specification and resubmit the request.

Table 4-2. SVC Error Reports (Continued)

69 DISK PREVIOUSLY INSTALLED
[20,38]

User Error. You attempted either to install a volume or initialize a new volume, but the specified disk drive has a volume already installed, or you attempted to install a disk that is being initialized. The operation has not been performed.

Action. Determine if you entered the proper disk device name. Then determine whether to resubmit the request with another device specified or unload the current volume and resubmit the request. Wait for initialization to complete.

6A KEY FIELD EXTENDS BEYOND PHYSICAL RECORD
[00,15]

User Error. You attempted to create a key indexed file with a key field defined to extend beyond the end of the logical record, so that a logical record long enough to hold all the keys fulfills the condition of SVC error > 6D.

Action. Correct the key specifications to fall within the record length and resubmit the request. See Volume III for KIF information.

6A BAD ADU LIST IS FULL
[38]

System Error. You attempted to initialize a new volume, but the number of bad ADUs exceeds the capacity of the bad ADU list on the disk. The operation has not been performed.

Action. Replace the disk pack with one with less bad tracks specified, and resubmit the request.

6B PHYSICAL RECORD LENGTH TOO SMALL TO HOLD MINIMUM KEY BLOCKING FACTOR
[00,15]

User Error. You attempted to create a key indexed file, but the defined physical record size is unable to block the keys as specified. The keys must be blocked at a minimum factor of four to one (4:1).

Action. Define a larger physical record size, or smaller keys, and resubmit the request. A key of size KS such that PRL< (KS + 6) x 4 + 20 will cause this error. See Volume III for more information on key indexed files.

6B NOT ENOUGH CONTIGUOUS ADUs
[38]

Hardware Error. You attempted to initialize a new volume, but the system could not find enough contiguous ADUs to build VCATALOG. The operation has not been performed.

Action. Replace the disk pack and resubmit the request or request a smaller VCATALOG directory size.

Table 4-2. SVC Error Reports (Continued)

6C PHYSICAL RECORD LENGTH UNABLE TO ACCOMMODATE SPECIFIED # OF RECORDS
[00,15]

User Error. You attempted to create a key indexed file with the defined record size unable to accommodate all the keys or logical records as defined by the estimated number of records.

Action. Define a larger physical record length and resubmit the request.

6C TASK MEMORY ALLOCATION ERROR
[38]

System Error. You attempted to initialize a new volume, but the system was unable to get the memory necessary to buffer the copying of the system loader to the initialized disk.

Action. See *Check the Available Memory Size* in Section 8. If memory size is smaller than 16 K bytes, this problem might appear. If the error persists, call your dealer or customer representative for software help.

6D PHYSICAL REC SIZE UNABLE TO ACCOMMODATE MINIMUM BLOCKING OF LOGICAL RECORDS
[00,15]

User Error. You attempted to create a key indexed file with the physical record size too small to accommodate a blocking factor of one logical record plus overhead.

Action. Define a physical record length at least 22 bytes larger than the logical record length in order to accommodate the blocking, and retry the request.

6D TRACK 0 OR 1 IS BAD OR NO GOOD CYLINDERS FOUND
[20,38]

Hardware Error. You attempted to initialize a new volume, but the specified disk contains either a bad track 0 or 1 or both. Alternately, a good diagnostics cylinder was not found. The disk pack cannot be used in this condition.

Action. Discard the disk cartridge and initialize one with a good track 0 and track 1 and at least one good cylinder for diagnostics.

6E INTERSECTION ON NON-MODIFIABLE & MODIFIABLE KEYS
[00,15]

User Error. You attempted to create a key indexed file with a key specified as nonmodifiable overlapping a key specified as modifiable.

Action. Identify the improper key specification and correct it, then resubmit the request.

Table 4-2. SVC Error Reports (Continued)

6F LUNOS ASSIGNED TO FILE
[30,34]

User Error. You attempted to unload a volume, but the specified volume has LUNOs assigned to it, and therefore cannot be unloaded, or you attempted to use a volume that is being initialized. Therefore, the operation was not performed.

Action. See *Check for File Access Conflicts* in Section 8. Identify the LUNOs assigned to the volume and release them, then resubmit the request. Wait for initialization to complete.

6F USER MUST EXECUTE IDS COMMAND BEFORE ISSUING INV SVC
[38]

User Error. Before a disk can be initialized for system use, the surface must be initialized, and any bad tracks identified by the disk manufacturer must be specified during initialization.

Action. Use the Initialize Disk Surface (IDS) command to initialize the disk surface before attempting to issue an Initialize New Volume (INV) SVC.

70 DIRECTORY IS NOT EMPTY
[00,15]

User Error. You attempted to delete a directory file with a Delete File (DF) command, but the specified directory currently contains files and cannot be deleted by the DF command. Directory structures are possibly damaged. The operation has not been performed.

Action. Identify the files in the directory. If desired, delete the files in the directory before attempting to delete the directory file itself. If you suspect that directory structures have been damaged, (the List Directory (LD) command shows no files), see *Check the Directory Structures* in Section 8.

70 TRACK 1 LOADER TOO LARGE
[20,38]

User Error. The user-written track 1 loader requested in an Initialize Volume (INV) command is too large.

Action. If you entered the correct pathname for the loader, you must reduce the user-written loader in size. The first two sectors of the disk are copied into the last two sectors of track one. This space is not available for the loader.

71 BAD FILE TYPE SPECIFIED
[00,15]

User Error. You specified an invalid file type for the current operation.

Action. You should identify the correct file type and resubmit the request.

Table 4-2. SVC Error Reports (Continued)

72 BAD USAGE FLAGS SPECIFIED
[00,15]

User Error. You assigned a LUNO to either a directory, image, or program file without setting the special usage flags in the Assign LUNO call block.

Action. Check to see if the specified file is correct for the intended use. Set the proper flags and retry, or enter a YES to the PROGRAM FILE? prompt on an Assign LUNO (AL) or Assign Global LUNO (AGL) command. The Show File (SF) command cannot be used on special usage files.

73 FILE ALLOCATION IS TOO FRAGMENTED
[00,15]

User Error. You attempted to create a file, but the disk allocation for the file has become too fragmented to create it. The operation has not been performed.

Action. Clean up the disk allocation by copying files to another disk, then resubmit the request. The new disk will have the files arranged to minimize unusable gaps.

74 BAD PARAMETERS ON CREATE
[00,15]

User Error. You specified invalid parameters to create a file. The operation has not been performed.

1. List of possible causes for all file types:
   a. Odd logical record length
   b. Odd physical record length
   c. Nonexpandable file with an unspecified (0) primary allocation
   d. A physical record length less than logical record length (default physical record length used in this comparison if user's supplied value equals zero)
2. Possible cause for sequential files:
   a. Sequential file with physical record length less than ten bytes.

Table 4-2. SVC Error Reports (Continued)

3. List of possible causes for key indexed files:
   a. Allowing default of logical record size (there is no default for logical record size, therefore, you must specify one).
   b. (Physical record size − 18) is less than (logical record size + 4).
   c. Key length is greater than 64.
   d. The number of keys specified equals zero.
   e. The number of keys specified is greater than 14.
   f. Key descriptor block contains insufficient information.
   g. Insufficient B-tree blocks to accommodate maximum number of expected records
   h. File defined by parameters requires greater than FFFF total blocks.
   i. Primary key specified as modifiable.
   j. Maximum size parameter equals zero.
   k. Unable to accommodate at least 4 keys per physical record
   l. Nonmodifiable keys cannot overlap modifiable keys.

Action. You should examine the preceding list for possible causes of the error. After you have identified the error, correct it and resubmit the request.

75 LUNO ASSIGNED TO FILE
[00,15]

User Error. You attempted to access a file that has a LUNO assigned to it. If the request was to delete a file, delete protect a file, unprotect a file, write protect a file, or rename a file, the operation has not been performed.

Action. Identify the file usage, wait for the file to be free, and resubmit the request. See *Check for File Access Conflicts* in Section 8 for LUNOs assigned.

76 FILE IS DELETE OR WRITE PROTECTED
[00,15]

User Error. You attempted to delete a file that is delete protected. The operation has not been performed.

Action. Verify the file status. Use a different file, or modify the file protection and resubmit the request.

77 LUNO NOT ASSIGNED TO FILE
[00,15]

System Error. You attempted to either add an alias or rename a file, but the source file did not have a LUNO assigned to it. The LUNO has not been assigned properly and the operation has not been performed.

Action. Check the validity of the source (old) file. If it is correct, be sure a valid LUNO is assigned to it, and resubmit the request.

Table 4-2. SVC Error Reports (Continued)

78 LUNO AND PATHNAME DON'T MATCH
[00,15]

User Error. You attempted to add an alias to a file, but the directory pathname of the source file and the directory pathname of the alias are not the same. The operation has not been performed.

Action. Correct the inconsistency in the directory pathname and resubmit the request. You can add aliases only within the same directory as the file.

79 FILE ISN'T AN ALIAS
[00,15]

User Error. You attempted to delete an alias, but the file pathname was not an alias. The operation has not been performed.

Action. Identify the proper alias file pathname and resubmit the request.

7A FILE EXISTS AND REPLACE NOT SPECIFIED
[00,15]

User Error. You attempted to rename a file, but the file already exists, and you specified DO NOT REPLACE. The operation has not been performed.

Action. Identify the status of the file and determine whether to replace the file and resubmit the request.

7B LUNO AND PATHNAME NOT ON SAME DISK
[00,15]

User Error. You attempted to rename a file with a pathname that is on another volume. This operation cannot be performed.

Action. Identify the proper volume, correct the pathname, then resubmit the request. Move the files to another volume by copying them.

7C BAD DATA FORMAT
[00]

User Error. You attempted to create a file, but the data format you specified was not legal. The data type must be either blank suppressed or binary. The operation has not been performed.

Action. Identify the proper data format and resubmit the request.

7D BAD LUNO SCOPE
[00,15]

User Error. You attempted to assign a LUNO, but the LUNO scope was not valid. The LUNO scope must be one of the following: global, task local, or station local. The operation has not been performed.

Action. Specify a valid LUNO scope and resubmit the request.

Table 4-2. SVC Error Reports (Continued)

7E NO STATION FOR STATION LOCAL LUNO
[00]

System Error. The system encountered inconsistent system data structures.

Action. See *IPL the System* in Section 8. If the problem persists, call your dealer or customer representative for software help.

7F REQUESTED OPERATION ILLEGAL ON VCATALOG
[00,15]

User Error. You attempted to delete protect a file, rename a file, unprotect a file, or write protect a file, specifying VCATALOG as the file. This is illegal. The operation has not been performed.

Action. You cannot perform the above operations on VCATALOG.

80 ILLEGAL PRIORITY SPECIFIED
[25]

User Error. The specified priority is outside the ranges the SVC allows.

Action. Make the specified priority 0 through 3, or > 80 through > FF. Retry the SVC.

81 INVALID HEAD/CYLINDER INPUT
[38]

User Error. You attempted to initialize a new volume, but the bad track list you specified contains an illegal track specification; either a bad head or cylinder value. (It is either too large, or contains illegal characters.)

Action. Identify the correct bad track specification and resubmit the request.

82 ANOTHER VOLUME IS INSTALLED
[20,38]

User Error. You entered either an Install Volume (IV) or Initialize New Volume (INV) command when a volume of the same name is already installed. The volume names on a system must be unique.

Action. Either wait until the other volume is unloaded, or rename your volume using the Modify Volume Information (MVI) command. Then retry the request.

83 SAME VOLUME NAME
[20,38]

User Error. You entered an Install Volume (IV) command, but the specified volume is already installed in the specified disk drive. The operation has not been performed.

Action. Determine if the installed disk is the proper disk by entering the Show Volume Status (SVS) command and checking to see if the NAME INSTALLED field is correct.

83 FREED AREA NOT IN LIST
[28,29,2A]

System Error. The program file's available space list is incorrect. This is an internal error.

Action. See *Rebuild the Program File* in Section 8.

Table 4-2. SVC Error Reports (Continued)

84 LIST TABLE OVERFLOW
[28,29,2A,37]

System Error. The program file is too fragmented to add anything more to it.

Action. Copy the program file to another file. This results in a nonfragmented copy of the file. Then resubmit the request using the new program file.

85 BAD PRIORITY
[25]

User Error. The task's defined priority is outside the limits of legal priorities.

Action. Change the priority to a legal priority (0 through 4, or real time 0 through 127) and retry the install request.

86 BAD OBJECT LUNO ASSIGNMENT
[25,26,27]

User Error. The object LUNO is not assigned to a device or a sequential file.

Action. Confirm the object is on a device or sequential file. Reassign the LUNO to the object and retry the install request.

87 CALLER NOT PRIVILEGED
[25,26,27,28,29,2A,37]

User Error. You must be privileged to use the program file SVCs.

Action. You must change the task to a privileged task and then must resubmit the task, or use standard commands to manage the program file.

88 TASK, PROCEDURE, OR OVERLAY IS DELETE PROTECTED
[28,29,2A]

User Error. The entry you want to delete is delete protected.

Action. Verify that you want to delete the entry. Use the Modify Overlay Entry (MOE), Modify Procedure Entry (MPE), or Modify Task Entry (MTE) commands to modify the protection of the entry and resubmit the task.

89 PRL SIZE TOO LARGE TO BE MAPPED INTO SYSTEM
[00]

User Error. The physical record size is too large to allow the file management task to block and deblock it and the user's buffer at the same time.

Action. Retry the operation using a system with a smaller root or smaller system table. Usually, regenerating the system using the old configuration and changing the TABLE specification is sufficient. However, in very large systems you may need to change the device configurations (that is, you may need to leave out some of the devices). See the *System Generation Troubleshooting* section of Volume V.

Table 4-2. SVC Error Reports (Continued)

8A TASK LENGTH TOO LARGE
[25,26,27]

User Error. You submitted either a task larger than >FFE0 bytes, or a system task larger than >3FE0 bytes.

Action. Modify the task so that part of it is an overlay and then install it.

8B TASK ASSOCIATED WITH OVERLAY DOES NOT EXIST
[25,26,27]

User Error. The task the overlay belongs to is not presently in the program file.

Action. Delete the overlay and then reinstall the task. After you install the task, reinstall the overlay.

8C ATTACHED PROCEDURE IDS ARE THE SAME
[25,26,27]

User Error. Both of the task's procedures have the same ID.

Action. Change the ID of one of the procedures and reinstall the task.

8D NO SPACE ON PROGRAM FILE LARGE ENOUGH
[25,26,27]

User Error. The program file was created nonexpandable and it has run out of space.

Action. Create a new program file that is expandable, and use the Copy Directory (CD) command to copy the old program file to a new one. Resubmit the task using the new program file.

8E END ACTION TAKEN
[25,26,27,28,29,2A,31,37]

User Error/System Error. You did not allow the SVC to complete. Either you killed the task or a fatal task error was encountered.

Action. Expect this message if you kill the task. See *IPL the System* in Section 8 and retry the task. If the error persists, see *Rebuild the Program File* in Section 8 for S$PROGA.

90 BAD DIRECTORY
[00,15]

User Error/System Error. Generally, this indicates that the directory is at least partially destroyed.

Action. See *Check the Directory Structures* in Section 8. You may need to recreate the directory. Check to see if files on the directory are still accessible.

91 INCONSISTENT DIRECTORY OVERHEAD RECORD
[00,15]

User Error/System Error. The directory overhead indicates that there is an available entry in the directory, but the system cannot find it.

Action. See *Check the Directory Structures* in Section 8. You may need to recreate the directory. If you need assistance, call your dealer or customer representative.

Table 4-2. SVC Error Reports (Continued)

92 BAD PATHNAME SYNTAX
[00,15]

User Error. You attempted to assign a LUNO to a file, but the pathname you specified was not syntactically correct. The operation has not been performed.

Action. Correct the syntax error in the pathname and resubmit the request.

99 NO LUNOS AVAILABLE FOR GENLUN
[00,15]

System Error. You attempted to assign a LUNO with autogenerate specified for the logical unit number assignment, but no more LUNOs are available. The operation has not been performed.

Action. Evaluate the LUNO usage. It takes 256 LUNO assignments visible to a task, including system LUNOs, to produce this error. If necessary, release any unnecessary LUNOs. After doing so, resubmit the request.

9A NON-LEAF PNC IS NOT A DIRECTORY
[00,15]

User Error. You attempted to assign a LUNO to a file, but the specified directory pathname is not a directory. Only the lowest level pathname component may be a file. All levels above that must be directories. The operation has not been performed.

Action. Determine the correct pathname with the proper usage of directories for non-leaf nodes and resubmit the request.

9B DEVICE IS OFFLINE
[00]

User Error. You attempted to assign a LUNO to a device that is offline. The LUNO assignment was unsuccessful.

Action. Determine why the device is offline. If it is operational, change the device state by using the MDS (Modify Device State) command.

9C DEVICE IS IN THE INCORRECT STATE
[00]

User Error. You attempted to assign a LUNO to a device not in the ON state.

Action. Wait until the device is available, or use the List Device Configuration (LDC) command to verify the state of the terminal.

9D DEVICE IS IN AN UNDEFINED STATE
[00]

System Error. The device being used is in an undefined state.

Action. Verify system integrity, then perform an initial program load (IPL). If the error persists, call your dealer or customer representative for software help.

Table 4-2. SVC Error Reports (Continued)

A1 DIRECTORY IS FULL
[00,15]

User Error. You attempted to create a file, but the target directory did not have any entries available. The operation has not been performed.

Action. Create a new directory with an adequate number of entries to accommodate the necessary number of files, and resubmit the request. If desired, copy the files in the old directory to the new one, and after verifying the copy, delete the old directory.

B0 FILE INCONSISTENT, SHOULD BE RECONSTRUCTED
[00]

Software Error/Hardware Error. The key file is logically unreadable.

Action. Reconstruct the file. See *Rebuild the Key Indexed File* in Section 8.

B1 THE FILE'S MAXIMUM CAPACITY HAS BEEN REACHED
[00]

User Error. You entered more records into a key indexed file than the blocking of one of the keys allows, given the fixed maximum depth of the key tree structure. This rarely causes an error unless a key is quite large and the physical record size is small.

Action. Reconstruct the file with a larger physical record size. See *Rebuild the Key Indexed File* in Section 8.

B2 LOGICAL RECORD IS TOO LARGE
[00]

User Error. Your logical record is too large to fit into a physical record of the declared size on a key indexed file.

Action. Either modify the application to reject such large records or reconstruct the key indexed file with a larger declared physical record size.

NOTE

Error codes B3, B4, B5, B8, and BD are returned in byte 0 of the currency block. They are intended to be an aid to you and might arise naturally in a properly functioning application.

B3 NO MORE RECORDS TO READ
[00]

Read last record: no more records to read.

B4 DUPLICATE KEY VALUE FOUND
[00]

A specified value has been duplicated. On the Insert opcode, the SVC attempted to create a duplicate, and duplicates were not allowed on a key. On a Read by Key opcode, more records having the same KEY value exist in the file.

Table 4-2. SVC Error Reports (Continued)

B5 RECORD NOT IN FILE
[00]

The specified record was not found in the file. If this error occurs often on a Read Next operation of a particular record, see *Rebuild the Key Indexed File* in Section 8. If it occurs only randomly and the record can be read later, see error code > BD.

B6 INVALID CURRENCY
[00]

User Error. A parameter in the currency information is invalid. The currency is destroyed, or another user has deleted or modified the last record read.

Action. See error code > BD.

B7 RECORD ALREADY LOCKED
[00]

User Error. A previous Read with Lock operation locked the specified record through the same LUNO assigned by the current operation that reported this error.

Action. No action is required. The record has been transferred to the user task.

B8 RECORD DOES NOT EXIST
[00]

User Error. No record exists satisfying the condition you specified.

Action. If the key exists, or can sometimes be accessed, see *Rebuild the Key Indexed File* in Section 8. If the error persists, call your dealer or customer representative for software help.

B9 A NON-MODIFIABLE KEY WAS MODIFIED
[00]

User Error. On a Rewrite operation to a key indexed file you attempted to modify a key value for a key which on file creation was declared nonmodifiable.

Action. Correct error in application.

BA RECORD NOT LOCKED BY REQUESTING TASK
[00]

User Error. You attempted a Rewrite operation on a record of a key indexed file not read and locked by your task.

Action. Identify other usage (who is using it) and correct the error in application.

BB OUT OF LOG BLOCKS
[00]

Software Error. A key indexed file ran out of disk area for logging preimages.

Action. See *Rebuild the Key Indexed File* in Section 8 concerning a larger physical record size.

Table 4-2. SVC Error Reports (Continued)

BC REQUIRED KEY MISSING
[00]

User Error. You specified the key to have a null value in a record, but the key is not modifiable.

Action. Redefine the required key and retry the operation.

BD CANNOT 'GET NEXT' RECORD
[00]

User Error. DX10 cannot locate the next record on a Read Current, Read Next, or a Read Previous operation. Either the currency is destroyed or another user deleted the last record read.

Action. Locate the other program using the file and make the 2 programs cooperate in using the file. If yours is the only program accessing the file, see *Rebuild the Key Indexed File* in Section 8. If the problem persists, call your dealer or customer representative for software help.

BE TRYING TO REWRITE A KEY FILE RECORD NOT IN FILE
[00]

User Error. The current information given does not correspond to a record within the file, or another task deleted the record you want to rewrite.

Action. Correct the application. Use record locking to prevent another task from deleting a file.

BF ILLEGAL KEY NUMBER
[00]

User Error. The key number you specified in the currency block is larger than the number of keys you declared for key indexed files.

Action. Correct the application.

C0 RECORD TOO SMALL TO ACCOMMODATE ALL ITS KEYS
[00]

User Error. The logical record length specified in the call block for insert or rewrite is too small to accommodate all the characters of the rightmost key.

Action. Correct the application and/or file. If the record should be long enough, see *Rebuild the Key Indexed File* in Section 8. If the error persists, call your dealer or customer representative for software help.

C1 NO KEY INDEXED FILE IN THIS SYSTEM
[00]

User Error. This operating system does not contain the software required to support key indexed files.

Action. You must perform a custom system generation and include key indexed file support.

Table 4-2. SVC Error Reports (Continued)

C2 CANNOT OPEN KIF
[00]

User Error. The operation cannot open a key indexed file because of illegal system structure.

Action. See *IPL the System* and *Rebuild the Key Indexed File* in Section 8. If the problem persists, call your dealer or customer representative for software help.

C3 CANNOT PERFORM I/O ON OPEN TO KIF
[00]

User Error. The I/O on Open to Key Indexed File failed.

Action. See *IPL the System* and *Rebuild the Key Indexed File* in Section 8. If the problem persists, call your dealer or customer representative for software help.

C4 PREIMAGES OF RECORDS CANNOT BE APPLIED TO KIF
[00]

User Error. You cannot apply preimages of modified physical records to the KIF file. To preserve file integrity, you can enter only a Close operation on the file.

Action. Close the file and retry with another Open. If this fails, see *Check for Disk Problems* in Section 8. Perform an initial program load (IPL). If the problem persists, see *Rebuild the Key Indexed File* in Section 8.

C6 KEY INDEXED FILE MUST BE REBUILT
[00]

User Error. The integrity of the key indexed file is in question. A potential inconsistency occurred while prelogging was set to *partial* by the Modify KIF Logging (MKL) command.

Action. Rebuild the file by using the Copy KIF Randomly (CKR) command. You can prevent the error by avoiding the MKL command to turn off prelogging, or using the MKL command with prelogging set to *full.*

D0 INVALID OPERATION FOR FILE TYPE
[00]

User Error. The input/output operation you specified is not implemented for the file type being used.

Action. The operation was probably accessing the wrong file. Verify the program to ensure that the logical unit number was assigned to the right file or that the file was created with the correct parameters.

D1 INVALID USE OF REPLACE OPTION
[00]

User Error. You specified DO NOT REPLACE during the open of an existing file, but you also requested write privileges.

Action. Verify that you want to replace the contents of the output file. If so, delete the existing file, change the specified pathname, or specify the REPLACE option or flag and resubmit the program.

Table 4-2. SVC Error Reports (Continued)

D2 ATTEMPT TO ACCESS LOCKED RECORD
[00]

User Error/System Status. The software attempted to access a record from a file that has been locked by a read through a different LUNO than specified in the operation that yielded this error.

Action. Delay and retry your operation later to allow the other program to unlock the record, or abort your attempt to read the record.

D3 UNABLE TO ALLOCATE SYSTEM TABLE AREA FOR RECORD LOCKING
[00]

System Error. An attempt was made to lock a record, but file management could not allocate space in the system table area.

Action. Decrease activity in the system or regenerate the system with a larger system table area.

D4 SEQ. FILE ZERO LENGTH RECORD (3.0 ONLY)
[00]

User Error. An operation encountered a zero length record for a sequential file. This should only occur on release 3.0 systems.

Action. Identify the record and make it nonzero length.

D5 INCONSISTENCY IN FILE STRUCTURE
[00]

System Error. The file currently being accessed has inconsistent data in its internal control structures.

Action. The data in the file is probably no longer valid. Attempt to recover the file from backup media. See *Rebuild the Sequential File* in Section 8.

D6 UNABLE TO ALLOCATE SYSTEM TABLE AREA TO EXTEND FILE
[00]

System Error. An attempt was made to extend the file, but no room was available in the system table area.

Action. Decrease the activity in the system to reduce system table requirements or regenerate the system to include a larger table area.

D7 BUFFER ADDRESS, RECORD LENGTH OR CHARACTER COUNT IS ODD
[00]

User Error. Either the buffer address, record length, or character count specified in the SVC contains an odd value. File management requires that all record transfers begin on an even byte address and transfer an even (and nonzero) number of bytes. Only sequential files allow odd and zero length records.

Action. Modify the program to start buffers on even addresses and ensure that an even number of bytes are transmitted. Rerun the program.

Table 4-2. SVC Error Reports (Continued)

D8 OPERATION ATTEMPTS TO VIOLATE ACCESS PRIVILEGES
[00]

User Error. You attempted to access a record in a manner that you did not request during the open to the file (for example, you attempted to write to a file that was opened read only).

Action. Correct the program either by increasing access privileges requested or by changing the I/O operation to one that is allowed. Resubmit the program.

D9 ATTEMPT TO REWRITE AT BEGINNING OF FILE
[00]

User Error. By definition, Rewrite will backspace one record and write over the old record. Therefore, Rewrite is not legal at the beginning of a file. This error report does not apply to KIFs.

Action. Position the record forward one beyond the intended record before attempting the Rewrite operation. A read of the intended record will accomplish this.

DA SECONDARY ALLOCATION TABLE IS FULL
[00]

System Error. A file is limited in its expansion to 17 disjoint blocks on the disk. Once this limit has been reached the file cannot be extended further. You can verify this condition by performing a Map Disk (MD) command (long form). MD displays the primary and secondary allocations for the file.

Action. Reduce the number of disjoint blocks by copying the file to another file, then renaming the new file by the old name. You may have to compress the used space. Accomplish this by using the Copy Directory (CD) command, or the Backup Directory/ Restore Directory (BD/RD) commands. You may also need to delete unneeded files to gain enough contiguous space on the disk to allow for further expansion of the file, and you may even need to copy the entire disk volume to obtain contiguous space and reduce the number of disjoint blocks occupied by the file.

DB DEFERRED WRITE ERROR
[00]

Hardware Error. On a file that does not force a write after each physical buffer is modified, there may be some time lag until the record is actually written to the disk. This error code indicates that a disk hardware error occurred on a record previously written.

Action. Attempt to recover the data from backup media. See *Check for Disk Problems* in Section 8.

DC REWRITTEN RECORD WILL NOT FIT IN OLD RECORD'S PLACE
[00]

User Error. An operation attempted to rewrite a record into a sequential file that will not fit in the space allocated for the old record.

Action. Ensure that the new record has the same record length as the old record. If you are using a blank suppressed file, you must have a detailed knowledge of DX10 internal file storage techniques in order to rewrite a record. For this reason, it is not recommended that blank suppressed files be used for rewrite operations.

Table 4-2. SVC Error Reports (Continued)

DD ATTEMPT TO WRITE TO WRITE PROTECTED FILE
[00]

User Error. You attempted to write to a write-protected file.

Action. Verify that you want to write to the file in question. If necessary, modify the file protection. Alternately, modify and resubmit the program.

DE KIF SYSTEM ERROR
[00]

System Error. The error occurred during a Delete by Key or Delete Current Key Indexed File operation (opcode > 49). The system could not delete the primary key of a logical record. The file probably has a B-tree entry pointing to a nonexistent data record, resulting in a > B5 error.

Action. See *Rebuild the Key Indexed File* in Section 8.

DF PHYSICAL RECORD SIZE TOO LARGE
[00]

User Error. The maximum physical record size is limited by memory availability. If file management must use the memory resident buffer, and the physical record size is greater than the size of the memory resident buffer, DX10 returns this error.

Action. Recreate the file with a smaller physical record size, or regenerate the system to make the memory-resident buffer larger.

E0 DISK VOLUME IS FULL
[00,22]

User Error. There are not sufficient free ADUs on this disk volume to satisfy a request to extend a file, or create a new one. If the disk is fragmented, an attempt to create a directory or a nonexpandable image file whose size exceeds the largest available block produces this error.

Action. Start using a different volume, or delete some files on this volume. If ADUs are lost due to being marked as allocated but not being used in any file, you may need to reconstruct the volume by using the Copy Directory (CD) command, or the Backup Directory (BD) and Restore Directory (RD) commands. Specify a smaller directory or image file.

E1 ADU OUT OF RANGE (DISK)
[00]

User Error/System Error. The ADU specified is out of range. System structures may be damaged in memory or on the disk.

Action. Verify the ADU address. See *Rebuild the File* and *Rebuild the Disk Volume* in Section 8. If the error persists, call your dealer or customer representative for software help.

Table 4-2. SVC Error Reports (Continued)

E1 REQUESTED ADU OUT OF RANGE OF DISK
[22]

User Error. You attempted to access an ADU that is not within the range of the disk drive specified. System structures may be damaged in memory or on the disk.

Action. Identify the proper ADU range and resubmit the request with a valid value. Otherwise, perform an initial program load (IPL). See *Rebuild the Disk Volume* in Section 8. If the error persists, call your dealer or customer representative for software help.

E2 ILLEGAL INPUT PARAMETER IN UCB (USER CALL BLOCK)
[00,22]

User Error. You attempted a request where an input parameter in the block is illegal. You specified an invalid number of ADUs, or possibly the number of ADUs exceeds the total on the disk. It is also possible that system structures are damaged in memory or on disk.

Action. Identify the bad parameter, correct it, and resubmit the request. If the error comes from an SVC > 00 error, see *Rebuild the File* in Section 8. If the error recurs, see *IPL the System* in Section 8. If the error persists, call your dealer or customer representative for software help.

E3 SPECIFIED DISK DRIVE DOES NOT HAVE A VOLUME INSTALLED
[00,22]

User Error. You attempted a request where the disk specified was not installed. The operation has not been performed.

Action. Identify the proper volume and install it. After doing so, resubmit the request.

E4 SPECIFIED ADU IS ALREADY DEALLOCATED
[00,22]

User Error. You attempted to modify the status of a particular ADU, and it is already in the state you requested it to be in.

Action. Examine your program for errors; it is attempting to release disk space that is not allocated to it, or to allocate disk space that is already allocated. This error normally occurs only when you delete files that are dually allocated with each other. Check for dual allocation. If the error persists, see *Rebuild the Disk Volume* in Section 8. Should all corrective action fail, call your dealer or customer representative for software help.

E5 NONPRIVILEGED DISK MANAGEMENT
[22]

User Error. Your task requested disk manager services reserved for privileged tasks. You should never need to do disk manager requests to manage disk files.

Action. Change the supervisor call request or make the task privileged.

Table 4-2. SVC Error Reports (Continued)

E8 INVALID PASSCODE USED WITH TILINE DIAGNOSTIC PORT

System Error/User Error. You used an invalid passcode with the TILINE diagnostic port. This operation is restricted to supplied online diagnostic tasks.

Action. If the error occurred in the supplied software, call your dealer or customer representative. Do not use this operation in user-written software.

E9 INVALID TILINE COMMAND USED WITH TILINE DIAGNOSTIC PORT

System Error/User Error. You used an invalid command with the TILINE diagnostic port. This operation is restricted to supplied online diagnostic tasks.

Action. If the error occurred in the supplied software, call your dealer or customer representative. Do not use this operation in user written software.

EA OFFSET ACTIVE ERROR ENCOUNTERED
[00]

System Error. The disk controller for this device has detected an offset active error. The disk drive possibly needs repair.

Action. Call your dealer or customer representative.

EB DISK PACK CHANGE DETECTED
[00]

User Error. The disk controller for this device detected that power to the drive has been recycled. This could indicate that the access door to a diskette drive has been opened, or that a volume has been physically replaced without going through the proper Unload Volume (UV), Install Volume (IV) sequence.

Action. Verify that you are accessing the correct volume by executing the Show Volume Status (SVS) command, and then take appropriate steps according to the volume currently installed and the volume you desire.

ED DISK IS BEING INITIALIZED
[22]

User Error. The disk is in the initialization process and you cannot use it until the process completes. The following commands can cause this error report:

Initialize Disk Surface (IDS), Initialize New Volume (INV), Install Volume (IV), Check and Reset Volume (CRV), and copy commands.

Action. Retry the command after the initialization process completes.

F0 TM$BID END ACTION TAKEN
[2B]

System Error. The execute task processor encountered a fatal error. System integrity is probably compromised.

Action. See *IPL the System* in Section 8. If the problem persists, see *Check for CPU Problems* or call your dealer.

Table 4-2. SVC Error Reports (Continued)

F9 RELEASE MEMORY
[13]

User Error. The address specified in Register 9 causes the Release Memory SVC block to be released before the system can update parameters within the call block.

Action. Do not include the SVC block in the memory to be released.

FA ATTEMPT TO RELEASE CALL BLOCK MEMORY
[13]

User Error. You requested that a portion of memory containing the SVC block be released.

Action. Check the program and change it if necessary to ensure that the memory to be released does not contain the SVC block.

FA ATTEMPT TO REPLICATE NONREPLICATABLE TASK
[2B]

User Error. The specified task is already active and is nonreplicatable.

Action. Wait for the activated task to terminate before retrying the SVC. If you want more than one copy of the task active concurrently, then reinstall the task or use the Modify Task Entry (MTE) command and specify the task as replicatable.

FB MEMORY REQUEST TOO LARGE FOR USER AREA
[12]

User Error. The memory request resulted in the calling task being larger than the total user area in the system (excluding memory resident tasks). This error is usually limited to smaller systems, or systems with many memory resident tasks.

Action. Make the request smaller and retry the SVC. Check for memory-resident tasks that could be disk resident and reinstall them or use the Modify Task Entry (MTE) command. See if the task will fit. If not, see *IPL the System* in Section 8. You may need to regenerate the system, attempting to decrease system size. You may even need to add memory to the system. See *Check the Available Memory Size* in Section 8.

FB MEMORY MANAGEMENT ERROR
[13]

System Error. This is an internal error. System memory structures have been modified.

Action. Perform an initial program load (IPL). If the problem persists, call your dealer or customer representative.

FB TASK ABORTED
[2B]

User Error. The task was killed during the load processing. Someone issued a Kill Task SVC.

Action. Find out who generated the Kill Task SVC that killed your task, and advise that person that your task is active. Then resubmit the request.

Table 4-2. SVC Error Reports (Continued)

FC MEMORY REQUEST TOO LARGE FOR ADDRESS SPACE
[12]

User Error. The memory request results in a violation of the 65,504 byte address space limit for the calling task.

NOTE

Due to hardware limitations indirectly imposed by the disk controller, the address space of a task is actually limited to > FFE0 bytes.

Action. Make the memory request smaller. Consider overlaying the task to reduce its size. See if the task will fit. See *Check the Task Size* in Section 8.

FC ILLEGAL RETURN ADDRESS SPECIFIED
[13]

User Error. The address specified in a Return Memory request either is not in the task's address space, is in a procedure segment of the address space, or possibly would result in the entire task area being released.

Action. Check the address that you specified. Possibly a failure to check for errors on a previous Get Memory request caused a misconception of the amount of memory actually allocated. Compute the correct parameters, and try again.

FC PROCEDURE DIRECTORY ENTRY ERROR
[2B]

User Error/Hardware Error. This error can arise if a task has an attached procedure which is not installed, or if the length of the first attached procedure conflicts with the load bias of the second attached procedure. This commonly occurs if a procedure is changed, reassembled, and reinstalled without relinking and reinstalling the attached tasks. This error report can also occur if a disk error occurs on an attempt to read the procedure directory entry.

Action. Perform a Map Program File (MPF) command on the program file from which the task involved is being bid. Ensure that the attached procedure(s) is installed. Check the SAME flag that indicates if the procedure is to be found on the same program file as the task: if it is set to N then the procedure must be on the system program file. See *Check Load Bias Conflicts* in Section 8. Reinstall both procedure(s) and the task if any of these conditions are violated. If the MPF command fails, a disk hardware problem may be indicated (look in the system log). Perform an initial program load (IPL) after installing a procedure as memory resident before the procedure can be used as a memory-resident procedure. Perform a Modify Program File (MPF) command and see *Check for Disk Problems* in Section 8.

FD COMMON MAPPED INTO ADDRESS SPACE
[12]

User Error. A Get Memory request cannot be satisfied while common is mapped into the task's address space.

Action. Execute a Return Common SVC and retry the SVC.

Table 4-2. SVC Error Reports (Continued)

FD COMMON MAPPED INTO ADDRESS SPACE
[13]

User Error. A Return Memory request cannot be accepted while common is mapped into the task's address space.

Action. Execute a Return Common SVC and retry the SVC.

FD TASK DIRECTORY ENTRY ERROR
[2B]

User Error/Possible Hardware Error. Probably the specified task is not installed on the specified program file. Two other possible causes exist. The first is that a disk error occurs on the attempt to read the directory entry. The second may occur if the task has been installed as a nonreplicatable task on the system program file and is being executed for the first time. Since such a task must execute with the same run-time ID as its installed ID, if that ID were allocated to another task as a run-time ID before this task was installed (and thus before the ID was reserved), then it is impossible to execute this task until the run-time ID once again becomes available. When the task finally does execute, its run-time ID will be marked as reserved so that the problem will not recur.

Action. Ensure that the specified task is installed. Check that the proper program file LUNO was specified, and that it is not masked by task or station local LUNO definitions. Perform a Map Program File (MPF) command and see *Check for Disk Problems* in Section 8.

FD A KILL TASK SVC HAS BEEN ISSUED AGAINST THE SPECIFIED TASK
[3E]

User Error. Someone issued a Kill Task request for the task whose run ID is specified by the call block.

Action. Verify where the task was killed, and inform the person that killed the task that you are using the task. Then retry the operation.

FE TILINE I/O IN PROGRESS
[12]

User Error. The calling task performed an Initiate I/O call to a file or a TILINE device. The Get Memory request cannot be satisfied while the I/O is in progress without endangering the integrity of the system.

Action. Execute the Wait for I/O SVC to determine when the I/O has completed, then retry the SVC.

FE TILINE I/O IN PROGRESS
[13]

User Error. The calling task performed an Initiate I/O call to a file or a TILINE device. The Release Memory request cannot be satisfied while the I/O is in progress without endangering the integrity of the system.

Action. Execute a Wait for I/O SVC to determine when the I/O has completed, then retry the SVC.

Table 4-2. SVC Error Reports (Continued)

FE	MESSAGE TOO LONG FOR QUEUE [1C] *User Error.* The calling task issued a put data SVC in which the specified message length, plus six bytes, is greater than the total size of the ITC queue. *Action.* Either change the program to use shorter messages, or increase the size of the ITC queue by performing a system generation (see Volume V).

Table 4-2. SVC Error Reports (Continued)

FE LUNO NOT ASSIGNED TO A PROGRAM FILE
[2B]

User Error. The specified program file LUNO is either not assigned or assigned to something other than a program file.

Action. Use the Show I/O Status (SIS) command to check the specified LUNO, ensure that it is assigned to a program file, and ensure that task or station local LUNO definitions do not mask it. Retry the SVC.

FE TASK NOT IN SYSTEM
[3E]

User Error. The run-time ID specified is not correct, or the task terminated.

Action. Verify the run-time ID that you specified by using the Show Task Status (STS) command.

FF DATE/TIME UPDATE IN PROGRESS
[03]

System Warning. The date/time returned is not completely updated and may be inconsistent. This is a rare error that occurs when the clock handler updated the second count to 60 as the calling task was running.

Action. Use a Time Delay SVC specifying a delay of 0 to allow the scheduler to update the time. Retry the SVC. (See Volume III.)

FF SPECIFIED TASK ALREADY BID
[05]

User Information Code. The specified nonreplicatable task is not in a terminated state, and therefore cannot be bid.

Action. If the task is running as desired, no action is necessary. If you want to restart the task, then kill the task using the Kill Task (KT) command and retry the SVC.

FF SPECIFIED TASK NOT IN SYSTEM
[07]

User Error. The specified task is not currently in the system task list and thus cannot be activated.

Action. Check the ID that you specified. You must use a run-time ID and not an installed ID in this SVC. It is also possible that the task has aborted or terminated.

FF ILLEGAL DECIMAL ASCII
[0B]

User Error. The string specified for conversion is illegal for one of several reasons. The string could contain nondecimal ASCII characters, that is, characters not in the range of > 30 through > 39, or the string could contain embedded blanks. Also, if the string is greater than 32,767 or less than – 32,768, this error can occur.

Action. Correct the string and retry the SVC.

Table 4-2. SVC Error Reports (Continued)

FF ILLEGAL HEXADECIMAL ASCII
[0D]

User Error. The string that you specified for conversion is illegal. Possibly the string contains nonhexadecimal ASCII characters, that is, characters not in the range from >30 through >39 or >41 through >46. Or possibly the string contains embedded blanks.

Action. Correct the string and retry the SVC.

FF SPECIFIED TASK IS NOT IN SYSTEM
[0E]

User Error. The specified task was not found in the system task list and thus could not be activated.

Action. Check the specified ID. You must use a run-time ID, not an installed ID with this SVC. It is also possible that the task aborted or terminated.

FF ILLEGAL GET COMMON CALL
[10]

User Error. The system rejected the Get Common SVC because there is no common module from the system generation, or there is insufficient address space left above the task, or the task has 2 attached procedures.

Action. Ensure that a common module was generated into the system. Make the task smaller so that common fits in its address space, or restructure the task to have less than two procedures. See *Check the Task Size* in Section 8.

FF TASK IS MEMORY RESIDENT
[12]

User Error. Get Memory requests are illegal from a memory resident task. (See the following error report also.)

Action. Reinstall the task as disk resident, or do not use the Get Memory SVC.

FF TASK IS MEMORY RESIDENT
[13]

User Error. Return Memory calls from memory resident tasks are illegal.

Action. Reinstall the task as disk resident, or do not use the Return Memory SVC.

FF ILLEGAL OVERLAY NUMBER
[14]

User Error. The overlay ID specified in the SVC block is not installed on the program file that you specified.

Action. Check the SVC block for the correct overlay ID and/or program file LUNO and retry. Use the Modify Program File (MPF) command to determine the available overlay IDs.

Table 4-2. SVC Error Reports (Continued)

FF INSUFFICIENT SYSTEM TABLE AREA
[1C]

User Error/System Error. Conditions that produce this error report are:

1. No room is available to queue a specified message in the area reserved for use by ITC messages.
2. The number of messages queued for the specified queue ID has already reached its maximum. This value is specified at system generation.

Action. Code the program to time delay and try again, or suspend the program and wait for it to be reactivated. If messages are not being removed from the ITC queue, the Analyze Crash File (XANAL) command can help you inspect the queue for more information. See Section 6 in this manual for information on using XANAL.

FF MESSAGE NOT ON QUEUE
[1D]

User Error. There were no messages on the queue.

Action. Suspend the task and try again later.

FF ILLEGAL TASK SPECIFIED
[1F]

User Error. The specified task in the scheduled bid call was not installed on the system program file, or it was installed as a replicatable task, or it is already active.

Action. Check installation of the task and if it is wrong, reinstall it properly as a nonreplicatable task on the system program file. If the task is already active, then either kill it or wait until it terminates before retrying the SVC.

FF NO SYSTEM LOG SYSGENED
[21]

User Error. When the system was generated, a 0 was entered for the number of messages to queue.

Action. If you want a system log, you must regenerate the system and specify the necessary options. See Volume V for information about system generation.

Table 4-2. SVC Error Reports (Continued)

FF	SPECIFIED TASK NOT FOUND [35]
	User Error. The calling program requested the status of a task, but the requested task was not in execution, or the task was in execution, but it was not associated with the specified station. It is also possible that the task was in execution, but no station was specified, and the task was not associated with the calling program. (The default station is the station associated with the calling program).
	Action. This is an information gathering SVC. If the task should be executing, you can bid it now. If it is executing, the station number in the SVC was incorrect. By using a station number of FF, the status of the task will be reported without regard to the associated station.
FF	PRIVILEGED SVC REQUEST BY A NON-PRIVILEGED TASK [3B]
	User Error. Only privileged tasks can request the Initialize Date and Time SVC. The task receiving the error was not installed as a privileged or system task.
	Action. Verify that you want to use the Initialize Date and Time SVC. If so, modify the task characteristics using the Modify Task Entry (MTE) command so that the task is privileged.
FF	TARGET TASK HAS NO END ACTION SPECIFIED [3E]
	User Error. You did not specify an end action for the task.
	Action. Check the third word of the task for the end action. Set up the end action, or do not use this SVC.

5

System Crash Error Reporting

5.1 INTRODUCTION

When a system crashes, it locks out all terminals, that is, it prevents any user interface with the terminal. At the same time, the system illuminates the Fault and the Idle indicators on the front panel. This means that the Power, Fault, Idle, and Run indicators are illuminated at the same time. See Figure 5-1. At this point, the pattern in the data indicators on the front panel represents a hexadecimal crash code that you can find in Table 5-1. Table 5-1 also describes the error briefly and recommends a means of recovery, if the recovery procedure is relatively simple.

System crashes usually occur as the result of critical hardware errors or bugs in system software. Due to their unexpected nature, crashes are difficult to avert, and prevention of further crashes is limited to identifying (if possible) and avoiding the sequence of events that preceded the initial crash.

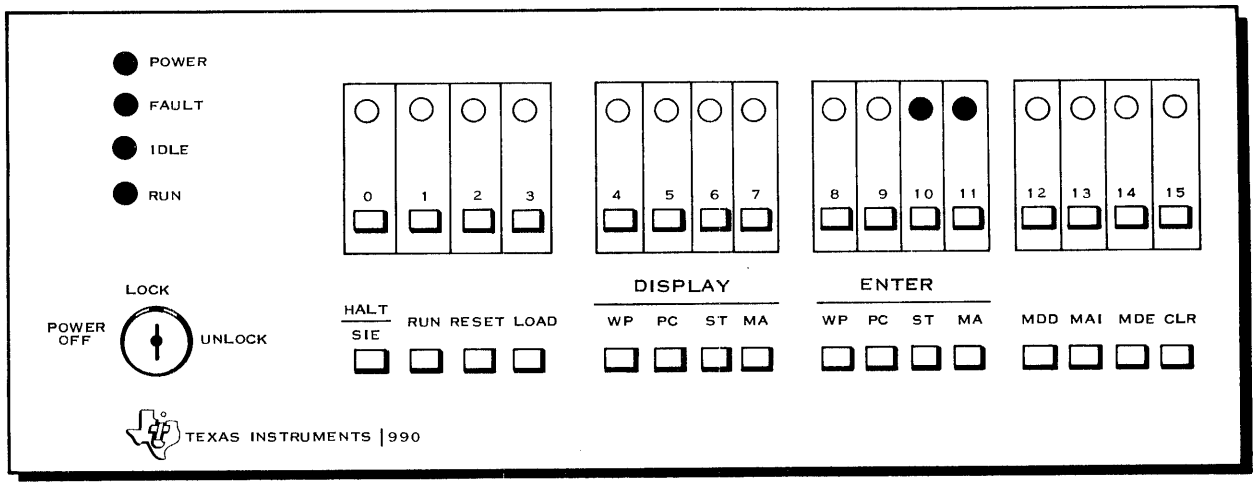

Figure 5-1. Front Panel of the Model 990/10 Computer After the System Crashes

5.2 CRASH RECOVERY PROCEDURE

If your system crashes:

- Check the crash code displayed on the front panel and refer to Table 5-1 for a description of the error and a recommended recovery procedure (if there is one).
- Preserve the crash dump by copying .S$CRASH to another file. This protects the integrity of the crash data in case the system crashes again. Paragraph 5.5 explains the copy process.
- Execute the recovery procedure (if there is one) from Table 5-1.
- If no recovery procedure is listed, or if you try one without success, consult the troubleshooting guide for recommended further action. This can include references to Section 6 and the use of the ANALZ utility to analyze the crash dump.
- If you still cannot correct the problem, you may also send a copy of the crash dump, .S$CRASH, *on machine-readable media*, a copy of the system link map, and a description of what was happening on the system at the time of the crash to Texas Instruments.

Table 5-1 lists the system crash codes and describes their causes. If the problem is not overly complicated, the codes also contain recovery information to assist you.

Table 5-1. System Crash Codes

Crash Code	Message (module called from)	Cause
>13 – >1F	ILLEGAL INTERRUPT	An interrupt occured at a level for which no device was assigned at system generation. The interrupt is crash code minus >10. See *Analyze Illegal Interrupt Crash* in Section 8.
>20	ILLEGAL INTERRUPT (1 – D$DATA,2 – TM$INT)	One of two things happened: 1. An interrupt occurred at a level for which no device was assigned a system generation (DX10 3.3 and earlier releases only.) See *Analyze Illegal Interrupt Crash* in Section 8. 2. An error interrupt occurred within the system; (illegal opcode, memory parity, or similar error.) See *Analyze Kernel Crash* in Section 8.
>21	MEMORY LIST INCONSISTENCY — SYSTEM TABLE AREA (MM$MGR)	An error compromised the integrity of the available list of blocks in user area memory. This indicates a bug in system software or a hardware problem with the computer. Call for software help.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>22	MEMORY LIST INCONSISTENCY—SYSTEM TABLE AREA (MM$MGR)	An error compromised the integrity of the available blocks in the system table area. This indicates a bug in system software or a hardware problem with the AU or SMI board. If the system contains no custom software, call for software help. If your system has custom software, verify that your software is bug-free before calling for software help.
>23	QUEUING ERROR (SEVERAL)	Generally, a system queuing routine returned an unexpected or undefined error.
>24	SVC BUFFERING ERROR (SVCBUF)	An SVC subroutine that has no error defined returned an error.
>25	TM$LDR STATE ERROR	Many problems can cause this error.
>26	ERROR IN BIDDING QUEUE SERVER (TM$QUE)	A subroutine returned an error when it attempted to activate a queue server task. Possibly the system table is exhausted.
>27	TM$EXT NON-ZERO AFTER ERROR INTERRUPT (TM$INT)	A system task encountered an error interrupt during a critical section of processing. See *Analyze End Action Crash* in Section 8.
>28	SVC BUFFERING ERROR (SVCBUF)	Internal SVC buffering tables are destroyed.
>29	INVALID TASK TO TM$LDR QUEUED	The system requested that a memory resident task be loaded into main memory. This indicates a bug in the system software.
>2A	MAPPING ERROR (TMIMAG)	A subroutine returned an error when it attempted to map in area for task/procedure load. This error will occur if the system size is greater than >FFC0 bytes.
>2B	ERROR IN LDT BUILT FROM PROGRAM FILE	The program file LDT built for the task is incorrect. This indicates a bug in system software.
>2C	TM$EXT LESS THAN ZERO IN TM$RTN (TM$RTN)	The scheduler inhibit switch (TM$EXT) has been decremented more often than it has been incremented. This indicates that an unexpected path was taken through system software. The stack possibly overflowed.
>2D	TM$LDR END ACTION TAKEN (TM$LDR)	The task loader (TM$LDR) encountered an error interrupt. See *Analyze End Action Crash* in Section 8.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>2E	UNDEFINED ERROR RETURN (SO$CPR)	A call to the system queuing routine, which has no error defined, returned an error.
>2F	I/O ERROR IN READING SYSTEM OVERLAY (SOVLDR)	The system overlay loader (SOVLDR) could not load an overlay. See *Analyze I/O Error Crash* in Section 8.
>30	SYSTEM TABLE AREA UNDERSIZED	The amount of system table area defined at system generation is too small to handle the current requirements. Either reduce the load on the system, or regenerate the system with a larger system table area.
>31	TIME ORDERED LIST ERROR (BM$REL)	The linkage on the time ordered list points to a block that is not in the user area of memory. A subroutine then returns an error when attemping to release the block.
>32	MAPPING ERROR (BM$TRM)	A subroutine returned an error when it attempted to map in the blocking buffer or tried to release user area. This error can occur if the size of the file management task (with buffers) exceeds >FFC0 bytes.
>33	TIME ORDERED LIST ERROR (BM$W)	See crash code >31.
>34	UNDEFINED ERROR RETURN (BM$UPD)	The time-ordered list linkage routine, which has no error defined, returned an error.
>35	TIME ORDERED LIST ERROR (BM$CLO)	See crash code >31.
>36	UNDEFINED ERROR RETURN (BM$SCH)	See crash code >34.
>40	UNDEFINED ERROR RETURN (TM$BID)	One of the routines that the task bidder (TM$BID) called returned an error when no error was defined.
>41	SYSTEM TABLE AREA ERROR (TM$DGN)	When the termination task (TM$DGN) attempted to release the TSM memory in the system table area, it encountered an error.
>42	END ACTION TAKEN (TM$DGN)	The termination task (TM$DGN) encountered an error interrupt. See *Analyze End Action Crash* in Section 8.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>43	TSB/PSB NOT FOUND (MM$TSK)	A task status block (TSB) or a procedure status block (PSB) that exists in the system does not appear on the TSB/PSB lists.
>44	SYSTEM TABLE AREA ERROR (MM$TSK)	A structure that is not in the system table area exists on the task status block/procedure status block (TSB/PSB) lists. When a subroutine attempted to release the structure, it encountered an error. This indicates that an unexpected path was taken through system software. Possibly, the stack overflowed.
>45	SVC BUFFERING ERROR (TM$SBD)	The scheduled bid task processor (TM$SBD) encountered an error when it attempted to release the buffered SVC block, indicating that it was buffered outside the system table area.
>50	ERROR ON REQUE OF INSTALL REQUEST	A subroutine encountered an error when it attempted to requeue the Install request in order to perform the time delay (PF and CMN).
>51	INCONSISTENT LDT POINTER FOR PROGRAM	A subroutine encountered an error when it attempted to locate a logical device table (LDT) for the program file in the executing task LDT list (PF$).
>70 – >76		See Table 1-1 for additional information about these crash codes. If this is insufficient, consult the documentation accompanying the communications software.
>77	MEDIA CHANGE OCCURRED ON DS01	Power to DS01 was cycled, and the automatic volume check in DS01 was not selected at system generation. You need to perform an initial program load (IPL).
>80	END ACTION TAKEN (DM$TSK)	The disk management task (DM$TSK) encountered an error interrupt. See *Analyze End Action Crash* in Section 8.
>81	UNEXPECTED ERROR RETURN (DM$TSK)	A called routine returned an error when none was anticipated.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>82	UNDEFINED SUB-OPCODE (DM$TSK)	The SVC block specifies an operation that is undefined to the disk manager. This generally indicates that the system table area is being destroyed.
>83	PARTIAL BIT MAP INCONSISTENCY (DM$TSK)	The disk manager encountered an inconsistency in the allocation tables. A region marked available in the bit map tables is marked allocated in the partial bit map itself. If the crash occurs only once, the problem may have been due to destruction of system table area. If it occurs consistently, the error exists on the disk. This error can be a side effect of an earlier crash that occurred while the allocation tables were being updated. Use the General Information (GI) subcommand of XANAL to inspect the monitor registers. At the time memory is dumped into .S$CRASH, R14 points to the physical device table (PDT). Look at memory with the Dump Memory (DM) subcommand of XANAL. Use the contents of R14 as the lower limit, and that value plus >90 as the upper limit. The drive and volume names should be visible. Rebuild the volume.
>84	ERROR IN ALLOCATION TABLES (DM$TSK)	The disk allocation tables indicate an available ADU that is beyond the range of the disk.
>85	ATTEMPTED ACCESS ON NON-EXISTENT PARTIAL BIT MAP (DM$TSK)	Generally indicates that an attempt was made to release an ADU that is beyond the range of the disk. The problem is probably due to the file descriptor record (FDR) being modified.
>86	PARTIAL BIT MAP HAS BEEN STEPPED ON	The disk manager determined that the bit map was altered while in memory.
>87	A BAD WRITE TO DISK PARTIAL BIT MAP	The partial bit map (PBM) was not written properly to disk. Check the hardware. The disk PBM is incorrect. The correct PBM is in the crash file, and can be displayed using the Display Partial Bit Maps (PB) subcommand of XANAL. Rebuild the volume.
>88	WRITING ROLL FILE (TM$LDR)	This error occurs during access to the S$ROLLA file. Load a backup disk, and install the bad system disk as a secondary disk. Create new system files on the secondary volume. If the problem persists, see *Analyze I/O Error Crash* in Section 8.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>89	END ACTION TAKEN (SOVLDR)	An internal error interrupt occurred. See *Analyze End Action Crash* in Section 8.
>A0	END ACTION TAKEN (FILMGR)	The file manager encountered an error interrupt. See *Analyze End Action Crash* in Section 8.
>A1	UNEXPECTED ERROR RETURN (FILMGR)	An error return was taken which was undefined or unanticipated.
>A2	SYSTEM TABLE AREA ERROR (FILMGR)	An attempt to release a structure in the system table area resulted in an error. Generally due to destroyed pointers.
>A3	SYSTEM TABLE REQUEST ERROR (FILMGR)	An error code was returned on a system table area request that indicates that the table area header has been destroyed.
>A4	KEY INDEXED FILE CRASH CONDITION (KIF)	An internal inconsistency has been discovered during key indexed file processing.
>AF	NONEXISTENT ENTRY IN FILE MANAGER (FILMGR)	Attempt to call file manager routines with illegal entry.
>E0	END ACTION TAKEN (DDT)	The device driver (DDT) has encountered an error interrupt. (3.4 and earlier only). See *Analyze End Action Crash* in Section 8.
>E1	QUEUING ERROR (DDT)	An attempt to dequeue a structure known to be on the queue was unsuccessful.
>E2	TASK NOT SUSPENDED FOR IOQ	Many problems can cause this error.
>E3	UNDEFINED ERROR RETURN (DDT)	An error return was taken from a routine that has no error defined.
>E4	SYSTEM TABLE AREA ERROR (DDT)	An error was returned on the attempt to release the buffer after an I/O call. Indicates that system table area is being destroyed.
>E5	SYSTEM TABLE AREA ERROR (DDT)	An error was returned on the attempt to release the buffered SVC block after an I/O call. Indicates that system table area is being destroyed.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
> 100	END ACTION TAKEN (FUTIL)	The File Utility has encountered an error interrupt. See *Analyze End Action Crash* in Section 8.
> 101	FILE UPDATE ERROR (FUTIL)	A disk error occurred on an attempt to update a blocking buffer to disk during a release LUNO process.
> 102	LINKAGE ERROR (FUTIL)	An attempt to delink a structure known to be in the list was unsuccessful. This indicates that system table area is being destroyed.
> 103	INCONSISTENT LDT/FCB LINKAGE (FUTIL)	An LDT assigned to a specific FCB could not be found on that FCB's list. Indicates that system table area is being destroyed.
> 104	SYSTEM TABLE AREA ERROR (FUTIL)	An attempt to release an LDT resulted in an error return.
> 105	UNEXPECTED ERROR RETURN (FUTIL)	An error return was taken from a routine which is undefined or unanticipated.
> 106	SYSTEM TABLE AREA ERROR (FUTIL)	An attempt to release an FCB resulted in an error return.
> 107	FILE LDT LIST INCONSISTENCY (FUTIL)	The FCB indicates that there are no LUNOs assigned to the file, and yet the file LDT list is not empty.
> 108	BAD DIRECTORY (FUTIL)	This error generally indicates that the directory has been at least partially destroyed (3.0 only). See *Check the Directory Structures* in Section 8 for the directory that a file utility request was being made on.
> 109	SYSTEM TABLE REQUEST ERROR (FUTIL)	This type of error indicates that the system table area header has been destroyed.
> 10A	DISK MANAGEMENT ERROR (FUTIL)	During error recovery processing an attempt was made to release disk space that has just been allocated. This attempt resulted in an error return from disk manager.
> 10B	INCONSISTENT DIRECTORY OVERHEAD RECORD (FUTIL)	The directory overhead indicates that there is an available slot in the directory, but none can be found.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>10C	FAILURE ALLOCATING INTERNAL LDT (FUTIL)	After 65,000 attempts FUTIL was unable to allocate system table area for use as an internal LDT. There is a possibility that this is due to an insufficiently sized system table area.
>10D	FAILURE RELEASING INTERNAL LDT (FUTIL)	The error return on the attempt to release system table area indicates that the address specified was not in the table area. An internal pointer in FUTIL has been destroyed.
>10E	FILE ADU COUNT OVERFLOW (FUTIL)	While building an FCB for the file, the total number of allocated ADUs was found to be greater than 65,535 -- an impossible condition. This indicates that part of the file descriptor has been destroyed.
>120	UNABLE TO DELETE TEMP FILE (SYSRST)	The system encountered an error while attempting to delete a leftover temporary file. This occurs in the system restart task. Ensure that the disk is not write-protected. See *Analyze I/O Error Crash* in Section 8.
>121	UNABLE TO INITIALIZE SYSTEM FILES (SYSRST)	The system restart task encountered an error while attempting to create system files or assign system LUNOs. Ensure that the disk is not write-protected. See *Analyze I/O Error Crash* in Section 8.
>122	END ACTION TAKEN (SYSRST)	The system restart task has encountered an error severe enough to cause end action to be taken. See *Analyze End Action Crash* in Section 8.
>123	WRONG S$LOADER USED IN IPL	The system restart task has discovered that the system was not loaded with the correct release version of S$LOADER. Get the correct file, and check the Track 1 loader.
>130	BAD OPCODE IN SVC BLOCK (INSTAL)	The opcode in the buffered SVC block is not one that is processed by the Install Task (Install Volume, or Unload Volume).
>131	UNDEFINED ERROR RETURN (INSTAL)	A call to the system queuing routine, for which no error is defined, returned an error.
>132	END ACTION TAKEN (INSTAL)	An error interrupt was encountered by INSTAL. Check for memory parity errors.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
> 133	UNEXPECTED ERROR RETURN (INSTAL)	A call to a system routine returned an error where none was defined or anticipated.
> 134	DISK LUNO UNDEFINED (INSTAL)	The predefined disk LDT was not found in the system LDT list.
> 135	ERROR RELEASING LUNO (INSTAL)	An attempt to release a LUNO assigned to a volume being unloaded resulted in a release system memory error. It may be caused by the system table being too full to buffer the release LUNO call.
> 136	ERROR RELEASING FCB (INSTAL)	An attempt to release an FCB assigned to a volume resulted in a release system memory error.
> 137	SYSTEM TABLE REQUEST ERROR (INSTAL)	This error indicates that the system table area header has been destroyed.
> 138	ERROR RETURN FROM DM$TBL (INSTAL)	An attempt to initialize the disk allocation tables for a volume being installed resulted in an error.
> 139	DISK ALLOCATION FAILURE (INSTAL)	An attempt to allocate a previously allocated ADU has been performed. This represents an inconsistency or a user error. See *Check for Improper INV* in Section 8 for the use of the correct track 1 loader.
> 13A	INVALID BIT MAP NUMBER (INSTAL)	An attempt was made to read a nonexistent partial bit map from the disk being initialized.
> 13B	BAD ADU LIST RANGES OVERLAP (INSTAL)	In an initialize disk operation the bad track list input contains overlapping ADUs.
> 13C	POWER FAIL INTERRUPT NOT GENERATED	The power-up interrupt handler has been entered without receiving a previous power-down interrupt. The system power supply should be checked. This crash code only has meaning on systems with power fail support.
> 13D	VALID POWER FAIL RETURN CONTEXT NOT FOUND	The power-up interrupt handler was not able to trace the state of the system back to an executing task or portion of the operating system where interrupts are not masked. This may be the result of a system table linkage error in combination with a power failure. This crash code only has meaning on systems with power fail support.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
>13E	POWER FAIL RETURN CONTEXT INVALID	The power-up interrupt handler has found a return context with either an odd workspace pointer or an odd program counter. This crash code only has meaning on systems with power fail support.
>13F	POWER FAIL MAP FILE LOAD FAILURE	During power-up initialization, the map file could not be loaded to restart the system. The mapping hardware should be checked. This crash code only has meaning on systems with power fail support.
>140	SYSTEM LOG MESSAGE FORMATTING ERROR	An error occurred when the system log returned memory to the system table area; or an error occurred when the system log was delinking its internal system queue.
>141	NO POWER FAIL RECOVERY	A power failure occurred, and this system has no power fail support.
>142	NO TERMINAL AVAILABLE	This crash code appears on the front panel data lights during Disk Build if all terminals return an error in response to the initial message: ***DISK BUILD UTILITY*** DO YOU WISH TO CHANGE ANY DEFAULT VALUES? (Y/N)
>143	TERMINAL I/O DURING DISK BUILD	This crash code appears on the front panel data lights during Disk Build if an I/O error occurs on the selected terminal.
>144	NO RESPONSE TO DISK BUILD INITIAL MESSAGE	This crash code appears on the front panel data lights during Disk Build if 5 minutes pass without a response to the initial message: ***DISK BUILD UTILITY*** DO YOU WISH TO CHANGE ANY DEFAULT VALUES? (Y/N)
>147	PDTSRB IS ZERO IN END RECORD	The software (either in a DSR or some other utility) is giving an illegal value. A crash is forced at this time since the system will crash from the illegal value later. This way the true error situation can be traced more easily. The address of the monitor registers minus 4 should be the address of the PDT for which the DSR is at fault.

Table 5-1. System Crash Codes (Continued)

Crash Code	Message (module called from)	Cause
> 150	DISK CHANGED WITH NO UNLOAD (UV) COMMAND	The system disk has been removed or replaced. Insert a system disk and perform an initial program load (IPL).
> 160	TM$BID HAS TAKEN END ACTION	See *Analyze End Action Crash* in Section 8. Perform an initial program load (IPL). Problems possibly exist in the hardware.
> 177	DS01 USED AS DEVICE IN DCOPY/CVD — IPL REQUIRED	During the process of copying, DS01 has been used in the copy. To ensure that the structures in memory reflect the data on the new system disk, an IPL is required.
> 200	MODEL 990 COMPUTER /12 SELF TEST FAILURE	During IPL the self test detected a hardware error, or during execution of DX10 the computer or software began executing the self test. If you have no custom software (DSRs, SVCs, XOPs) linked into the DX10 operating system, then this is a hardware error and you should call Field Service. If you have custom software, check it thoroughly, then if you find no problems there, call Field Service.

5.3 DUMPING THE CONTENTS OF MEMORY

When a system crash occurs, the system writes the contents of memory to one of two crash files on the system disk (if your system uses DX10 release 3.4 or later). The first of these files is .S$CRASH.

If this file does not exist on a system with DX10 release 3.5 or later, a crash writes memory into the .S$ROLLA file, but only into the primary allocation area. In this case, performing the IPL from the same disk that was the system disk at the time of the crash invalidates the memory dump data as soon as a rollout occurs. If possible, use a different disk from which to perform the IPL, and run XANAL from it. If you need to copy the crash file, call for software help.

If your system uses a prior release of DX10, you must have a programmer panel to write the memory contents to .S$CRASH. With the programmer panel, you press the HALT and then the RUN switches to write the memory contents to .S$CRASH.

5.4 INITIAL PROGRAM LOAD (IPL) PROCEDURES

When you or the system dumps the memory, you must perform an Initial Program Load (IPL) and protect the crash information. The following paragraphs describe IPL procedures for the standard configurations of Texas Instruments computers. If your system does not use a standard configuration, or if you must load from an alternate device, see the *ROM Loader User's Guide*.

5.4.1 Loading Business System 300 Computers

To load the Business System 300, perform the following steps:

1. Cycle the power switch of the S300 computer. DX10 is now loaded into memory.
2. Perform the steps outlined in the paragraph titled *After Loading Your System* in this section. This paragraph follows the loading procedures.

5.4.2 Loading Business System 600 and 800 Computers

Load your Business System 600 or 800 computer by performing the following steps:

1. Press HALT on the Control/Display Module (CDM).
2. Press LOAD on the CDM. DX10 is now loaded into memory.
3. Perform the steps outlined in the paragraph titled *After Loading Your System*. This paragraph follows the loading procedures.

5.4.3 Loading Systems With a Programmer Panel

If your system standard configuration has a programmer panel, you load the system by performing the following steps:

1. Press the HALT/SIE switch on the programmer panel.
2. Press the LOAD switch on the programmer panel. DX10 is now loaded into memory.
3. Perform the steps outlined in the paragraph titled *After Loading Your System*. This paragraph follows the loading procedures.

5.4.4 Loading Systems with an Operator Panel

If your system standard configuration has an operator panel, you load the system by performing the following steps:

1. Turn the key in the operator panel to the LOAD position and release it. DX10 is now loaded into memory.
2. Perform the steps outlined in the paragraph titled *After Loading Your System*. This paragraph follows the loading procedures.

5.5 AFTER LOADING YOUR SYSTEM

Once you complete the IPL procedures for your system, perform these follow up steps:

1. Bid SCI and enter the Initialize Date and Time (IDT) command to initialize the system date and time.

2. Copy the contents of the crash file (.S$CRASH) to a file in another directory. To do this, use the Copy Directory (CD) command. The copy protects the current crash information since another crash would overwrite the crash file.

3. If desired, copy the system log files (.S$SLG1 and .S$SLG2) to save log information about the crash.

4. Initialize the system by entering the Initialize System (IS) command.

5.6 FORCING A SYSTEM CRASH

A problem can occur in the system that does not result in a system crash, yet prevents useful work on the system (such as preventing input to any terminals). For example, a routine can hang in a tight loop if the system table area is being destroyed, or an unforeseen deadlock condition may arise. In such cases, you must force a system crash in order to obtain the crash dump for analysis. The following paragraphs describe how to force a system crash for different Texas Instruments computers.

5.6.1 Business System 300 and Systems With an Operator Panel

You cannot force a system crash on a Business System 300 or on systems with an operator panel (assuming both cases are standard configurations). If your system encounters deadlock or lock-out situations, you must perform an IPL to reload the system. If the deadlock or lock-out situation persists, a programmer panel can be connected to the system to force a memory dump. Contact your dealer or customer representative for details.

5.6.2 Business Systems 600 and 800

To force a crash on a Business System 600 or 800 that has a standard configuration, perform the following steps.

1. Press HALT once.

2. Press HALT ten more times.

3. Press RUN.

4. The system now crashes with a crash code of > 20 or > 27, and .S$CRASH contains the contents of memory at the time of the crash.

5. Perform an initial program load (IPL). (See the paragraph dealing with IPL procedures for your system.)

5.6.3 Systems Equipped With a Programmer Panel

If your standard system configuration has a programmer panel, or if your system has an optional programmer panel, you can force a crash by performing the following steps:

1. Press the HALT switch twice. This forces the system into the clock handler, where it is in a known state.
2. Press the following switches in sequence:
   a. PC DISPLAY
   b. MA ENTER
   c. CLR
   d. MDE
   e. RUN
3. The system should now crash with a crash code of > 20 or > 27.
4. Perform an initial program load (IPL). (See the paragraph dealing with IPL procedures for your system.)

6

ANALZ Utility for System Crash Analysis

6.1 INTRODUCTION

The utility, ANALZ, is used to analyze system crash dumps. The SCI command XANAL invokes the utility. ANALZ requests that you type one of the commands listed in Table 6-2 (the auxiliary commands) and in response it lists the contents of the computer's memory related to the type of data requested by the command. The list is formatted in a hexadecimal form (described in following paragraphs) and contains brief titles indicating the type of data listed.

The ANALZ utility can be used with auxiliary commands stored in a disk file or other sequential device (such as a card reader), and it may be run either in interactive mode (directly from a data terminal) or in a batch stream executed by the Execute Batch (XB) command. Choose the mode which best suits your needs.

If ANALZ is running in batch mode, with a file or sequential input device other than a terminal as the control access name, each input value or command must start in column one of a separate record. Use of files for ANALZ commands allows you to keep a standard ANALZ command stream on file or cards which can be easily and quickly executed after every system crash.

Before going directly to an explanation of the ANALZ utility, an explanation of the formats used and how to locate data within those formats is necessary.

NOTE

A great deal of knowledge about the system is often necessary to determine the underlying causes of a system crash from the mass of tables and structures the ANALZ utility can list. This is not meant to discourage your attempts to read this data. The troubleshooting guide (see Section 8) provides instructions on how to determine a number of things from some system crashes. If, however, you are unable to resolve the problem, or if the problem is not a known one, copy the crash file with a Copy Directory (CD) or Backup Directory (BD) command to a double sided double density diskette (DSDD), hard disk, or magnetic tape media. (Refer to Volume II for a detailed description of the directory commands.) Be sure to include a copy of the link map on the media. Send this information and a description of the events which led to the crash to Texas Instruments.

6.2 DUMP FORMAT AND HOW TO LOCATE DATA

The dump format used by ANALZ is very similar to hexadecimal dump formats used on many computers and software systems. All numbers dumped by ANALZ are in hexadecimal. Blocks of memory are written in 9 columns of 4-digit numbers. The left hand column contains the address of the first word in each line. The remainder of the line contains 8 columns of 4-digit hexadecimal numbers followed on the right by the text representation of the data on that line. For example:

```
MEMORY DUMP FOR TSB/PDT/SEGMENT 0000 , BETWEEN 00000382 AND 00000410
0382-0356 2BA2 0001 0000 0E4D 51F4 9562 0002  .V +. .. .. .M Q. .. ..
0392-0077 0012 924A 0288 9562 3BB2 419E 0001  .. .. .J .. .. ;. A. ..
03A2-0000 250F 0000 0000 0000 0000 0000 0000  .. %. .. .. .. .. .. ..
03E2*0000 0000 0000 0000 0000 0000 0000 454F  .. .. .. .. .. .. .. EO
03F2-5300 3C56 0460 B98A 908F 0024 F000 045A  S. <V .. .. .. .$ .. .Z
```

Each of the eight 4-digit numbers to the right of the dash (–) or asterisk (*) is said to be a *word* of data (also called a *data word*). The text on the right is divided into groups of two bytes, one such group for each hexadecimal data word. If the byte in the computer's memory does not contain a numerical code representing an uppercase ASCII character, ANALZ substitutes a period (.) in the text representation of the data. The column to the left of the dash (–) or asterisk (*) is the *address column*. For any line, the number in this column is said to be the *address* of the line, because it is the address of the first word of data in that line.

The address is separated from the data words by either a dash (–) or an asterisk (*). The dash is the normal separator, and merely separates the address column from the data words. If an asterisk appears there, some lines of the memory dump have been omitted because all words in the line contain the same data as the last word on the preceding line.

At some addresses, the data in memory is intended to be instructions executable by the computer. Such data is called *code*.

6.2.1 Addresses of Data and Blocks in the Computer's Memory

Each word represents two characters, or bytes, of memory. All addresses are given in bytes, so the address increments by two for each word. A word address must always be even. An odd address is the address of the right hand half of the word whose address is obtained by subtracting one from the odd address. In this discussion, the term *data item* refers to either a byte or word.

The address of the first word of the computer's memory is zero. This is true of either physical (that is, not related to a task or other specific part of the operating system) addresses or logical (related to a task or specific part of the system) addresses. The extent or range of legal addresses is said to be the *address space* of the computer, task, or specific part of the system under discussion.

It is often necessary to refer to a part of the computer's memory which consists of a group of words. Such a group is often called a *block*, and its address is the *block address*. The file control block (FCB), task status block (TSB), and logical device table (LDT) are examples of such blocks. The address of a data item or a block is given using one of three points of reference:

- The absolute physical address, relative to the physical zero of the computer's memory. Such an address is a 21-bit even hexadecimal number between 0 and >1FFFFF. This type of address will not be used much in instructions you may be given in the trouble-shooting guide.

- The absolute logical address, relative to the logical zero of an address space defined by a map file. It is an even number between 0 and the highest address allowed by the map file involved. Many addresses, especially the addresses of blocks, will be given in this form.

- The relative address within a block. This is also called the *offset* of the data item. The offset is a number which may be less than zero and is less than the size of the block under discussion. When added to the address of the block, it yields the absolute address of the data item. The address of many data items will be given in this form.

6.2.2 Locating Data

Data is located using either its absolute address or its logical address.

6.2.2.1 Locating a Data Item by Its Absolute Address. A data item is located by absolute address by the same method whether the address is relative to the physical or logical address space. Look down the address column until you find an address that is less than or equal to the address of the data item you are interested in, and where the address below it is greater than the address of the data item you are interested in. Begin at the first word in the line and count up from the address of the line by twos until you arrive at the address you are interested in. The word you arrive at is the desired word.

6.2.2.2 Locating a Data Item by Its Offset into a Block. When the address of the block and the offset are known, but the block has not been specifically formatted by ANALZ such that the first address is the address of the block, the easiest method is to compute its absolute address and proceed as directed in the preceding paragraph. When the block has been so formatted, a simpler method involving counting lines and words can be used. The counting method can be used when the block has not been so formatted if you use the correct word in the line for the beginning of the block.

For example, a block of memory may appear as follows:

```
MEMORY DUMP FOR TSB/PDT/SEGMENT 0000 , BETWEEN 00000382 AND 00000410
0382-0356 2BA2 0001 0000 0E4D 51F4 9562 0002  .V +. .. .. .M Q. .. ..
0392-0077 0012 924A 0288 9562 3BB2 419E 0001  .. .. .J .. .. ;. A. ..
03A2-0000 250F 0000 0000 0000 0000 0000 0000  .. %. .. .. .. .. .. ..
03E2*0000 0000 0000 0000 0000 0000 0000 454F  .. .. .. .. .. .. .. EO
03F2-5300 3C56 0460 B98A 908F 0024 F000 045A  S. <V .. .. .. .$ .. .Z
```

The top address on the left, >0382, is the block address. The >0356 immediately under the word DUMP is the first word of the block, at offset >0. The >924A, the third word to the right of the dash in the line at address >0392, is at offset >14.

A counting procedure can be used to locate a data item in a block. The left three digits of the counting procedure represent a line count, and the right digit is a byte count. Both counts begin at zero. The line count goes up by ones, and the byte count goes up by two for each word.

The following example locates the data at offset > 14 in the preceding block.

To count lines, begin at the first data word of the block, the > 0356. Count it as line zero, and the > 77 as line one. You are now at the correct line. Next, count the first word of the line as zero, the next word as two, the next word as four, and so on. When you get to four, you have the correct word, the > 924A.

Note the asterisk (*) immediately to the right of the address column entry > 03E2. This indicates that some lines of the memory dump are missing,and indeed there are no lines with addresses of > 03B2, > 03C2, or > 03D2. The missing lines contain the same values as the word at the right end of the line with address > 03A2, which is zero (0000).

NOTE

In cases where the asterisk appears in a block, the line count must be mentally counted for each missing line of dump. It may be easier to compute the address of the desired item and use the procedure for locating data items by absolute address.

6.2.3 Locating Data in Workspaces

Workspace registers require a slightly different type of reading convention. A workspace is listed as a two-line block. The sixteen data words are registers 0 through 15, with R0 through R7 on the first line and R8 through R15 on the second line. A typical trap 2 workspace appears as follows:

```
MACHINE ERROR (TRAP 2) WORKSPACE
B920-0000 0002 0000 C004 0020 000F FFE0 0000  .. .. .. .. .. .. .. ..
B930-0000 0000 0000 3D96 1FC0 0000 0002 018F  .. .. .. =. .. .. .. ..
```

The address of the block, > B920, is the contents of the workspace pointer (WP) register when this workspace is in use. The 0000 value immediately to the right of the > B920 is R0 (register zero), the > 0002 is in R1, the > C004 is in R3, and so on. The > 018F is in R15.

6.3 XANAL COMMAND FORMAT

The following example shows the format of the SCI command XANAL:

```
ANALYZE CRASH FILE
      CONTROL ACCESS NAME: <acnm>@
      LISTING ACCESS NAME: [acnm]@
  ANALYZE RUNNING SYSTEM?: <yes/no>
         DISK DEVICE NAME: <name>@
          CRASH-FILE NAME: <name>@
```

Table 6-1 describes the possible responses to the XANAL prompts.

Table 6-1. XANAL Command User Responses

System Prompt	Response Required or Optional	User Response
CONTROL ACCESS NAME:	R	A device name or the file pathname from which you will input auxiliary commands to the XANAL command. The default value is ME.
LISTING ACCESS NAME:	O	The device name or the file pathname to which DX10 should output the specified contents of the system crash file. The default is the terminal local file (indicated by ME).
ANALYZE RUNNING SYSTEM?:	R	Entry of YES specifies that DX10 is to list an analysis of the running system rather than the contents of the crash file. NO specifies that DX10 is to list the specified contents of the system crash file. NO is the default value.
DISK DEVICE NAME:	R	The device name of the disk unit on which the system crash file resides. DS01 is the default value.
CRASH FILE NAME:	R	A name that identifies the file containing the crash dump to be analyzed. The default value is S$CRASH.

After you respond to the prompts, the following prompt appears in TTY mode (one line at a time) from the bottom of your screen:

```
CRASH DUMP ANALYZER - DX10 3.6
COMMAND?
```

You are now ready to enter the command most appropriate to the error you are dealing with. Table 6-2 describes the auxiliary XANAL commands and gives a brief explanation of each. A detailed description of each auxiliary command and the results obtained by its use follows Table 6-2.

Table 6-2. Auxiliary Commands Used With the XANAL Command

Command	Function
AL	Perform the following auxiliary commands: GI, TS, SS, MM, AQ, PQ, TR, TA, and a DM with 0, 0, and > FFFF as parameters. Perform them in the listed order.
AM	Perform the same commands as AL, omitting TA.
AQ	List a representation of the four active queues.
DI	List disk information (simple map disk function).
DM	Dump a specific area of memory.
FC	List the FCBs for all currently assigned files.
GI	List general information about the system crash.
LD	List the LDTs for all assigned LUNOs in the system.
MM	List a map of memory.
PB	List the PBMs for all installed disk volumes.
PD	List the PDTs for all devices in the system.
PQ	List a representation of the other system queues.
PS	List the PSBs for all procedures in the system.
QU	Terminate execution of the ANALZ command.
SA	List the System Table Area.
SS	Write memory images of the system structures. (Perform TB, PS, PD, FC, PB, and LD commands in that order.)
TA	List memory images of every task area in memory.
TB	Lists the TSBs for all tasks in the system.
TR	List the workspace register contents of all tasks in memory.
TS	List task state of all tasks in memory.

6.4 XANAL AUXILIARY COMMANDS

The commands given to ANALZ cause it to select portions of the memory dump on the crash file or actual memory, if the running system is being analyzed. As described earlier and in the descriptions that follow, the auxiliary commands format the memory data and then write it to a listing device.

The following paragraphs describe the format and the results obtained from the use of each command. The commands are listed in the order in which they are executed by the AL command. See the preceding table, Table 6-2 for the AL command order. Use a printed ANALZ dump or the interactive mode to obtain examples of the results of each command.

6.4.1 General Information (GI) Command

The GI command lists general information about the crash as described in the paragraphs below.

6.4.1.1 Crash Code. The entry labelled CRASH CODE is the system crash code that was displayed on the front panel when the crash occurred, followed by the English meaning of the code. See Table 5-1 for a description of the crash codes.

6.4.1.2 Executing Task. This entry is the address of the task status block (TSB) of the task that was executing when the crash occurred. When this value is zero, no task was executing, meaning that the Kernel code is most likely involved in the crash.

6.4.1.3 Location of Failure. This entry is the address at which the crash routine was called. In some cases, this entry points to the exact location of the crash. However, in most cases, this value is the location of a common crash point that is entered from any of several locations and therefore is only of occasional use.

6.4.1.4 Status Register at Time of Failure. This entry lists the value of the status register when the crash routine was called. It is of value in analyzing some crashes.

6.4.1.5 Country Code. This entry tells which country code was specified when the system was generated.

6.4.1.6 KIF Type. This entry tells which type of KIF, sequential or hashed or none, was specified when the system was generated.

6.4.1.7 Image Name. This entry tells what name the system was given in response to the OUTPUT prompt of the system generation program. If the system name has been changed on the program file with the MTE command, this entry may not reflect the name of the system specified in the MVI command.

6.4.1.8 System Variables. A set of system variables is printed after the status register value. Most of these are only of occasional use. Four of the variables may be of some importance. They are:

TM$EXT Scheduler inhibit flag. Used by system tasks to coordinate modification of shared data. This is always greater than zero when the crash is a > 27.

MEMSIZ Total amount of memory in the system expressed in beets (32-byte blocks). This is useful in determining the amount of memory space available for system and user tasks.

NUMDEC Negation of the number of time units since the last scheduling action. If this number is unusually large (more than 20), something may be preventing the scheduler from executing.

RSTRSW Flag that tells if the system has completed initialization. If the flag is set to −1 (> FFFF), the crash occurred when the system was not completely initialized.

6.4.1.9 System Patch Area. A dump of all out-of-line patches that have been applied to the system by the MEMRES patch file is listed. This is used to verify that all out-of-line patches have been applied to the system successfully. The beginning address of the patch area should be equal to the value for S$$PAT found in the link map from the SYSGEN. The last five lines of the patch area will give the revision letter of the release. The revision letter can be checked to determine the release of the system that is in use.

6.4.1.10 Fixed and Run-Time Task IDs. These entries are bit maps of all fixed and runtime task IDs. They are generally of no value in a crash analysis.

6.4.1.11 Monitor Registers and Stack. The monitor registers are the registers of the system at the time of the crash. R0 will often contain the code of an error that caused the task to abort the system. Source listings are often needed to determine the meaning of this code.

When the crash routine was called by a task, R10 is the stack pointer for the task. A segment of the stack will be printed following the workspace registers. The stack pointer can be used to trace back through the stack to determine the system's call path that has returned an error code. Source listings are often needed to trace the call stack.

When kernel code called the crash routine, R10 may not have the stack address and R0 may not have an error code. This is typically the case when a DSR is involved in the crash. Source listings are often needed to determine the meaning of specific register contents. If necessary, you can call for software help to obtain assistance.

6.4.1.12 Interrupt and XOP Vectors. These are used by the computer to process interrupts and execute XOP instructions. They are loaded (from initial data created by system generation) by the IPL process. All the addresses should be even.

6.4.1.13 Internal Workspaces. The last data printed are the workspaces for the clock processor, the machine error interrupt processor, and the SVC processor. These routines are entered through context switches (clock interrupt, machine error interrupt, or XOP) so the return context will be found in R13 through R15 of these workspaces.

Clock Workspace. The clock workspace will contain (in R13 through R15) the location in the computer where the last clock interrupt occurred. This may be a system task, user task, or kernel code. If the crash is a forced crash and was taken properly, and the STATUS REGISTER AT TIME OF FAILURE is > xxx4, the context of the active process at the time the HALT button is pushed is stored in this workspace. If the STATUS REGISTER AT TIME OF FAILURE is a value less than 4, the context of the active process is in another workspace.

SVC Workspace. The SVC workspace will contain (in R13 through R15) the location of the last supervisor call. The clock and SVC workspaces can sometimes help determine where a task was at the time of the crash.

Machine Error Workspace. The machine enters the interrupt 2 process whenever one of the conditions listed in the table below occurs. If this occurs in kernel code, the result is a >20 crash. If it occurs in a system task, the result is the end action crash for that task or a >27 crash. The error codes found in R1 of the trap 2 workspace are as follows:

Code	Explanation	Limitations
1	Memory Parity Error	—
2	Illegal Instruction	—
3	TILINE Time Out	—
5	Mapping Violation	—
6	Privileged instruction	—
9	Segment not present	(990/12)
A	Execute Protect Violation	(990/12)
B	Write Protect Violation	(990/12)
C	Stack Overflow	(990/12)
D	Hardware Breakpoint	(990/12)
E	12 Millisecond Clock	(990/12)
F	Arithmetic Overflow	(990/12)

The meanings of these error codes are given in the troubleshooting guide. (See Section 8.)

6.4.2 Task State (TS) Command

The TS command lists the most commonly referenced items from the TSBs of the tasks in the system. The list contains, for each entry, the task ID (installed in the left half, run time in the right half), the task context (WP, PC, and ST) at the last time the task was scheduled or performed a supervisor call, the current state of the task, the task flags, the TSB address, and the station ID (in hexadecimal) of the associated station. The task flags contain useful information in bit 5. When this bit is set, the task has been rolled out to disk. When this bit is reset, the task is in memory, and you can access the task's memory at the time of the crash using the Dump Memory (DM) subcommand.

6.4.3 Task Status Block (TB) Command

The TB command lists the entire task status block (TSB) for every task in the system. The TSB contains all the information about the task that is used by the system. The most important fields in the TSB listing are the second flag word, the diagnostic context fields, the task diagnostic field, and the task map file.

The second flag word (at offset >16) in the TSB contains information about the task. If the task is being debugged, the first seven bits of the flag word contain information regarding the debugger; otherwise the first seven bits are set to zero.

The diagnostic context (at offset >28) indicates, in the case of an end action or >27 crash, the location in the system task of the instruction that caused the fault.

The diagnostic information field (at offset >26) in the TSB contains the interrupt 2 values for a task that has taken end action. This field is helpful when analyzing an end action or >27 crash.

6.4.4 Procedure Status Block (PS) Command

The PS command lists the entire procedure status block (PSB) for every procedure segment in the system. These entries contain the memory beet address and the length of the segment in beets. The procedures have a count of tasks that are attached to them. If the procedure is flagged as memory resident, then this count must always be at least one. There is no link to the attached task(s) in the PSB; this link is maintained by the system in the TSB.

6.4.5 Physical Device Tables and Device Buffers (PD) Command

The PD command lists the entire physical device table (PDT) for every device in the system. The PDT defines the characteristics for the device it represents. The device buffers are shown with the PDTs; these are meaningful only if the device is marked assigned and busy in the PDT flag field, and the TILINE device flag is off. The first two words in the PDT contain the PDT link and the map file address and are not included in the PDT workspace. If a crash occurred when the system was in a device service routine (DSR), the source listings will likely be required to finish an analysis.

All keyboard devices have a keyboard status block (KSB) as the last part of the PDT. The KSB contains a ring buffer for the characters being typed. By looking at this buffer, the last several characters typed can be determined. Also, the KSB flags contain information about an SCI bid and whether SCI is active at the terminal. R4 of the PDT workspace contains the address of the KSB for terminal devices. The KSB workspace begins at the same place as the KSB PDT. R4 of the KSB workspace points to the word following the ring buffer. That word contains the size in bytes of the ring buffer (set by SYSGEN). R6 of the KSB contains some flags. Bit 4 is set when SCI is active at the terminal. Bit 3 is set when log-on has been requested but has not yet been processed.

The TILINE and diskette drive PDTs have the TILINE image for the last operation issued to the controller at offset >64 into the PDT. The last error image read from the controller is also available, beginning at >9A in the PDT.

6.4.6 File Control Blocks (FC) Command

The FC command lists the entire file control block (FCB), with secondary allocation table (SAT) if present, for every file assigned in the system at the time of the crash. Each disk drive has a list consisting of its VCATALOG entry and all the directories and files under it. Each FCB contains information including the file name, file type, pointers to its parent directory, disk space allocated to it, logical and physical record sizes, and the file type flags.

6.4.7 Disk Partial Bit Maps (PB) Command

Each disk that is installed has information concerning its ADU allocation printed in the dump. A 3-word entry is given for each sector of track 0 that contains disk allocation information. The list entries contain the size of the biggest ADU block for each sector, the size of the first block, and the size of the last block in that sector. There is room in each sector of the bit map to define 2032 ADUs. The partial bit map that is in memory is printed next. Each entry has one word of overhead and 127 words of bit maps. The PBMs are of little use when analyzing a crash, unless it is an >83, >86, or >87 crash.

6.4.8 Logical Device Tables (LD) Command

The LD command lists the logical device tables (LDTs) of all the assigned LUNOs in the system. Every task, station, and global LUNO is listed, with global LUNOs listed first. Then the task local LUNOs are listed in order of TSB. The station local LUNOs are listed after the task local LUNOs for each task associated with the station. The LDT contains the LUNO number and the pointer to the associated file or device.

The contents of the TSB field depends on whether the LUNO is assigned to a device or disk file, and whether the device is file oriented or record oriented. When the LUNO is assigned to a disk file or to a file oriented device, and the LUNO is open, the TSB field will contain a nonzero value pointing to the TSB that owns the LUNO (see system templates). Otherwise, ownership must be determined by knowing which task local LDT list the LDT is in. If it is not task local, ownership and/or last user can often not be determined.

6.4.9 List Memory Maps (MM) Command

The MM command lists information about the system mapping scheme, memory within the system table area, memory in the user task area, and system overlay segment usage. This set of entries should be examined to determine which part of the kernel was active at the time of a crash, or whenever memory management might be involved with a crash.

6.4.9.1 System Memory Maps. The system memory maps listing contains the current map 0 (kernel) map file, followed by all the kernel map files defined in the system. Each entry in the map file list contains seven words. The first word given is the overlay ID of the segment of the system image. This will correspond to one of the overlay IDs on the link map of the system unless it is a buffer created by the IPL process, in which case it will be >FFFF. (Note that the IDs listed in the dump are in hexadecimal while the IDs in the link map are in decimal.) The remaining six words are the map file registers. The first several entries are always the same, as follows:

1. File management and key indexed files
2. Memory resident system tasks
3. User common area
4. I/O common area
5. Scheduler
6. SVC2
7. Disk device service routine (DSR)
8. DSR for each remaining device (each remaining entry contains the DSR of a device on your system)

Any entries out of order indicates merely that system generation created them linked in a different order than the IPL process loaded them. The preceding table gives the order in which they were linked. The best way to identify a segment is to examine the link map for the system.

The map files are constructed the same way for tasks as for kernel segments. The following table gives the calculations for determining the beet address and length of each segment of a map file. Note that if a limit contains > FFFF, that segment is not used. The "–" sign, when used as a unary operator, means compute the two's complement of the term and retain the low order 4 hexadecimal digits of the result.

Segment	Beet Address	Beet Length
1	B1	(– L1)/32
2	B2 + (– L1/32)	(L1 – L2)/32
3	B3 + (– L2/32)	(L2 – L3)/32

where:

L denotes the limit register for the numbered segment.

B denotes the base register for the numbered segment.

6.4.9.2 System Table Area. The system table area header contains information on the size and starting address of the system table area, and the address of the first available block of free space.

The remainder of the table area list gives the free space chain of available memory. Each entry gives the length of that block in bytes and an address pointer to the next available block. Both the length word and next block pointer will always be even. The list is ended with a zero next block pointer. Note that the address of a block is the NEXT BLOCK word of the preceding entry.

The system table area contains many structures of 10 to 400 bytes. When the system table area is heavily fragmented and approaching 100 percent utilization, some system functions (such as device I/O or file management) may not be able to obtain memory to perform the function, and cause a table overflow crash. Whenthis occurs, the size of the system should be evaluated and resizing the system by system generation should be considered.

6.4.9.3 User Memory Area. The user memory area consists of three parts:

- The user memory header
- The available memory list
- The time ordered list (TOL)

All addresses in these tables are given in beets (units of 32-byte blocks). The user memory is considered to be all of the physical memory that is left over after the memory resident segments of the operating system, the memory resident procedures from S$PROGA, and the memory resident buffer for file management have been loaded. Tasks made memory resident by setting the Memory Resident flag in the entry in the system program file (S$PROGA) are not linked into the system, and do not appear on the TOL. However, they do occupy the low address end of user memory.

User Area Header. The user area header contains a pointer to the first available block of memory, the starting address of user memory, and the total length of user memory. No user task can be greater than the total length of user memory. (However, a task cannot exceed 65,504 bytes in length.) Also, no address on any of the three lists should be greater than the total length of memory (MEMSIZ). If this occurs, it indicates an error in memory management.

Available Space List. The available space list is a list of the blocks of memory available for loading user programs and blocking buffers for file management. This is a linked list, with each entry containing a length word and a pointer to the next available block. These entries are kept in the first two words of the first beet of the block.

Time Ordered List (TOL). All user tasks, procedures, and blocking buffers that are not defined as memory resident are found on the time ordered list (TOL). Each of these segments have one beet of overhead that links them on the TOL. The TOL beet contains the block length, the associated structure address, the forward link, the backward link, and the segment type. Blocks on the TOL are located by looking at the pointers in the preceeding or succeeding block, which contain the beet address of the desired block. The beet address of each block is not found at the front of the entry.

The TOL is a circular list that is headed by a beet found at the start of memory. The segment types are as follows:

Beet Address	Task Segment
> FFFF	Header Entry
0	Blocking Buffer
1	Task Segment
2	Procedure Segment
3	Available Block

The header entry appears first on the list and should not be repeated. No segment on the TOL should have a segment type of three.

The user area list is useful for diagnosing a crash that was forced, due to roll in/roll out deadlocks. Deadlocks can be caused by an area of memory being *lost* to the system; that is, the pointer to a memory block may have been deleted.

CAUTION

Do not try to look at the TOL on an active system. The memory chain will change while ANALZ is scanning the list, causing ANALZ to print meaningless data.

6.4.9.4 System Overlay Areas. The system overlay area information gives the address of each overlay area, the status of the area, and the overlay ID. This listing is useful only if the crash occurred when the system was executing in one of the overlays. When the crash occurs in an overlay, this list is used to find the overlay.

The information found at the address given in the system overlay list is as follows:

Offset	Contents
0	Address of next overlay area
2	Status: > FFFF means overlay is loaded and can be used; otherwise the overlay is being loaded and will not be entered until completely loaded
4	Overlay ID
6	Beginning of code loaded from disk

6.4.10 List Queues (AQ and PQ) Commands

The AQ command is used to list the active queue of the system. The PQ command is used to list other queues in the system. The active queue shows the tasks queued for execution at the various priority levels of the system. The PQ command lists many queues, but for normal troubleshooting procedure, only the file utility queue (FUTIL), the waiting on memory queue, the system log queue, the intertask message queue, and the device queues are useful.

6.4.10.1 FUTIL Queue. The file utility (FUTIL) routine services all create and delete file functions and all assign LUNO functions to files and devices. The FUTIL queue is sometimes large because of the type of operation it is performing, such as creating a large key index file, but a large queue may indicate a system problem.

6.4.10.2 Waiting on Memory Queue. The waiting on memory queue contains the addresses of the TSBs of all tasks that are ready to execute but need memory. This queue grows in proportion to the number of tasks that are in the system and the size of available memory. If every user task in the system is on this queue, it may indicate a system problem. No memory resident task should appear on this list. If one does, it indicates a system problem.

6.4.10.3 System Log Queue. The system log queue contains all the system log messages that are waiting to be written to the system log device. System log messages will be kept on the queue if the system log device has not been initialized or if the queue is getting more messages than the system log device can handle. In either case, the messages on the queue will often give a clue as to what went wrong with the system before the crash occurred.

6.4.10.4 Intertask Message Queue. When applications using the intertask communication (ITC) queue stop working properly, look at the intertask message queue to see which application is feeding messages to the ITC queue. The word at >04 of the ITC queue is the message length in bytes. The message begins at >06, and the queue identifier is the byte value at >03. The content of the queue identifier and the messages should indicate the application that is working improperly. Possibly a task that should be receiving messages has terminated or suspended due to a task error or a logic error.

6.4.10.5 Device Queues. Each device has a queue anchored in the PDT. This queue is a list of I/O requests made to that device. When a particular device is offline or inoperable, and the device has no time out value, the list may become long, which may indicate a problem with that device.

6.4.11 Task Registers (TR) Command

The TR command lists all of the workspace registers of the tasks that are in memory at the time of the crash. These are often useful in diagnosing end action crashes.

6.4.12 Task Area (TA) Command

The task area listing shows the raw memory dumps of the task segments. The procedure segments are not shown; these must be listed with the Dump Memory (DM) command.

6.4.13 All (AL) Command

The AL command allows the user to do all of the functions listed above, in the order given, with one command. At the end, the AL command causes a DM command with 0 and >FFFF as the lower and upper limits, respectively. This part of the dump can be important, because it lists the system data base without being restrained to data structures.

This is a useful way of performing a crash dump analysis. It allows for easy referencing between different parts of the system without having to enter separate commands for each part to be analyzed.

6.4.14 All Except TA (AM) Command

The AM command allows you to do the same thing as an AL command, except that the task areas are not dumped. In a large system, these task areas can comprise a large part of the printed dump and are generally not useful. This command allows saving of time and paper.

This is the best way to print a system dump when its cause is unknown. However, you do run the risk of not dumping an area that you may need. Keep the crash dump file contents available to access those areas if you need them.

6.4.15 System Structures (SS) Command

The SS command performs the TB, PS, PD, FC, PB, and LD commands in that order.

6.4.16 System Table Area (SA) Command

The SA command lists the contents of the system's system table area.

6.4.17 Dump Memory (DM) Command

The DM command is used to list memory not shown by any of the above commands. The DM command can be used in four ways by varying the response to the first prompt, TSB/PDT ADDRESS OR SEGMENT #:

1. Give a TSB address and limits within the task's logical address space. This is used to obtain a list of parts of the task area not given by one of the preceding commands, (such as for a procedure segment) or to obtain lists of specific parts in the absence of a TA command.

2. Give the address of one of the physical device tables for the device. This gives the memory available to the DSR, particularly the code for the DSR itself. This second method also allows viewing the I/O common routine area.

3. Give a segment number for the first prompt and limits within the logical address space in which the segment is linked. This allows listing the system common area, an area not accessible any other way. The segment number is the overlay ID of the segment in the generated system's (SYSGEN) linkmap and is always given to ANALZ in hexadecimal.

4. Give a zero or no response to the first prompt to list absolute memory. The responses to the limit prompts are 21-bit absolute address. The BEET BIAS? prompt allows you to tell the ANALZ utility the beet address of physical memory to be considered as the point at which LOWER LIMIT is zero. When examining the TOL or the available space list, the forward and backward pointers are given in beets. The memory identified by such a pointer can be dumped by specifying the beet address as the BEET BIAS. A lower limit of 0 starts the dump with the overhead beet of the segment. Specify an upper limit sufficient to dump the memory you want to examine. This is the easiest method of examining the system root, since the root of the system resides in the first part of the physical memory.

6.4.18 Disk Information (DI) Command

The DI command provides information on each file and directory of the system disk. This command is rarely used in a crash analysis. The information given by the DI command, for each file, is as follows:

- File Name — the name of the file.
- FLAGS — flags indicating status of the file.
- LRL — the logical record length of the file.
- PRL — the physical record length of the file.
- SIZE — the number of ADUs in the file.
- ADDR — the starting ADU address of the file.
- LOG.EOMM — the logical end of file address.
- BLOCK EOM — the physical end of file address.

6.4.19 Quit XANAL (QU) Command

When you are finished analyzing the system crash file or the running system, enter the Quit XANAL (QU) command to return to normal system use.

6.5 OPERATING SYSTEM STRUCTURE

6.5.1 How the System Is Loaded

The system is loaded at IPL time from the segments on the S$IMAGES program file, which are created by the link step of the system generation process. Most segments are linked as overlays so the link editor will put the system together in the way that is needed. The system loader, however, loads all these parts into memory during the IPL process. The internal map files of the system (displayed by the MM subcommand) are constructed by the loader based on the physical memory addresses that the loader knows it will use. See the MM subcommand description earlier in this section for more information on the system map files.

6.5.2 Map Files and System Execution

There are three map files in a 990/10 or 990/12. Each of these map files has three mapping register pairs to use for mapping physical memory into a logical address space. The segments of the logical address space behave as documented in DX10 Volume III. The three map files are used by the system as follows:

- Map file 0 is used by the parts of the system that handle devices, scheduling, and SVC calls.
- Map file 1 is used by tasks. Tasks are executed under control of the scheduler and always use this map file.
- Map file 2 is used by the system when it uses LDD and LDS instructions. (See the *990/99000 Assembly Language Reference Manual.*) Code is never executed from map file 2. It is only used for data access.

6.5.3 Parts of the Operating System

All volatile data is maintained in system memory, most of it in the system table area. The rest of the system is divided into 8 parts:

1. Kernel code — Kernel code is not in a task and is not managed by the scheduler. It always executes in map file 0. It is permanently loaded at IPL time. It is basically divided into three parts: scheduler, XOP code, and interrupt code.
2. Scheduler — The scheduler determines which tasks are executed and when.
3. XOP driven code — This code does initial processing for SVCs. It is executed when a task executes an XOP instruction. Some SVCs are passed on to system tasks to complete the function.
4. Interrupt Code — This code is executed when the computer interrupts the system. Typically this refers to device service routines (DSRs) although the clock is also handled through an interrupt.
5. System tasks — These tasks are managed by the scheduler along with any user tasks that may be in the system. They come in two varieties: disk and memory resident.
6. Disk resident — This is a task that must be executed (usually by some memory-resident part of the OS), that is, loaded into memory from the system program file (S$PROGA) to perform its function. FUTIL is one of these tasks. In the task list, these tasks have nonzero installed IDs, with most of them having the same run-time ID as installed ID because they are not replicatable.
7. Memory resident — This is a task, but is linked into the system during system generation (SYSGEN) so that it is loaded at IPL time. The disk manager (DMGR) is one of these tasks. They have installed and runtime IDs of zero but the name is stored at offset > 18 in the TSB.
8. Overlay code — This is a part of the system that resides on disk in the file .S$OVLYA and is loaded into a system overlay area when needed. It is used by memory resident system tasks. There are several system overlays.

Sometimes a system has tasks made permanently memory resident by setting the memory resident flag in the task attributes in the system program file. These tasks are not part of the memory resident tasks defined above because they are not linked into the system and are not loaded by the system loader. They are scheduled for loading by the system loader, but are loaded by the task loader after the system loader is done.

6.6 XANAL COMMAND EXAMPLES

The following examples show how you can enter the XANAL command and an AQ auxiliary command to list general information about a system crash and active queues.

EXAMPLE 1

Enter XANAL and press the RETURN key. The following prompt appears:

```
ANALYZE CRASH FILE
      CONTROL ACCESS NAME: ME
      LISTING ACCESS NAME: ME
  ANALYZE RUNNING SYSTEM?: NO
         DISK DEVICE NAME: DS01
          CRASH-FILE NAME: S$CRASH
```

Accept the defaults for all the prompts. The following prompt then appears:

```
CRASH DUMP ANALYZER -- DX10 3.6
COMMAND?
```

Enter AQ and press the return key. You should now see a data block similar to the one that follows:

```
ACTIVE QUEUE

NEWEST OLDEST TSB  FLAG  STATE  TSBS

3462   0396   0000 C000  FF03

COMMAND?
```

To return to the main menu, enter QU in response to the COMMAND? prompt.

EXAMPLE 2

To produce an ANALZ dump to be analyzed, enter XANAL. The following prompts then appear:

```
ANALYZE CRASH FILE
      CONTROL ACCESS NAME: ME
      LISTING ACCESS NAME: ME
  ANALYZE RUNNING SYSTEM?: NO
         DISK DEVICE NAME: DS01
          CRASH FILE NAME: S$CRASH
```

Accept the default for all prompts. Your screen now prompts you as follows:

```
CRASH DUMP ANALYZER -- DX10 3.6
COMMAND?
```

Responding with AM produces a dump which combined with the system link map from system generation should give you enough information to identify the problem.

To abort the dump, press the CMD key. Respond to the prompt COMMAND? by entering QU and then the return key. The dump from the AM command and the system link map should be sufficient to allow the dealer or customer representative to identify the problem.

If the dump is to be sent to TI, copy the .S$CRASH file with a CD or BD command along with a copy of the link map to double-sided, double-density diskette, hard disk or magnetic tape media. This allows access to all memory structures for a complete analysis.

7

System Log

7.1 SYSTEM LOG

The system log consists of a list of system log messages on a pair of disk files and, optionally, on a dedicated output device. The items are stored temporarily in a queue in the system table area. You can set the size of the system log queue as an option during system generation and initialization. Figure 7-1 shows a series of system log messages.

Messages can require more than one line. If so, a plus sign precedes field 3 for each line that does not end the message.

```
141:1004+DS03 ERR=1A IID=00 L=D3 A=20F0 0300 0103 0000 FEFE 6B38 0800 9801
                STFF RID=00 F=00 B=0001 0300 0103 0000 0100 6B38 0800 1000
141:1005+LP02 ERR=06 IID=0D L=05 A=6000
                STFF RID=3F F=00 B=4939
141:1006      THIS IS A SHORT MESSAGE
141:1007+     THIS MESSAGE IS MORE THAN 67 CHARACTERS LONG AND WILL BE SPLI
          T BETWEEN MORE THAN ONE LINE
141:1008 MEM  BIT=01 ROW=02 CORRECT=Y BASE=1F000 MEM=96KB TYPE=0 TPCS=FB04
141:1009 MEM  BIT=01 ROW=02 CORRECT=Y BASE=1F000 MEM=64KB TYPE=1 TPCS=FB08
141:1010 MEM  BIT=00 ROW=00 CORRECT=N BASE=00000 MEM=00KB TYPE=0 TPCS=0000
141:1010 MEMC BANK=A PARITY: A=G, B=G BASE=1F000 MEM=64KB EVEN=Y TPCS=FB10
141:1011 STAT DEV=DS04 READS=032E WRITES=004F OTHER=005A ERRORS=001B
141:1012 TASK ERR=07 IID=20 RID=C3 ST16 WP=54A4 PC=3A84 ST=008F
141:1013 **** LOG STARTED ************************************************
141:1014 **** LOG FILE .S$SLG1 FULL
141:1014 **** LOG FILE .S$SLG2 FULL
141:1015 **** LOG MESSAGE(S) LOST
141:1016 **** DEVICE MISSED LOG MESSAGE, I/O STATUS=06
141:1017 **** FILE MISSED LOG MESSAGE, I/O STATUS=15 ON LOG FILE .S$SLG1
141:1018 **** DEVICE LOGGING DISABLED
141:1019 **** FILE LOGGING DISABLED
141:1020 **** ALL LOGGING DISABLED
141:1021 **** SYSTEM CRASH OCCURRED
```

Figure 7-1. System Log Output Example

There are several types of system log messages. The type of each message is defined by the contents of the field immediately following the day and date fields (field 3). The possible types of messages are as follows:

Field 3	Type of Message
< device name>	Device error
TASK	Task abnormal termination
< blanks>	User message
****	System log processor message
MEM	Memory error
MEMC	Error in memory cache
STAT	Statistics

7.1.1 Device Errors

Device errors are generated by the device service routine (DSR) responsible for the particular device. The following is an example of a device error message:

```
073:0735+DS03 ERR=15 IID=00 L=D3 A=00F0 0200 010E 0004 0480 24E0 0803 9040
              STFF RID=00 F=02 B=0001 0200 0109 0004 0A20 1F40 0803 1000
```

where:

ERR is the error code that you can find in Table 4-2 for SVC opcode > 00 in Table 4-1.

IID is the installed ID of the task requesting services from the DSR.

L is the LUNO that was being used for this I/O request.

A is the controller image after the error, which gives the state of the controller.

STxx represents the station of the task requesting services; where xx is the station number.

RID is the run ID of the task requesting services from the DSR.

S or *F* is the number of controller retries. If this field contains an S, the requested operation completed successfully; if this field contains an F, the requested operation was not successful.

B is the controller image that was passed to the controller that initiated the operation.

The controller image (field A), gives the state of the controller for TILINE or CRU devices. For TILINE devices, the image is eight words long. For CRU devices, the image is two words long, but of these, only one word may be significant. TILINE devices may retry after an error; therefore, field A is always the image after the first error. Field B, which is always the image before the error, is used only for TILINE devices.

The DSR (rather than the device) may find certain errors. These errors are a result of an error in the SVC call block, for example an illegal opcode. For these errors, rather than logging a controller image (the A field), the SVC block is logged (represented as the P field) as shown in the following example:

```
073:0650+DS01 ERR=15 IID=02 L=05 P=0A09 0000 46AE 0100 0100 0A23 0001
              ST04 RID=03 S=01
```

7.1.2 Task Abnormal Termination Messages

When a task abnormally terminates, the system writes a log message describing the reason for the termination. If the task has an end-action routine, and that routine resets end action, then no message will be output. If the end-action routine does not reset end action, then on termination of the task, the following log message is output:

```
101:1220 TASK ERR=07 IID=20 RID=D0 ST09 WP=7992 PC=5916 ST=D98F or
343:1441 TASK ERR=15 IID=88 RID=3E ST02 LOAD ERROR CODE=0030
```

where:

ERR is a task error code (refer to Table 7-1).

IID is the installed ID of the task requesting services from the DSR.

RID is the run ID of the task requesting services from the DSR.

STxx represents the station of the task requesting services: where xx is the station number.

WP is the workspace pointer.

PC is the program counter.

ST is the contents of the status register.

LOAD ERROR CODE is the I/O SVC error code that DX10 encountered when reading the task entry or image from the disk.

7.1.3 User Messages

You can produce a system log message by executing the System Log SVC (>21). User log messages can be up to 255 characters in length as follows:

```
202:1007+    THIS MESSAGE IS AN EXAMPLE. SINCE IT IS MORE THAN 67 CHARACTERS LO
         NG, IT WILL BE SPLIT BETWEEN TWO LINES.
```

7.1.4 System Log Processor Messages

These messages are generated by the task that prints log messages. The possible messages produced are as follows:

```
202:1008 **** LOG STARTED**************************************************
202:1009 **** LOG FILE .S$SLG1 FULL
202:1010 **** LOG FILE .S$SLG2 FULL
202:1011 **** LOG MESSAGE(S) LOST
202:1012 **** DEVICE MISSED LOG MESSAGE, I/O STATUS=06
202:1013 **** FILE MISSED LOG MESSAGE, I/O STATUS=06 ON LOG FILE.S$SLG1
202:1014 **** DEVICE LOGGING DISABLED
202:1015 **** FILE LOGGING DISABLED
202:1016 **** ALL LOGGING DISABLED
202:1017 **** SYSTEM CRASH OCCURRED*****************************************
```

7.1.5 Memory Error Messages

The 16K ECC (Error Correction Circuitry) RAM memories save the location of an error when it is a correctable error. The operating system periodically (once every 10 minutes) checks the memory for the occurrence of correctable errors. If the circuitry detects an error, the system creates a log message describing the error. The error latches are reset, but the location that contains the error is not rewritten.

Noncorrectable errors cause a level 2 interrupt to occur. For noncorrectable errors, the row and bit fields are not valid.

The following are examples of memory log messages:

```
202:1018 MEM BIT=01 ROW=02 CORRECT=Y BASE=1F000 MEM=96KB TYPE=0 TPCS=FB04
202:1019 MEM BIT=01 ROW=02 CORRECT=Y BASE=1F000 MEM=64KB TYPE=1 TPCS=FB18
202:1019 MEM BIT=01 ROW=02 CORRECT=Y BASE=1F000 POP=04RW TYPE=2 TPCS=FB18
202:1020 A NONRECOVERABLE MEMORY PARITY ERROR HAS OCCURRED
```

where:

BIT is the number of the bit that is bad. The bits are numbered 0 to >F for the memory data, and >10 to >15 for the ECC bits. The bits are displayed in hexadecimal.

ROW is the row of memory chips in which the error occurred. Each row is 16K or 64K words of memory. The memory controller board can contain 1, 2, or 3 rows of memory. The rows are displayed in hexadecimal.

CORRECT is correctable error (Y), or noncorrectable error (N).

BASE is the physical memory address of the memory on the controller board.

MEM is the amount of memory on the controller board.

POP is the indicator for the populated rows of memory.

TYPE is the type of memory. Normal memory = 0; cache memory = 1, correction control chip = 2

TPCS is the TILINE peripheral control space of the controller. The system software interrogates the memory through this address.

BIT, ROW, BASE, and *TPCS* are hexadecimal values.

7.1.6 Memory Cache Error Messages

If the controller is a cache controller, it is possible to get errors in the cache. The format of memory errors is as follows:

```
202:1021 MEMC BANK=A PARITY: A=G, B=G, BASE=1F000 MEM=64KB EVEN=Y TPCS=FB10
```

where:

BANK is the bank (A or B) in which the error occurred.

PARITY is the status of the parity in each bank. (G for Good, or B for Bad) For instance, PARITY: A = G, means the parity in bank A is good.

BASE is the physical memory address of the memory on the controller board.

MEM is the amount of memory on the controller board.

EVEN indicates whether the error occurred on an even or odd word.

TPCS is the TPCS address of the controller.

7.1.7 Statistics Messages

Statistics are kept by the DSRs to track device use. The types of operations are split into three categories (or counters): read, write, and other. The statistics are dumped to the system log whenever one of these counters exceeds > 7FFF or (for disk devices) when the disk is unloaded. If the device is a disk, the number of errors received from the controller is also dumped with the other statistics. The following is an example of a statistics message:

```
073:0716 STAT DEV=DS03 READS=0CD7 WRITES=0157 OTHER=0001 RETRIES=0001
```

where:

DEV is the device type and unit number.

READS is the number of Read operations performed to the device specified in the DEV field.

WRITES is the number of Write operations performed to the device specified in the DEV field.

OTHER is the number of operations, other than Reads or Writes, performed to the device specified in the DEV field.

RETRIES is the number of times commands were issued to the controller in an attempt to have the operation completed successfully. The RETRIES field will only be dumped for disk devices.

Table 7-1. Task Error Code Meaning

Error Code	Meaning
01	A nonrecoverable memory parity error occurred.
02	The task tried to execute an undefined instruction.
03	The task accessed an illegal TILINE address; the illegal address refers to a physical memory location for which memory is not installed in the computer.
04	The task tried a supervisor call with an illegal supervisor call code.
05	The task tried to access a memory address outside of its memory area.
06	The task tried to execute a privileged instruction.
07	The task was terminated with a Kill Task SVC.
08	The installed memory configuration is not big enough to allow the task to be loaded.
09	The accessed map segment was not present in memory.
0A	An execute protection violation occurred.
0B	The task tried to write to a write protected segment.
0C	The task caused a condition where the stack parameters were exceeded (stack overflow).
0D	A hardware breakpoint address error occurred.
0E	A time-out error occurred (the 12-ms clock expired).
0F	An overflow protection violation occurred.
10	The terminal aborted the task (Hard Break sequence).
15	An I/O error occurred on task load. The Load Error Code in the system log message is the I/O error.

NOTE

In both the device and task error messages, a station ID of >FF means no station.

8

Troubleshooting Guide

8.1 INTRODUCTION

This section discusses the methods and theory of system troubleshooting and provides information to help you identify and correct problems occurring in your hardware or software.

The major topics in this section are as follows:

- About the troubleshooting guide (includes possible sources for assistance)
- Knowledge necessary to use the guide
- Troubleshooting tools and techniques
- General characteristics of problems
- Form and method of use
- Symptoms and suggested actions
- Troubleshooting procedures

Read through *Form and Method of Use* before using the troubleshooting procedures. The case studies will help you understand how to apply the concepts contained in those areas.

The remainder of this section presents some troubleshooting information for your DX10 system and supported hardware. The guide gives some procedures for investigating specific problems.

8.2 GENERAL DESCRIPTION OF THE TROUBLESHOOTING GUIDE

The basic purpose of the guide is to allow you to determine if:

- The problem lies somewhere in your application software.
- You need to call for assistance because of a software problem.
- You need to have malfunctioning hardware repaired.

In general, if you can determine that your application software is not the cause of a problem, but you cannot determine whether system hardware or software is at fault, call for software help before calling Field Service. With assistance, you can often determine and possibly correct the problem.

Additional information is provided if you want to go further. Some problems are easy to solve, and you may prefer not to call for assistance. If you maintain your own hardware, some indication as to which piece of hardware is malfunctioning is valuable, especially with intermittent failures.

Attempt to find the cause of a problem even if you have little experience and/or knowledge. The practice will help you acquire proficiency as well as help you learn some basic troubleshooting skills. Listed below are some of the skills that will enable you to solve problems in shorter periods of time:

- The ability to notice relevant facts about how your machine, terminal, and programs are behaving.

- The imagination to go beyond the letter of the guide. You need to notice when you have been around a particular path once or twice (some parts of the guide are circular) and think of another avenue of investigation. You need to notice when the guide and the other documentation are not giving you the information you need, which indicates that you should call for software help.

- The ability to notice when one error is obscuring another in order to design tests to discover the underlying error.

Don't worry about a problem too long, especially if the problem is critical. With the correct licenses, assistance is available, and such assistance can help you solve the problem in a more cost-effective manner. If you have a software license directly with TI, you can call the Customer Support Line. If you do not, you should call the vendor of your software. Generally, if you need to have malfunctioning hardware repaired, Field Service can service your equipment. If you do not have a service contract with TI Field Service, you can call your dealer or the vendor of your equipment (if not the same as the vendor of the software).

8.3 KNOWLEDGE NECESSARY TO USE THE GUIDE

Troubleshooting is challenging. As with other disciplines, it requires common sense, a working knowledge of the subject matter (not necessarily a deep technical knowledge), and a fertile imagination. The guide is designed for individuals with a moderate amount of computer experience, although someone who has little computer experience can use the guide. The following activities will help you become more proficient at solving the problems encountered in running DX10, especially if you have little experience:

- Study the operation of various commands and utilities.
- Study the guide and error tables and note the reasons given for error causes, and how to recover.
- Study Volume III to learn about the operation of SCI, file management, and task management, and possibly the SVCs, to establish a basic knowledge of DX10 and how it works.
- Practice using the guide and error tables.

Certain technical knowledge of computers is helpful but not necessary; for instance, how to execute a disk operation through the programmer panel. There are alternatives to such courses of action, and although the alternatives require more time than an experienced user might need to execute the specialized action, they are usually more reliable.

When dealing with system crashes or initial program load (IPL) problems, if you have a 990 programmer panel, you need to be able to read binary numbers and convert them to hexadecimal notation. Many procedures do not require that skill, so if you do not know it, you still should not be afraid to tackle your problem.

If you want to learn the conversion procedure, see *Read the Programmer Panel* in the Troubleshooting Procedures paragraphs of this section.

You need to understand hexadecimal notation to deal with error codes. You do not need to know how to convert hexadecimal to decimal unless you are troubleshooting disk errors or system crashes. DX10 provides the Show Value (SV) command that you can use for that purpose.

You need to understand hexadecimal to the extent of following the numeric order. The DX10 documentation uses a leading ">" character to indicate that a number is in hexadecimal rather than decimal notation. The hexadecimal digits are, in order: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. The normal place notation used in decimal applies to hexadecimal. For example, >1E follows >1D, and >D5 falls between >CC and >F0. DX10 often does not display the ">" character on hexadecimal numbers; references to SVC codes, I/O opcodes, and SVC errors are always indicated in hexadecimal.

8.4 FINDING THE EXPLANATION: TOOLS AND TECHNIQUES

In troubleshooting, you must first find an explanation of the failure. Usually you conjecture that some part of the system, hardware or software, either in your application or in the part provided by TI, is failing, or that an inconsistency in the system's or application's data structures has developed. Always choose an explanation that will tell you what to do to fix the problem. For example, if you call service for your hardware problems, rather than try to fix them yourself, it is not necessary for you to determine which hardware component is failing or explain exactly what about it is failing; it is only necessary that your explanation of a failure reasonably account for the evidence that you have in order to justify a service call. The General Characteristics of Problems section explains what sorts of things are reasonable.

Since any printed guide of finite length cannot describe every possible problem and accompanying solution, the definitions and procedures given in this section are only guidelines. Exercise common sense in using the guide, and always take care to protect your data.

If you are unable to choose an explanation, go into a *fact-gathering* mode: try various things to see what contrasts in system behavior and which error codes you can bring out that might be related to the problem. Then try to find an explanation again. You may need to find two explanations, because sometimes more than one problem occurs simultaneously. In that case, be sure that the explanations you choose do not mutually exclude each other. Check for mutual exclusion by verifying that one explanation requires something to not work that the other explanation does require to work, and vice versa.

You have two tools that together provide a useful means of figuring out which of several possibilities is most likely to be the cause of a failure or an error. These two tools are:

- The Law of Parsimony
- The process of elimination

The following paragraphs discuss these two tools. The techniques that follow the discussion of the tools are to help you effectively use them on a DX10 system. Although you may be familiar with them, review the presentation. The background will clarify other parts of this section.

8.4.1 The Law of Parsimony

Briefly, the Law of Parsimony says that you must accept that explanation of a phenomenon which is the simplest. In greater detail (as applied to computer systems), the simplest explanation is the one that:

- Uses the fewest number (preferably one) of malfunctioning system components (either hardware or software)
- Explains in a satisfactory manner the greatest number of known facts, and any facts left unexplained are the least important in the sense that they contain the smallest amount of information
- Contains the least number of contradictions with known facts, and any contradictions that exist are based on the least important facts (least important in the sense of information content)
- Contains no contradictions within itself

The simplest explanation is most often the most reasonable one. When the explanation that seems simplest does not turn out to be correct, the problem usually has more than one cause.

The paragraphs entitled General Characteristics of Problems give some guidelines about how to tell which facts are most important, and how to tell what a satisfactory explanation is. The Law of Parsimony, together with the process of elimination, will allow you to isolate most problems. As you gain experience, you become better able to decide which facts are most important and which explanations are most satisfactory.

8.4.2 The Process of Elimination

The process of elimination is the single most powerful tool at your disposal. You use it every day in all phases of life. Basically, you think about the consequences of doing something, and then decide what effect those consequences might have on you. For example, "If I don't go to the cleaner's today, I will have to go tomorrow. But I can't go tomorrow, because I have a big meeting during the lunch hour. Therefore I must go today." In a computer system, an example may be as follows: "I am getting disk errors when I run this program. If there is something wrong with the disk drive or controller, I should see disk errors on other files too. But this file is the only one on this disk that is ever modified, so the fact that I only get errors on this file does not imply that it is the disk pack. It could still be the drive. The system log shows errors only on one sector, so that is probably a bad spot on the pack and not a problem with the drive." The case studies provide you with examples of this process.

You may not always be able to find one good explanation. For example, some problems with wrong data in memory could be disk, memory, or software problems. Software assistance is usually appropriate for this type of problem, because a detailed knowledge of the system can be used to eliminate many possible causes and thereby narrow the range of possibilities.

When you are trying to explain a number of symptoms that do not lend themselves to investigation (perhaps they are not reproducible), the best explanation may be, "Something is wrong with the machine." However, in the absence of any direct evidence of hardware problems you need to carefully evaluate if any characteristics of software problems exist.

8.5 TECHNIQUES

Several techniques are useful for gathering facts, because in evaluating hardware problems and operating system problems, detailed debugging methods such as the system level debugger, operating system (OS) listings, logic analyzer, and schematics are often not available.

8.5.1 Keep a Log

Make it a practice to keep a log of what happens to the system. (Write the log by hand, so that it is available to you even when the system is down.) Record all changes made to the system, who made the changes, when the changes were made, and all unexpected behavior by the system. Some suggested events that should be logged:

1. New system generations, which devices were added, deleted, or changed, whether the system was generated from scratch or from an old generation that was modified
2. Patch installation, date the patches were obtained and the last patch number in each patch file
3. New hardware installation
4. Repairs to hardware
5. Which disk packs are in use when disk and/or controller related problems are noticed
6. Which disk packs are in use when the system crashes
7. What the crash codes are
8. New application software installation; which program files are involved
9. Modifications to application software; which program files are involved
10. When application problems occur, what the error codes and messages are, what files or devices are in use
11. What you did to fix previous probiems

Problems coinciding with other operations on the system give you the primary clues indicating the direction for your initial investigation. (Coincidence in this section means that things happen at the same time or very nearly the same time, or began happening when someone did something to the system.) Because coincidences are also the primary type of irrelevant information, you need to be careful to obtain concrete data such as the time and date of events, error codes, messages, and system log entries. A log is valuable because the written record can help you quickly spot changes you made and the time when a problem started manifesting itself. Changes in system behavior (for example, starting to get crashes or disk errors) without a change in software (system or application) are important clues to possible hardware problems. Knowing the messages and error codes of past errors, and what you did to fix them, will also help you with future investigations.

8.5.2 Ignore Irrelevant Facts

You need this technique when there is an abundance of facts, some of which may not be relevant or may indicate a problem unrelated to the one you are trying to solve. When diagnosing a problem, you can usually sort facts by analyzing when particular symptoms started and what caused them. Coincidence of system problems with other operations on the system are the most common irrelevant facts. You must be careful, using knowledge of how the system works, to sort out insignificant coincidences and ignore them. For example, you change some device parameters in system generation. About that time your printer starts locking up at arbitrary intervals and you start getting I/O SVC >0E errors. Evaluating more carefully, you find that the >0E errors occur most often when a communications line is running. Having established that the >0E errors are not associated with the printer in any well defined pattern, you can conclude that the printer lockup problem is not associated with the system generation even though the problem started at the same time. The printer lockup could be due to static problems and if you happened to install the new system generation at the beginning of a dry spell, the problem could appear coincident when it really is not significant.

8.5.3 Ignore Contradictory "Facts"

Sometimes you find that available facts are contradictory, in the sense that some of the facts taken together clearly imply one problem, while other facts clearly indicate another problem. In this case, some facts may not be true (for example, if you misread an error code) or the facts can be due to a different cause that you introduced or fixed since you acquired the fact. Perhaps you need to repeat some tests. On the other hand, all the facts may very well be true and the problem may have an explanation that does take into account all the facts.

8.5.4 Fix What You Can Find

If you can determine that a problem does exist, fix it before spending a lot of time on other problems. Sometimes one problem causes two dissimilar symptoms. Often one of the symptoms offers better possibilities for investigation than the other, so you can use it to direct your investigation. When applying the Law of Parsimony, you often encounter situations in which one explanation either fails to explain all the symptoms, or it directly contradicts them. You must evaluate the quality of your evidence and decide if the symptoms thatyou can explain are of sufficient strength to justify the effort to fix the problem. This is most important when you must decide whether or not to call for hardware service; it is relatively inexpensive to try a lot of things if they require only a few minutes; but when you call service you must be willing to pay the bill if there is nothing wrong with your machine. You may want to call for software help to be sure you have not missed something.

If you can determine that two problems are likely to have separate causes, it is fruitful to investigate both at the same time. However, seemingly unrelated problems can turn out to be related and vice versa. This is especially true of hardware problems. After fixing such a problem, monitor the system performance to determine if any signs of improper function remain.

8.5.5 Try Different SCI Commands

The SCI commands report errors in several different forms, some of which are more helpful than others. They also have some common elements that you can use to confirm that an explanation is correct or prove that it is not. Any command that accepts a default of no pathname for the listing file, or produces a listing to the terminal when no listing pathname is requested, uses the terminal local file (TLF). In VDT mode, the TLF is a real disk file in the volume catalog of the system disk. (See *Check the Listing File or Device* in the Troubleshooting Procedures paragraphs of this section.) In TTY mode, the TLF is the terminal itself; there is no intermediate file. In background mode, the TLF is always a disk file. You can try different commands at different terminals to determine if a problem is unique to the terminal, or if a particular command is having a problem or if anything that tries to use the TLF has a problem. Some commands have limited error reporting capabilities. For example, if the Show File (SF) command can assign and open a file, it reports no further errors; it just stops showing when it receives an error condition or an end-of-file (EOF) mark. The Copy Concatenate (CC) command, on the other hand, reports whatever DX10 SVC error code it receives. The latter is more useful because you can look up the error and follow the recovery action recommended. If you need to test whether you can successfully assign a file, you can use SF even for program files or directories. It either shows the file, gets an SVC error indicating that the file is the wrong type or usage, or gets an SVC error indicating that the opcode is wrong (which shows that nothing is wrong with the directory entry because the Assign LUNO processor had to find the file to report such an error), or gets an error indicating a directory has structure problems. The error reports in Tables 3-1 and 4-2 indicate what the problem is. If you can't copy a file with the Copy Directory (CD) command, try CC; it will report the error. The List Directory (LD) and Map Disk (MD) commands both read the directory without checking the structures for each file. They share the same subroutine, so if LD can't read a directory, MD probably cannot either.

The guide contains suggestions for alternate commands, but it does not necessarily suggest everything that you can try. Use your imagination in your quest for more data. However, be careful. Try to predict the consequences of what you want to do; and if there is any danger to valuable data, take precautions such as write protecting disk packs. If you have a disk with good data on it, and the guide suggests that you perform an Initialize a New Volume (INV) command on the pack, don't take the recovery procedure at its word. Exercise caution to protect your data!

8.5.6 Try Different Disk Volumes

In the case of disk errors, Install Volume (IV) or IPL problems, you can try using different disk packs in one drive (keep a backup of your system disk that is not part of your regular backup cycle for this purpose) or the same volume in different drives. Be very careful, however; if you suspect any kind of head crash, do not use any pack that has been in that drive, and do not use that drive. You may damage other packs that you need for data. In general, switching packs can tell you if your system disk is magnetically or logically damaged, so that it won't perform an IPL. It will tell you if a drive or controller damages any pack you put in it, and you can decide whether to call for service or rebuild the pack.

8.6 GENERAL CHARACTERISTICS OF PROBLEMS

This section contains information on the nature and characteristics of problems, both hardware and software. These paragraphs indicate which types of facts are most important, the nature of a satisfactory explanation, and what facts are useful for eliminating possible explanations of errors.

8.6.1 Notes on Evaluating Changing Symptoms

Often you will notice that when you try to fix something, the symptoms of failure either change in nature or change in frequency of occurrence. Such changes may or may not be significant, depending on the nature of the problem. You must also evaluate the symptoms to see if the underlying cause has changed; this is especially true of system crashes, where the crash code by itself may not provide much visibility into the underlying problem. Usually, you can evaluate SVC error codes quickly, but command errors are sometimes too vague, and you may need additional investigation to see if the original problem is still around or if a different problem is showing up.

When a symptom changes in nature, it means you have definitely changed something related to the problem. You may have done one of several things.

1. You replaced a hardware controller with another one. This makes one of the following three changes:

   a. You inadvertently replaced a good one with one that is broken;

   b. You replaced a broken one with one that is good;

   c. You replaced a broken one with another that is broken in a different way. The probability is astronomically small that a second controller will be broken in the same way as the one it replaced, but it has happened.

2. You fixed one problem (hardware or software) that allows another problem to surface.

3. You fixed one problem and in the process altered something that introduced another problem.

If the failure symptom disappears, it is a good sign that you have fixed the problem. However, in the case of intermittent problems, you will need to monitor the computer system for a while. Keep your log book up to date, inspect the system log, and use the log summaries produced by the online diagnostics log analysis tasks to see if other instances of the problem reappear.

When a symptom changes in frequency of occurrence, it is much less significant than if it changes in nature. The frequency of a symptom is a rather subjective judgement; in addition to that, the frequency depends so heavily on system use and load that a carefully designed benchmark is really the only way to tell if a change in frequency really happened. The fact that it happens is significant, and the only other significant fact would be if the error happens every time you try to produce it. In some cases, a large definite change in frequency of occurrence can be significant, but when that happens start looking for a different underlying cause.

A change in frequency is more significant for software than hardware. For example, if you have several programs using a key indexed file in an improper manner, the frequency that the error occurs may decrease when you fix one of the programs. However, the significant fact is that the symptom still occurs, meaning that you did not fix all of the underlying causes.

Any error code that indicates something is wrong with a command procedure, file, or program, and that does not directly imply that a device can produce the problem, indicates a software problem.

8.6.2 Hardware Problems

The hardware is all the electronic circuits that make up your computer. It handles addresses and data flow according to the instructions of the software. Very rarely is it ever sensitive to the contents of the data, and this type of sensitivity is almost always limited to memory. Hardware is also rarely sensitive to the addresses it deals with. There is only one place in a 990 computer where address computation more complex than a simple increment (to compute the address of the next word) is ever done, and that is in the electronics that comprise the mapping registers. TILINE timeouts in the DX10 software or problems with the system's management of user memory can be because of failures in the mapping electronics. Under software instruction, there are many address computations, but if addresses are being computed erroneously there, any arithmetic operation should be subject to failure because the arithmetic electronics are used.

Suspect any problem requiring intelligent manipulation of addresses to be software related. The only satisfactory hardware explanations are based on addresses or data changing by one bit, that is, they are interpreted by the hardware as different from what they should be by a power of 2, or in an extreme case where two bits are affected, by the sum of two powers of two. Cases where addresses or data are different by seemingly random values are satisfactorily explained only if there is a general problem in the interface, which implies that altered data should appear in several places and new instances of the problem should be showing up as you continue to try to operate the system.

Some hardware components, primarily disk controllers, have buffers in them. These buffers are used to smooth the flow of data from main memory to the disk pack itself, and sometimes these buffers have problems. In such a case, the buffers will be sensitive to the physical properties of the electronics comprising them. Any explanation of data lost or changed is not satisfactory if it does not match the properties of the buffer design and electronics.

Hardware problems can happen because of a design flaw (rarely) or because one of the electronic parts fails (most common). They occur in one of two varieties, according to how easily you can make them happen:

- If an error occurs all the time when you request a particular function (this can be for a file, utility, application program function, or a DX10 function like rollin/rollout or an SVC), the error is called *hard* or *solid*. This type of error is easy to reproduce and therefore is easier to fix. It is also easy to distinguish software from hardware errors in this case. Any error code which says it can be produced by a condition in a device indicates a hardware problem.

- If errors sometimes occur and sometimes do not, they are called *intermittent* errors and are difficult to troubleshoot. It is often difficult if not impossible to produce an instance of the error on demand.

The recommended action in the error tables for *solid* errors is usually sufficient. The rest of this paragraph discusses intermittent hardware errors.

The defining characteristic of intermittent hardware errors is *essential randomness*. This refers to the fact that any given intermittent hardware failure, which is virtually always localized to some electronic circuit, will appear in random places in the system or application software, or on disk, depending on the circumstances of system activity that induce the failure. At the electronic device level the failure is usually *solid*, but appears intermittent because the system does not use that device very often in its failure mode. The failure may have a wide variety of visible symptoms, but when you analyze the underlying conditions, the common cause can be seen.

The following paragraphs discuss the symptoms you should see if disk drives, tape drives, the CPU, or memory have failures, and they indicate the noticeable symptoms to check if the errors are essentially random. In addition to this information, refer to the Case Studies paragraphs for some detailed examples.

8.6.2.1 Disk Drives. Disk errors from I/O operations are the principle means you have to determine if a drive or pack problem exists, and they are facts of primary significance. As a repository of errors, the system log is virtually indispensable. You will also need a copy of the Installation and Operation manual for the disk drive system you have. This manual describes the TILINE (C) Peripheral Control Space registers that are listed in the system log messages in the A= and B= fields. The disk error and address information are in these registers. The A= field always indicates the location on disk where the controller was trying to read or write when the error occurred. If the disk is a system disk and you cannot perform an IPL on it because of a flash crash 1, you need to use the paragraph entitled *Find Disk Error Through the Programmer Panel* to find this data.

Generally, if you suspect disk errors, essential randomness depends on the fact that the disk drive hardware does not care which file or which position in a file is being accessed. There is one case in which it can appear to care, and that is if a file on your disk is a high activity file, it is naturally more subject to error in the proportion of disk activity on that file to total disk activity on that drive. A pattern in which all errors occur on the same head but are distributed among cylinders and sectors indicates there is something wrong with that head. Note that some drives have only one head, so randomness depends on a distribution in cylinder and sector error locations. The distribution is a primary fact in dealing with disk problems.

The disk controller and drive together are usually sensitive only to sector, track, and cylinder boundaries, or to no boundaries. They are generally insensitive to the sector, track and cylinder addresses. Address sensitivities are satisfactory explanations only under the *power of two* rule noted before, or if the disk drive's head positioning mechanism is physically dirty. In the latter case, the cylinder addresses should be different by a few cylinders, since dirt is not capable of causing a mis-seek to exactly the same cylinder each time. Dirt is usually also accompanied by successful > 11 errors on read, but writes induce permanent > 11, > 15, or > 17 errors on the disk.

The disk controller does take care of the automatic increment of head and cylinder when necessary, so a problem that shows up in the first or last sectors of tracks or cylinders could mean a controller problem.

Power problems can also cause disk errors and disks to drop offline, but in that case you also expect to see some CPU problems (but not always).

Media Errors. There are basically three types of damage to disk packs:

- Logical damage, in which files have foreign data written in them, but no errors directly related to the disk are reported.
- Magnetic damage, which you usually notice as disk errors. Outside sources, such as a powerful magnet, or failures in the disk drive and/or controller can produce these errors.
- Physical damage, that you can notice as disk errors but more frequently you can notice as severe degradation of the disk surface and the heads in the disk drive. Even so little a sign as a faint dusting in a band around the surface is cause for alarm. Do not use such a pack in another drive. Do not use any other pack in that disk drive until it is serviced.

In addition, the magnetic surface itself may not be capable of holding data because it's too thin, has a bubble or microscratch from manufacturing, or some other problem. The only way to handle this problem is to initialize the disk surface with a bad track to avoid using the weak spot.

Errors on the disk pack can appear as any error except the >1B, unsafe/door open status, and the >14, memory parity error. Although rare, a media fault can make the drive go unsafe, so you need to note if the error occurred coincident with spinning the drive down to eliminate the possibility that a normal volume change operation caused the >1B. Media errors always show up in the same place when they show up. Some media faults are *soft*, which means that the surface holds data for a while, but then loses it. Media errors do not show essential randomness unless the disk errors are induced by the disk drive or controller, in which case they appear to pop up in random places, even in files not being used: and it is then clear that the fault is in the drive or controller.

Other media errors, principally >15 (all) and >11 (on Trident DS25, DS50, DS200) can occur because of power failure or other fault that makes the disk drive abort a write operation. You can always recover from these errors by using the Scan Disk (SD) command, although the data is not always valid. In the case of >11, >17, and >1E errors, the affected sector is cleared to zero. If you cannot recover from an error with SD, the fault on the surface is *hard*, and you need to reinitialize the disk pack with that track labelled as a bad track. If you rebuild data on a pack, and it develops errors in the same places, there is a soft spot that does not hold data, and you need to reinitialize the pack, specifying the track involved as a bad track.

If you get errors reading from disk whenever your program or a DX10 utility access a particular file, and the system log shows that the error happens in the same place, you probably have a medium problem. This may be due to the medium itself or a faulty drive or controller (if magnetic damage is being induced).

Drive and Controller Errors. The primary method of evaluating whether a disk drive and/or its controller have a problem is by noticing the number and distribution of errors coming from the disk during operation. These are the most significant facts. Bear in mind that the distribution of disk errors can be influenced by file distribution and activity. If a particular disk file is updated significantly more often than other files, it may receive more disk errors according to the proportion of disk activity on it relative to the total activity on the disk. Only by examining the errors at the cylinder, head, and sector level can you evaluate essential randomness.

8.6.2.2 Tape Drives. Tape drives behave much the same way as disk drives, only the location of errors on the media is more difficult to determine. You will need to notice how much tape has built up on the takeup reel (a ruler reading to 1/64 of an inch will work) and/or the position of the error relative to the beginning-of-tape (BOT) or end-of-tape (EOT) markers. Also, you need to assure yourself that the problem is not the tape media itself. There are two ways of doing this: show that the media can be successfully used on another drive, possibly on another computer system, or use new or near new tape. If the error always seems to occur when processing one spot on the tape, it is probably due to faulty media. You can notice this by having your application software log file number and record number, or by noting on Restore Directory (RD) or Verify Backup (VB) commands which files are in progress. Since files vary greatly in size, the latter is not a good indicator unless you also measure the physical tape position as noted above. If you have new media and the error always happens when you try to read, or it always happens after reading some amount of tape, you should check the location. If the errors occur in different places, and especially if you can successfully read a place that has previously failed, or vice-versa, you may have a drive and/or controller problem. You may sometimes be able to read a tape clear through, perhaps even five out of six times. The *sometimes* nature of the error, and the fact that it occurs at different places and with different tapes establishes essential randomness.

Hard errors are easier to diagnose. For example, if you get a > 45 error when trying to read a tape, and it happens with new tape, freshly written tape, or tapes you know you have successfully read before, this is a hard error and its omnipresent nature tells you it is a drive or controller problem rather than a media problem.

8.6.2.3 CPU and Memory. Problems with the CPU and memory can show up as disk errors, although the only disk error related to memory is > 14. CPU and/or memory problems can show up as destroyed files on disks (no disk errors), but you should investigate several other causes of destroyed files before checking memory and CPU relative to that problem. Paragraphs in the *Troubleshooting Procedures* relate to this type of problem.

Problems with CPU and memory usually show up as task errors, system crashes, and application programs not giving correct answers and behaving strangely. The system itself behaves strangely. In general, CPU and memory problems induce system crashes. Specific failures may, however, show up in some peculiarly specific ways. For example, if memory at the high-address end of physical memory is failing, it is possible to not see a system crash for a long time and only see application problems. If the CPU has a problem with addressing only in map file 0, you may see only > 20 crashes. You may get > 22, and > 34, > 36, or > 43 crashes (which are related problems) if there is an addressing problem that affects only the system table area. A problem with the long distance mapping hardware can show up only as > A0 crashes if there is some address or data dependency. A memory problem in the memory resident buffer will show up only as > A0 crashes. Incorrect setting of the memory address switches will also cause such problems.

System crashes are useful only if you can examine them to determine the underlying cause of the crash. The troubleshooting guide contains some procedures for some types of crashes.

Generally, if you suspect a problem in the CPU or memory, you should look for failure data that shows essential randomness.

Parts of the operating system use some machine instructions, (rather rarely). Examples of such instructions are LDS, LDD, X, CKON, CKOF, LMF. Failures in these instructions, while they may be intermittent, require analysis of the addressing. There are few enough uses of these instructions that essential randomness may not appear in the locations at which the error appears.

NOTE

The disk allocation algorithms in DX10, and some parts of the communications packages use the X instruction. A failure may show as dual allocation, >83 or >86 crashes, and will be *hard* once induced. It may show as a failure in communications and appear to be hardware related. A call for software help will assure you that there are no known problems for which patches may exist, and assist you in verifying that a hardware problem exists.

8.6.2.4 Power Problems. Power problems can induce system crashes and task errors. If your crash dumps are virtually indecipherable, you have much difficulty keeping your system up, and your system shows a variety of failure symptoms, check for *dirty* power. A CPU or memory circuit that is failing generally causes crashes that you can analyze in a few minutes, and they show a cause that is readily explained in terms of the values that the machine used to compute its address.

If you cannot perform an IPL after a failure, you should take note of the symptoms. If the programmer panel does not respond, at all, or does not respond to all the buttons correctly, something may be wrong with the CPU. It is not possible for normal system software to induce this condition. Cycle the power on the CPU (that is, turn it off and turn it on again) and try the IPL again. If you are successful, a power glitch may have been responsible for the problem. If the problem does not recur, there is no basis for suspecting a problem with the computer. If it does recur with no other symptoms of power problems, the CPU most likely failed. You can attempt to do some work, but be aware that there is an intermittent hardware failure. You should call service. If you cannot perform an IPL, you should try to perform an IPL on an old backup system (not one of your current backup cycle, but use one that has the correct configuration). If you are still unsuccesful, you have hardware problems. If it does not fail the first time, but subsequent attempts at IPL show the same or a similar problem, you have a disk problem and should call service.

8.6.2.5 Expansion Chassis, Double Controllers, and Other Patterns. Sometimes you may notice that all devices in an expansion chassis fail at the same time after running normally, or they do not come up when you perform an IPL, but all terminals and/or printers in the main chassis work. This is a sure sign of a hardware problem in the interrupt expansion circuits. Sometimes 911 terminals fail in pairs. You should note if the pairs correspond to the two 911 controllers on one full-slot board. If they do not, it does not mean there is no hardware problem, only that it is not related to the controller. If they do fail in pairs, it might be the controller. It could also be the backplane or other CRU expansion hardware. Sometimes, you might notice a problem right after changing versions of the operating system. This can be due to hardware or software problems. You should eliminate the possibility of software problems by checking the system generation.

8.6.2.6 Switching Controllers in the Computer. Sometimes you can isolate a problem to a particular board. If you have other boards of the same type from the same or a different computer system, switch the boards. Also check all interface cables and the interface boards to see that they are all securely seated in the connectors. When playing the swapping boards game, be very careful to change only one thing at a time. Problems can be in a peripheral, the cable, the interface board, or even in the chassis. If you are testing the board, do not exchange cables. For example, you have two printers, both serial, and one works, but the other does not. To isolate the printer and cable, you can exchange the cable connection on the two boards. If the problem stays with the printer, the problem is the printer or its cable. If the problem moves, it may be with the board. Exchange boards. If the problem does not move, it is in the chassis or software. If it does move, you know it is the board. Generally, though, if one printer works and the other does not, it is not the software. The software knows nothing about the physical configuration except some CRU addresses or TILINE addresses — and since software is shared between devices of the same type, if one works the other should. There is only one case where software can be at fault: the unique part of software related to a device is the physical device table (PDT), and if that is damaged in memory, a problem could result. However, performing an IPL should clear such a problem. If the problem persists after the IPL, you might have a hardware problem.

8.6.3 Software Problems

Software problems occur because of flaws in the design or coding of the programs involved. These problems do not show essential randomness because software always knows what it is trying to do. That is, software always knows what file or device for which the application or utility programs have requested service. Software problems show *essential coincidence*. At some level, you can notice the same symptom when you use particular programs or files. Software problems can appear to be random, but any randomness depends on the timing necessary to produce the conditions. The hardware can introduce timing restraints that can prevent or induce software problems. Software can be data dependent to a greater extent than hardware. The case studies in this section can help you understand how to apply these concepts to problem resolution.

Software errors are usually related to running one particular program (or group or pair of programs) or using a particular file. To be software related, files on disk have to show problems related to file structure and file blocking.

8.6.3.1 The File System. The file system services operations to one file only, one at a time. Any explanation requiring two file management tasks to work on the same file at the same time is not satisfactory. In addition, if you speculate that there is a flaw in the software, since the code that performs file operations is shared between all file manager tasks, the same flaw should show up in all the files of that type in your system. This is particularly true of sequential and relative record files, but for key indexed files the usage pattern can have much to do with whether a problem shows up. A problem can appear to be related to one application and one file and still be a system software problem.

8.6.3.2 The Device I/O System. The device I/O system shares as much code as possible. Each type of device in the system has a device service routine (DSR). There is only one DSR with a separate data area set aside for each device, and that data area is the physical device table (PDT). Something wrong with a PDT could cause errors in one device, but something wrong with a DSR should cause errors in every device of a given type. In particular, the disk DSR loads system tasks, user tasks, performs rollin/rollout, and loads system overlays (virtually all disk functions). Any explanation that says that the disk DSR was overwritten in memory is unsatisfactory if some things in the system still work. Disk DSR problems tend to show up mostly in error reporting and management.

8.7 HOW TO USE THE GUIDE

The troubleshooting guide is a collection of procedures. Each procedure should be complete in itself and deal with a particular problem or class of problems and/or recovery procedures. Whenever one procedure refers to another procedure, it does so by indicating the paragraph name of the procedure, similar to the way the system calls subroutines. At times you will want to come back to where you were (typically when a suggested action does not yield a solution), so you can try something else. Sometimes you will want to start completely anew, as when a symptom changes in a significant manner. Use the symptoms paragraph that follow, and the error tables earlier in this manual to determine which procedure to use.

It is never necessary to read all the procedures, although reviewing them once or twice will give you a good background in the procedures that are available.

Parts of the Guide are circular, which means you can follow the recommended actions and return to where you started. Often this occurs when an action is recommended for fixing a problem, you try again, and the same errors still appear. It also occurs when the guide refers you to an error table, which may refer you back to the same part of the guide you have been working in. At such a point, note if the symptoms changed. You may need to take another alternative in investigating the error, or start over with the recommendation in the error tables and see if there is something else you can try. At this point, after trying a number of alternatives, you may wish to call for software help. The guide is relatively straight forward and many problems are more nebulous. Use your imagination to come up with alternative avenues of investigation. You may want to try some investigations that appear unrelated.

Keep an open mind; don't dismiss anything out of hand. Things you thought irrelevant when you began your investigation could turn out to be relevant, and vice versa. Please note that no diagnosis procedure is 100 percent reliable. If you run into something you don't understand, make an effort to understand it, but don't spend an excessive amount of time doing so. A phone call could clear things up more quickly.

8.8 SYMPTOMS AND SUGGESTED ACTIONS

This section lists general symptoms that do not specifically appear in the error tables. With each symptom is a suggested course of investigation for finding the cause and fixing it. To find a specific error code from a specific command, use Table 3-1 or 4-2; but to find a symptom, look down the following list until you see something that matches what you observed about your system's behavior.

- You cannot perform an initial program load (IPL):
  - — The fault light and the left 8 numbered lights of the programmer panel are flashing (see Table 2-1).
  - — Only the fault light flashes (see *ROM Loader Errors*).
  - — The fault light is on steady, the programmer panel code is less than or equal to > 200 (see *Analyze System Crash*).
  - — All numbered lights come on and stay on (see *ROM Loader Errors*).
  - — The system appears to load, but the right 8 numbered lights come on, one by one, starting with light 15 (see *Continuous Interrupt*).
  - — The system appears to load, but there is a high amount of system disk activity, very little CPU activity, and no terminal will respond (see *Check the Directory Structures* for both the directory overhead record (DOR) and the VCATALOG file descriptor record (FDR)).
- You can't log on:
  - — The system faults when you press the first key (see the system generation troubleshooting guide in Volume V).
  - — The system appears to load, the IPL activities complete, but no one can log on. (Check the system configuration. See the system generation troubleshooting guide in Volume V of the DX10 manuals. Also, verify that the correct system image is selected for the IPL.)
  - — One terminal does not respond to the log on procedure, but others do. See *Log On Problems* in this section of the manual.
- You can't use an application program supplied by a user or vendor other than TI:
  - — Note the position on the screen, error codes, and exact text of the error message. If you can get DX10 error reports out of standard utilities, check in Table 3-1 for those errors. Otherwise, call the vendor of your software.

- You can't use a TI standard utility (XE, LD, CD, and so forth):

  — Note the error code, the exact text, its position on screen, and whether the cursor is blinking. Note which utility, what input and output/listing files were specified, what values were specified for other prompts. Note if running in batch or foreground (see Table 3-1).

- Synonyms needed by batch streams are deleted.

  — Check to see that M$00, BATCH, Q$SYN, or M$01 is not deleting the needed synonyms.

- You can't install a volume:

  — You received an SVC error on the installation attempt. See Table 4-2. If Table 4-2 does not list the error as being caused by SVC opcode > 20, see the same SVC error code for opcode > 00. The error then applies to the VCATALOG entry in the volume directory.

  — The terminal hangs, the system slows down and nearly locks up, the disk drive shows high activity. You cannot kill the SCI task (see *Check the Directory Structures* for both the DOR and the VCATALOG FDR).

- A file gets very large or fills the disk; takes every available ADU:

  — A Key Indexed File fills the disk (see *Rebuild the Key Indexed File*).

  — A system log fills the disk or never rolls over (see *Check the System Log Operation*).

  — The S$TCALIB file became very large (see *Rebuild the TCALIB File*).

- The data in disk files gets destroyed:

  — Unintelligible data written in files appears to come in whole ADU pieces or in physical record pieces (see *Destroyed Files*).

- You receive an error report indicating SVC I/O errors, an illegal SVC code, or tasks terminating abnormally with task error 2, 4, 5, or 6.

  — A piece of errant code is overwriting an SVC call block, causing invalid parameters to be used by the SVC processor. (Verify that a user program is not overextending an array or another data structure.)

  — A non-reentrant routine in a shared procedure is overwriting program code, data, and/or call blocks. (Verify the operations of various subroutines with a debug aid suited to the language of the user program. See *The Case of the Mysterious Task Errors 2* in this section.)

8.9 TROUBLESHOOTING PROCEDURES

Read the following paragraphs in response to directions in the error tables and the preceding paragraph. You do not need to read them from front to back Related procedures are grouped together. All are arranged alphabetically.

8.9.1 Analyze the Initial Program Load Crash

If you cannot perform an initial program load (IPL) on the system, try an IPL on a backup system, mount the affected disk in a secondary drive and run the Analyze DX10 Crash File (XANAL) command on the secondary drive. Before executing XANAL, see if you can execute the Install Volume (IV) command on the disk in question. (You can still use XANAL on a disk that will not install, so you can still analyze the crash if need be.) If you cannot install the volume, you certainly will not be able to perform an IPL. In this case, you may want to treat the IV problem, copy your data off the pack, and reinitialize the volume. You may also have signs you need to check for media and/or disk errors.

If you can perform an IPL, use XANAL on the system disk.

The affected file may have been logically damaged through improper disk volume replacement procedures (UV/IV not used) or hardware malfunction. The file on disk may not be damaged, but a hardware malfunction may prevent proper reading. Isolate the possibilities by attempting an IPL from an old backup disk pack (one not in your current backup cycle). If successful, proceed to *Rebuild the File* for the file indicated by the flash crash. Otherwise, retry the IPL. If it still fails, the hardware is likely to be faulty and should be serviced.

If you determine that a bad file is causing the problem, you must rebuild the damaged file, or restore it from backup. In the case of the .S$IMAGES file, delete and recreate it, then copy a DUMMY procedure from an operational .S$IMAGES using the Copy Program Image (CPI) command. Then regenerate the system.

8.9.2 Analyze the Crash File Size

To determine the size that the crash dump routine actually used for the dump, look for the symbol CMEMSZ in the linkmap from system generation in the definitions for the PHASE 0. Execute XANAL and use the Dump Memory (DM) subcommand with the address of CMEMSZ for the upper limit and lower limit. If the contents of the data word dumped is less than the MEMSIZ variable listed at the front of the General Information (GI) subcommand, your crash file is too small. Sometimes XANAL does not determine that the crash file is too small, or it determines that it is too small when it really is not. If the crash file is too small, see *Resize the Crash File* in this Section.

8.9.3 Analyze the End Action Crash

Execute the Analyze DX10 Crash File (XANAL) command, and use the General Information (GI) subcommand. Determine the value of the EXECUTING TASK, that is, the task status block (TSB) address of the task that was executing at the time of the crash. Execute the Dump a Specific Area of Memory (DM) subcommand with the EXECUTING TASK value for the LOWER LIMIT. Add about >50 to the EXECUTING TASK value and use the result for the UPPER LIMIT. At offset >26 in the resulting dump of the TSB is the task error code (see Table 7-1) that caused the end action.

To determine the identity of the executing task in a >27 crash, use the Task State (TS) subcommand and inspect the listing under the TSBADR column. Locate the line that has the EXECUTING TASK value in that column and its ID is in the left column in the same line.

Task error codes 1, 6, 9, > C, > D, > E are symptoms of hardware failure. Call for service.

Task error code 3 requires an analysis of the map file to determine the possible cause of failure. Call for software help.

Task error codes > A, > B, > F can be caused by setting the corresponding task attributes in S$PROGA for the task which crashed. Do not attempt to set any of these attributes for any system tasks. If that is not the problem, the hardware failed. Call for service.

Task error code 7 can mean someone or some task has used the Kill Task SVC (or KT command) on a system task. Do not kill system tasks. If that is not the problem, a hardware or software problem exists. Call for software help.

Investigate task error codes 2 and 5 further. If the error is a 2, call for software help. If it is a 5, check if the task was the file manager task by using the TS subcommand to determine its ID. If it is of the form FMxx, where xx is 01, 02, ..., it is a file manager. If not, call for software help.

If the task is a file manager task, see the paragraph titled *Analyze the File Manager for a File* in this section of the manual. If it is a KIF, rebuild that KIF with the Copy KIF Randomly (CKR) and Copy Sequential File to KIF (CSK) commands. Check for various causes of logical damage to files. See *Destroyed Files* in this section. If needed, call for software help.

Aborting the Show I/O Status (SIS), Show Task Status (STS), and Show Memory Map (SMM) commands with the abort task key sequence can cause > 27 crashes. Do not abort or kill these commands. None of these commands takes long to execute unless a problem exists elsewhere. SMM will stop when you press the Command key.

Task error code > 15 should never appear. Either an unable to bid queue server message should appear in the system log or a crash code specific to the condition should appear.

8.9.4 Analyze the File Manager for a File

Execute the Analyze DX10 Crash File (XANAL) command, use the General Information(GI) subcommand, and determine the value of EXECUTING TASK. This value is the task status block (TSB) address of the task executing at the time of the crash. (See Section 6 for more information on the XANAL command.) Use the Task Registers (TR) subcommand and look for REGISTERS FOR TASK < ETSK> where < ETSK> stands for the hexadecimal value of the TSB address that you just acquired from EXECUTING TASK. R14 of that workspace contains the file control block (FCB) address of the file that the file manager task is working on. Use the DM subcommand with the value in R14 for the lower limit and that value plus > 40 for the upper limit. The first row of the dump, in the text on the right, contains the file name. If you need to know the directory name to identify the file, look at offset > 1A and repeat the DM procedure to find the directory name. At offset > 38 is the disk PDT address of the disk drive the volume is mounted in.

In the FCB, look at the flags at offset > 10. If the flags are > 1Exx, where xx means does not matter, the file is a KIF.

8.9.5 Analyze the Illegal Interrupt Crash

Execute the Analyze DX10 Crash File (XANAL) command, and use the General Information (GI) subcommand. (Section 6 explains the XANAL command and its auxiliary or subcommands.) An illegal interrupt crash code of > 13 through > 1F on DX10 3.4 and later systems indicates an illegal interrupt, and you can determine the level of interrupt by subtracting > 10 from the crash code. In a DX10 3.3 or earlier system, examine the status register at time of failure. The last digit on the right plus one is the interrupt level that the system was processing at the time the internal system crash subroutine was called. If this level is 1 or 2, there is a power failure or machine error status. See the paragraph titled *Analyze Kernel Crashes* in this section.

An illegal interrupt is caused when a device not correctly included in the system generation interrupts the system. It can also occur because of hardware failure that causes the interrupt information that the computer provides to the DX10 software to be erroneous. The level of the interrupt is all the information a crash can give you. Other analysis of the problem has to include physical inspection of the computer to determine that controller boards are installed in the correct slots, the interrupts are wired correctly, and inspection of the system generation to verify that it is correct. If the interrupt is one specified for CARD 1 or CARD 2 at system generation for an expansion chassis, use the following steps to determine the chassis position of the device generating the interrupt (or use the procedure given in *Continuous Interrupts* immediately after the crash, and before performing an initial program load):

1. Let the GI subcommand finish so that it displays the HARDWARE TRAP VECTORS.
2. Multiply the level (as determined above) by 4.
3. Locate the word at the address given by the result of step 2.
4. Perform a DM subcommand with the contents of the word located in step 3 as the lower limit, and that value plus > 20 as the upper limit.
5. The first two lines of the dump from step 4 are a workspace. Determine the value in R9 of that workspace. If that value equals the crash code, call for software help.
6. Divide the value in R9 by 8. The result is the position (not slot) in the chassis of the device that caused the illegal interrupt.

Verify the chassis wiring, and so forth, as previously noted for interrupts, and verify the system generation. Hardware problems with expansion hardware are sometimes indicated when chassis position and chassis numbers do not fit the valid range of values, (0 thru > 1F for positions). A value that is not included in a system generation that is known to be correct, or a value that shows a position that is physically not wired in the expansion chassis can indicate this same type of hardware problem. Such a hardware problem can affect the system at random intervals. A problem with system generation always happens at the time of the IPL, or when a certain device(s) is used. For troubleshooting problems with system generation, see the *DX10 Operating System Systems Programming Guide (Volume V).*

8.9.6 Analyze the I/O Error Crash

Execute the Analyze DX10 Crash File (XANAL) command, and use the General Information (GI) subcommand. (See Section 6 for an explanation of the XANAL command and its auxiliary or subcommands.) Note the value for EXECUTING TASK (ETSK). Locate the entry headed MONITOR REGISTERS AT TIME OF DUMP. Depending on the crash code, the error code is in a register or in a memory location whose address is in a register.

8.9.6.1 >2F Crashes. Workspace register R0 contains the I/O error code in the right byte. If the code represents a disk error, check for media and/or disk problems. You may have to reinitialize the pack and add a bad track to the list, and then rebuild the system disk onto it. For any error that is not a disk I/O error, call for software help.

8.9.6.2 >83 Crashes. Use the General Information (GI) subcommand of XANAL to inspect the monitor registers. At the time memory is dumped into .S$CRASH, R14 points to the physical device table (PDT). The Dump Memory (DM) subcommand of XANAL shows which disk drive and volume are involved. Rebuild the volume.

8.9.6.3 >88 Crashes. Workspace register R0 contains the I/O error code in the right byte. A crash with a disk error can indicate something is wrong with the disk pack, the drive, or the controller. File I/O errors apply to the roll file (.S$ROLLA). A file I/O error of >30 means that the roll file was created nonexpandable. That happens if the CFIMG command is used to create it. Always use the CSF command to create the system files.

8.9.6.4 >120 Crashes. Workspace registers R1 and R2 contain the addresses of call blocks. Use a DM command with ETSK for TSB address and the contents of R1 as the lower and upper limit. The word dumped contains the I/O error code in the right byte. If that is zero, repeat the operation with the contents of R2. If both are zero, call for software help. If you get an error code from the dump, the system could not delete temporary files or assign a LUNO to the volume catalog. Find the error in Table 4-2, and apply that information to SVC opcode >00. The first step to make the volume installable should be to clear the temporary file count. If that works, copy the data you need and rebuild the pack. Alternatively, you can see *Check the Directory Structures* for VCATALOG and temporary files in an attempt to make the volume installable.

8.9.6.5 >121 Crashes. The I/O error code is in the left byte of workspace register R5 in the monitor registers. Find the error code in Table 4-2, and apply that information to SVC opcode >00 in Table 4-1. The restart task could not create one of the files or assign a LUNO to one of the files: SSDS, S$FGTCA, S$BGTCA, S$TCALIB, S$PRINT. Check if the disk volume is full or if the VCATALOG directory is full. See *Check the Directory Structures* for those files.

8.9.6.6 Disk Errors. You can isolate a disk error in the roll file or overlay file by renaming the affected file to get it out of the way, creating a new file (and, for the overlay file, copying a good one onto the disk from backup), and performing an initial program load (IPL) on the disk. If the problem does not recur, it was probably a soft spot on the disk pack. Perform an Initialize New Volume (INV) command with the bad track deallocated to cure the problem. If the problem persists, coming back in different disk addresses, it is probably a hardware problem. See *Check for Disk Problems*.

8.9.7 Analyze Kernel Crashes

Kernel crashes occur in the nontask parts of the operating system, and they are not related to an illegal interrupt from a device. They are caused by a machine-detected condition such as an illegal instruction or TILINE timeout, and are not usually related to an interrupt from a device not properly included at the time of system generation. You should determine the conditions and location of the error and check for essential randomness. Execute the Analyze DX10 Crash File (XANAL) command, and use the General Information (GI) subcommand. (Section 6 explains the XANAL command and its auxiliary or subcommands.) Let XANAL execute until the MACHINE ERROR (TRAP 2) WORKSPACE is visible. Workspace register R1 contains the error code (the same codes used for task errors) as found in Table 7-1. R13 contains address of the workspace that was active at the time of the error. R14 contains the program counter, and R15 contains the status register.

If the error code in R1 is a 1, there is a memory parity error and you should have your memory serviced.

If the error code in R1 is a 2, the most likely cause is patches that are partially or improperly applied. Some errors can occur in executing PGS which may not be included in the error count. If the crash occurs within the overlay, also check for patches. Use the DM subcommand with the contents of R14 minus 4 as the lower limit and the contents of R14 plus 10 as the upper limit. R14 contains the address of the instruction following the one that failed. If you see zeros or other values that are not executable machine instructions, check for a patch that is partially or improperly applied by checking the listing from the PGS command.

If the error code in R1 is a 3, you will have to determine which segment of the system was active at the time of the crash according to the instructions that follow. If it is a tape or disk DSR, check the value at >1C in the PDT whose address was given by the workspace pointer minus 4. The value there should be the correct TILINE address. If it is, have the controller serviced. If the TILINE address in the PDT is incorrect, call for software help before calling service. If the active system segment is the first SVC segment, (the link map shows it, including the module SVCIO), check if the address in R14 is in the module TMCKY. If so, have the memory serviced. Otherwise, call for software help.

The most likely cause for other errors is a hardware failure. However, before calling service, check for the following problems. If you are having crashes frequently, check each crash to try to establish essential randomness. If you observe any pattern indicating essential coincidence, you should check any custom software in the system such as DSRs or SVCs, and call for software help first.

The active part of the operating system could be file management fast transfer, either of the two SVC or scheduler segments, or any of the device service routines. First check for file manager fast transfer. Examine register R15 of the TRAP 2 WORKSPACE. If bit 8 is on, and EXECUTING TASK is zero, fast transfer was in progress and the problem is related to a file or the file manager in some way. See *Analyze the End Action Crash* in this section, and proceed as for a >A0 crash, except that information found normally in the TSB will be found in the TRAP 2 WORKSPACE. The task error code is in R1 and the context of the error is in R13, R14, and R15.

Next, check the current map file. At all times, map file 0 is loaded from a data area maintained in system memory which defines the parts of the system which are to be used when various interrupts or an XOP is to be processed. Determine which map file is in use by using the Memory Maps (MM) subcommand. The CURRENT MAP FILE entry is the one in use at the time of the crash. It has below it a column headed OVY# and below that is the ID of the overlay from the S$IMAGES program file that comprises the last segment of the map file. Convert the OVY# to decimal and look through the link map for the system which was produced by the ALGS command. The name of the module will indicate what function was being performed. For example, SVCIO processes SVC and I/O functions and DSR911 processes I/O for 911 terminals. DDIOSR processes disk I/O.

If you determine that the active segment was a DSR, you can determine which device was being serviced by subtracting 4 from the workspace pointer (R13 of the TRAP 2 WORKSPACE). The result should be the address of a PDT. Use the PD subcommand and look for a PDT that starts at that address. If you cannot determine the PDT address in this way, call for software help.

The DSR or other system segment in use at the time of the crash, the error code in R1 of the TRAP 2 WORKSPACE, and the contents of R13 and R14 are the data you need to establish coincidence or randomness. If you have difficulty, call for software help.

8.9.8 Analyze System Crashes

If the system appears to partly load, then faults with a code of >13 through >200, look up the crash code in Table 5-1 and follow the procedure there. If you cannot perform an initial program load (IPL) on any system, the problem is likely to be hardware oriented, and you should call service.

Try to perform an IPL with a backup disk (not one from your current backup cycle). If it gives the same error, you probably have a hardware problem. See *Check for Disk Problems*. If it is successful, initialize the system to start the system log.

Mount the disk pack that fails on IPL in a secondary drive and try an Install Volume (IV) command. If it installs, copy the data that you need, verify the copy, and perform an Initialize New Volume (INV) command on the disk. If it does not install, see *Check the Volume Structures*.

8.9.9 Check the Available Memory Size

Use the Show Memory Map (SMM) command to determine the total memory and the amount of static memory. The difference between the two is the amount of memory available for user tasks. If it is larger than 65,504 bytes, the only limit on task size is the 65,504 bytes imposed by the computer. If it is smaller than 65,504 bytes, the smaller number is the limit on task size, and it is imposed by the size of the operating system in conjunction with the size of the computer's memory. If the amount of memory installed in your system is larger than the total memory indicated by SMM, you should check the switch settings for the memory addresses. Gaps in memory addressing cause the loader to ignore memory above the gap.

8.9.10 Check for File Access Conflicts

Another LUNO is assigned to the file. Some File Utility operations (SVC >00, subopcodes that handle file protection and renaming) generate an error if another LUNO is assigned to the file. In other cases, the LUNO must be open with access privileges that conflict with the access privileges your task or the DX10 utility involved wants to obtain. Use the Show I/O Status (SIS) command specifying the A and YES to the WHOLE SYSTEM? prompt to show all the LUNOs in the system. Search for one assigned to the file you are having a problem with. A LUNO assigned and opened with other than read only access to any directory in the catalog path of the file involved also causes access conflicts. Use the information in the SIS report to locate the task and either wait for it to complete or terminate it.

8.9.11 Check for CPU Problems

Keep your log up to date. When your system crashes, attempt to analyze the crash and call for software help. If you have backup media, or sufficient disk space, use the Backup Directory (BD) or Copy Directory (CD) command to copy the crash files you get. Make sure the crash file is correctly sized (see *Check Crash File Size*). A variety of failures is the primary indication that there is a problem. If you are only getting one crash code, and you cannot determine anything from it or if all the dumps show the same underlying cause of the crash, call for software help.

If you cannot perform an initial program load (IPL) after a failure, you should take note of the symptoms. If the programmer panel fails to respond, or responds incorrectly to some of the buttons, something may be wrong with the CPU. Normal system software cannot induce this condition. Cycle the power on the CPU (that is, turn it off and turn it on again) and retry the IPL. If you can IPL, the problem may have been a power glitch. If the problem does not recur, there is no basis for suspecting a problem with the computer. If it does recur, with no other symptoms of power problems, there is most likely a CPU failure. You can attempt to do some work, but be aware that there is an intermittent hardware failure. Call service. If you cannot perform an IPL, try to perform an IPL from an old backup system disk (not one from your current backup cycle, but one with the correct configuration). If you are still unsuccessful, you have hardware problems. If the IPL is successful, but subsequent attempts at IPL show the same or a similar problem, you may have a disk problem. In this case, call service.

8.9.12 Check for Disk Problems

To determine the cause of disk errors, the primary data to obtain is the type and distribution. If you want to recover data, you should still attempt to find the cause, since recovery efforts may be futile if there is an underlying hardware problem.

If you are having problems with the initial program load (IPL), refer to *Find Disk Error Through Programmer Panel* to obtain the distribution of errors. If you are having crashes from disk errors (for example, >2F and >88), you have to look in the crash dump for the errors. See *Analyze I/O Error Crash*. Disk problems here nearly always mean that you must rebuild the disk.

Look in the system log for disk errors. Use the installation and operation manual for your disk system to interpret the information in the A= field of the log message. This is where you determine the disk addresses in terms of sector, head, and cylinder. Look at what the error is, whether it is recoverable, and how many retries occurred. If it is recoverable, you will not see errors in your applications or in DX10 utilities. If it is not recoverable, the error is passed back to the application or utility that tried to access the disk or a file on that disk. Note the time and date of the disk errors. Try to form a correspondence between them and the times you had a problem. This should be easy to do in the case of unrecoverable errors, but may not be possible with recoverable errors. The hardware can read data incorrectly, but this rarely happens. When it does, the hardware does not usually report any errors.

Look for a pattern. Generally, errors appear in one of the following forms:

1. Always at the same cylinder, head, and sector addresses. Some files are always accessible, others fail at the same places each time you try to access them. The system log shows a lot of unsuccessful retries, mainly >11 and >15 errors.

2. Occurring at several places on the disk, seemingly with no regard for cylinder, sector or head (if the disk has more than one head). Any file you choose can sometimes be successfully read, sometimes not. The system log shows a lot of successful retries, many >11 and >15 errors, but also with >1E and >17 errors. Possibly some unsuccessful retries.

3. Occurring at several places on disk, also seemingly with no regard for cylinder, sector or head. It seems that the number of disk errors is increasing, and once an error is induced into a file it stays there (is "solid"). System log shows a lot of unsuccessful retries, many >11, >15, >1E, >17 errors. There are possibly some successful retries.

4. Occurring at several places on the disk, but showing >19, >18, and >1B errors during normal operation when the disk drive is supposed to stay online. Seems arbitrary. Sometimes you see visible signs that the disk is going offline, but sometimes not. Possibly shows successful retries.

CAUTION

If you do a Show Volume Status (SVS) command while an Initialize Disk Surface (IDS) command is in process on a disk, >19 errors may result and the IDS process may terminate. Do not use SVS while IDS is formatting a disk.

For Item 1 above, evaluate if you have a media problem, as discussed above. For Items 3 and 4, you definitely have a disk drive problem and you should call service. For Item 2, you probably have a disk problem. To be sure, keep monitoring the system log to see if a pattern develops. If not, or if the problem degenerates into an Item 3 type of problem, you have disk drive and/or controller problems and you should call service. If the errors appear to be confined to a given region of disk, try running the Scan Disk (SD) and check the file where the errors reside. If it is a high activity file, rebuild the file. Do not depend on data corrected by SD. Monitor the system log. If the errors go away and stay away, they could have been induced by a power failure or other magnetic disturbance. If they persistently come back, you should check for media errors. If the errors come back in random places, there is a drive and/or controller problem and you should call service. You need a copy of the installation and operation manual for the disk drive system you have. This manual contains a drawing of the TILINE Peripheral Control Space registers that the system log lists in the A= and B= fields. The disk error and address information are in these registers. The A= field always indicates the location on disk the controller was trying to read from or write to when the error occurred.

Generally, if you suspect disk errors, essential randomness depends on the fact that the disk drive hardware does not care which file is being accessed. There is one case in which it can appear to care, and that is if a file on your disk is a high activity file. The file is then more naturally subject to error, because of the proportion of disk activity on that file to total disk activity on that drive. The system log STAT messages can give you a clue to a file's activity. Usually, though, you are aware of your files' activity. A pattern where all errors occur on the same head, but are distributed in cylinder and sector, indicates that something is wrong with that head. Note that some drives have only one head, therefore randomness depends on a distribution in cylinder and sector.

Power problems can also cause disk errors, disks to drop offline, and other errors. However, in that case, you also expect to see some CPU problems.

There are basically three types of damage to disk packs:

- Logical damage, in which files have foreign data written in them but there are no disk errors;
- Magnetic damage, which you usually notice as disk errors. This can be induced by outside sources, such as a powerful magnet, or by failures in the disk drive and/or controller;
- Physical damage, which usually produces disk errors, but you frequently notice as severe degradation of the disk surface and the heads in the disk drive. Even so little a sign as faint dust in a band around a disk surface is cause for alarm. Do not use such a pack in another drive. Do not use any other pack in the disk drive it was just removed from until it is serviced.

Errors on the disk pack can show up as any error except the >1B, unsafe/door open status, and the >14, memory parity error. Although rare, a media fault can make the drive go unsafe, so you need to note if the error occurred coincident with spinning the drive down to eliminate the possibility that a normal volume change operation caused the >1B error. Media errors always show up in the same place when they show up; some media faults are *soft,* which means they don't happen all the time. Media errors do not show essential randomness unless the disk errors are induced by the disk drive or controller, in which case they appear to pop up in random places, even in files you are not using. The fault is in the drive or controller.

Other media errors, principally > 15 (all) and > 11 (on Trident DS25, DS50, DS200) can be induced by a power failure. Other faults that make the disk drive abort a write operation are > 14 and > 16 errors, and these can introduce a > 15 error on the disk. These errors are always recoverable by using the Scan Disk (SD) command, although the data does not always come through. In the case of > 11, > 17, and > 1E errors, the affected sector is cleared to zero. If an error is not recoverable by SD, it means the fault on the surface is *hard* and the disk pack needs to be reinitialized with that track as a bad track. If you rebuild data on a pack, and it develops errors in the same places, there is a soft spot on the pack. Reinitialize the pack, specifying the track involved as a bad track.

8.9.12.1 Recovery. If you do not have a secondary disk that you can use to test the pack with the error, you will have to decide if you can do disk error recovery with DOCS990 or the programmer panel. If so, consult the *DOCS990 Unit Diagnostics User's Guide* and/or the installation and operation manual for your disk drive. If not, rebuild the disk from shipped media and backup media.

Try to perform an IPL with a backup disk (not one from your current backup cycle). If it gives the same error, there is likely to be a hardware problem. However, if the IPL is successful, initialize the system to start the system log. Then, proceed with the Install Volume (IV) command to retrieve the data according to the error message. If a disk error occurs on cylinder 0, head 0, perform a Recover Disk (RCD) command and try to IV again. If it occurred somewhere on the disk other than cylinder 0, head 0, perform a SD command on the disk and see *Rebuild the Disk Volume*.

8.9.13 Check for Dual Allocation

Dual allocation is when two files own the same disk storage. They write over each other's data. A related problem occurs when the system writes data into a file, and that data does not belong there. If the foreign data is cleanly inserted on the boundaries of physical blocks, or on what could be a physical block for another file, the problem is likely software. The most likely cause is that someone changed disk volumes without following the Unload Volume (UV)/Install Volume (IV) sequence. Execute the Check Disk for Consistency (CKD) command. If a bit map is corrupted, CKD will detect the condition. If the software or hardware has not had a chance to corrupt the bit maps, data can be corrupted in files and CKD will not detect a dual allocation.

There may be times when CKD shows that nearly all the files on a disk are dually allocated. This is a sure sign that something wrote invalid data into a directory. Never run CKD with auto correct the first time. Never run CKD with auto correct if you cannot identify exactly which files are dually allocated and which ADUs are involved.

NOTE

CKD only checks the bit maps on track 0 of the disk with the bit map it builds from scanning all the file structures on the disk. Executing CKD with the auto-correct option does not correct dual allocation. It only changes the bit map on disk to match that built from its scan of all the file structures.

The recommended procedure for recovering from dual allocation is to use the Copy Directory (CD) command to copy the disk. If problems then arise due to the fact that the directories themselves are dually allocated, use control files to exclude the directories with problems or include the files you can read. Any file that you can access with the Show File (SF) command, even if it is the wrong type, you can copy with the CD or BD commands. You must recover any files that are not accessible in this manner from backup media.

If you have files written into, but CKD does not show a problem, rebuild those files.

It is possible to correct a disk without copying it, but you should restrict this practice to times when CKD shows only a small number of files are dually allocated and no directories have problems in them. Use the following steps:

1. Copy the affected files to another disk or some other backup media.

2. Delete the files from the affected disk. You can expect an >E4 error when you delete the second file of a dually allocated pair.

3. Execute the CKD command with autocorrect (examine the CKD procedure with SF and use the expert mode — see Volume II.)

4. Copy the files back. Verify the data content of both files and rebuild them if necessary.

See *Destroyed Files* for more information.

8.9.14 Check for File Descriptor Record (FDR) Consistency

Check the file whose name is in the error message and/or action that told you to look here. See *Locate File FDR*. Then use the listing of the FDR to check the following:

- At offset >10, expand the hexadecimal representation into bits like it would appear on the programmer panel. Bits 5 and 6 should have a binary value of 01 for a sequential file, 10 for a relative record file, and 11 for a KIF. 00 is an illegal value.

- At offset >42, the word cannot be zero. The left byte contains the ADUs per physical record, and the right byte contains the physical records per ADU.

- Offset >12 contains the physical record size. Convert it to decimal to compare it with what you think it should be. If any of these listings are wrong, file structure errors could occur.

8.9.15 Check for Hardware Problems

Check that the device is powered up. Check that all cables are securely plugged in and fastened. If errors persist in spite of all efforts, there is probably something wrong with the device.

8.9.16 Check for Improper INV

If an Initialize New Volume (INV) command is suspected of causing a problem, ensure that for a system disk you said YES for the SYSTEM DISK prompt. Ensure that you are not using the TRACK 1 LOADER ACCESS NAME prompt when using the INV command. Do not use .S$LOADER for the track 1 loader. If you are, reissue the INV command, and specify the default for that prompt. If the system still fails, either the system disk is incorrectly initialized, or there is a software problem. Use the Show Absolute Disk (SAD) command to examine Track 1, Sector 0 of DS01. If the value of the first word of the dump is low, in the range of >A4, >A6, >A8 or close to that value, your system disk is correctly initialized and you should call for software help. If it is large, in the range of >47E or close to that value, your system disk is incorrectly initialized. Locate a disk that is correctly initialized or rebuild one from shipped media in order to correctly execute INV commands.

8.9.17 Check for Magnetic Tape Problems

Tape drives have fewer errors than disk drives, but locating errors on tape is more difficult. Notice how much tape built up on the takeup reel (a ruler will work) and/or the position of the error relative to the BOT and EOT markers. To a greater extent than with disks you can use different media to help isolate whether a problem is related to the tape or the drive. The system log data helps you to see how many successful and unsuccessful retries occurred.

Unsuccessful retries are reported to the application program or to the DX10 utility, and so the occurrence of an error is easier to relate to the file, position, and use that the tape had at that point. These *hard* errors can occur because writing a tape was interrupted by power failure, memory parity error, or because the erase head partially erased a previously written record if the tape is being reused. Check if the errors occur on new or near new media. Check to be sure the tape error is not induced by one of the causes listed above. If you can eliminate media as a possible cause, you probably have a drive problem.

Successful retries usually indicate a media problem also. However, they can be related to a drive problem. A tape controller or drive can also write or read data incorrectly without reporting an error.

You need to assure yourself that the problem is not the tape media itself. There are two ways of doing this: show that you can use the media successfully on another drive (or possibly on another computer system), or use new or nearly new tape. If the error always seems to occur when processing at one place, it is probably media. Find this out by having your application software log file number and record number, or by noting for Restore Directory (RD) or Verify Backup (VB) commands which files are in progress. Since files vary greatly in size, the latter is not a good indicator unless you also note the physical tape position as noted above. If you have new media and the error always happens when you try to read, or it always happens after reading some tape, you should check the location. If the errors occur in different places; especially if a place that received an error previously was successfully read in your current try, you have a drive and/or controller problem. You may sometimes be able to read a tape clear through, perhaps even 5 out of 6 times. The *sometimes* nature of the error, and the fact that it occurs at different places and with different tapes, establishes essential randomness.

8.9.18 Check for Memory Problems

Look in the system log for memory errors and disk errors of code > 14. The memory addresses in the system log indicate which board and row of memory is at fault. Sometimes the address switches on the memory controller and array boards are set wrong and this causes TILINE time-out errors, strange data to be written in and read from memory, and address faults. Check for gaps in the switch settings and check for overlapping memory. Either one can cause a problem. Call Field Service if you can verify memory problems. If you are getting seemingly random system crashes and/or strange behavior, see *Check for CPU Problems*.

8.9.19 Check for Power Problems

Power problems generally cause a system to act *sick*. Sometimes the system comes up, seems to run OK for a while, then disks go offline, or the system crashes, or a terminal acts in a strange manner. Power problems can induce disk errors in random places on a disk, possibly in places that should not be written to by your application or the system. Disks or printers can go offline. Sometimes you can't perform an initial program load (IPL) without cycling the power on the CPU. Generally, power problems wreak havoc on a system. Check the ground wires and the power wiring. The site preparation manual tells what the power and ground requirements are. If you meet those requirements, install a line analyzer to check for *dirty* power. If you have power events (low voltage, high voltage, spikes, and so forth) that do not meet the specifications, you may have to install line conditioning equipment.

8.9.20 Check for VCATALOG Errors

An I/O error within the restart task causes this crash. Perform an initial program load (IPL) on a backup system, and try the Install Volume (IV) command with the problem disk as a secondary volume. The resulting SVC error will tell you why you cannot install the volume. Recover as noted in for the SVC error listed in Table 4-2. If you only have one disk drive, call for software help, or rebuild the disk from shipped media and backed up data. Recovering from this problem with the programmer panel is a long operation.

8.9.21 Check Load Bias Conflicts

When a task is loaded, all the procedures attached to it must have the correct length and load address, or bias, for the addressing to work out right. To check this, use the Map Program File (MPF) command to list the program file in which the task is installed. Note the ID of the shared procedure(s) under the P1 and P2 columns. Look under the P1/SAME and P2/SAME columns for a Y or N for that task. If there is a Y, locate the entry in the MPF listing for that procedure. If there is a N, use MPF again to list the system program file (S$PROGA if you have not changed it; check your volume with the Modify Volume Information (MVI) command). Locate the entry in the MPF listing for the procedure. The entry for each procedure contains values in the LENGTH and LOAD columns.

The load address for P1 must be 0.

If the task has only one attached procedure, subtract the LENGTH entry for P1 from the LOAD entry for the task. The result must be less than or equal to > 1E and greater than or equal to 0. If this condition is not true, the task cannot be executed.

If the task has two attached procedures, you must make two checks. First, subtract the LENGTH entry for P1 from the LOAD entry for P2. The result must be less than or equal to > 1E and greater than or equal to 0. Second, add the LOAD and LENGTH entries for P2 together. Subtract the result from the LOAD entry for the task. The result must be less than or equal to > 1E and greater than or equal to 0. If either of these conditions is not true, the task cannot be executed.

If the preceding conditions are not true, the cause is always that the task was linked with object modules for the procedures that were not the same length as the object modules that were used to link and install the procedures. This can happen whether or not you used the DUMMY link editor directive for one or both of the attached procedures. If you do not use DUMMY, the object for the procedures is guaranteed to match that installed in the program file, so the task just linked will run correctly. However, other tasks linked to share the same procedure(s) can begin to display the error when you try to run them. If you do use DUMMY, the error appears on the task just linked.

Several causes besides different object modules in different links are listed here. The list is not comprehensive, but it includes some common linking errors:

- The Link Editor LOAD directive is in the wrong place.
- Subroutine modules are linked in the wrong place, perhaps linked in P1 when they should be in P2 or in the task.
- Procedures are attached in the wrong order (P1 should be P2 or vice versa).
- Other software packages (such as DBMS), which affect the size or location of the run-time, are improperly accounted for in the linking of new tasks.

You can only recover by relinking the tasks with the correct object.

8.9.22 Check the Task Size

If a task will not load, or cannot obtain memory to perform a function (such as call S$BIDT, either directly or through another routine like C$CBID in COBOL) check the task size to determine how much memory that the Get Memory SVC can request. Perform a Map Program File (MPF) of the program file where the task is installed. Add the task origin to the task length. Subtract the result from 65,504, (> FFE0). The result is the amount of memory that the SVC can request. You can make a task smaller by overlaying it, removing unnecessary routines from a shared procedure, or reducing its functional capabilities (by eliminating some routines). In the case where you are calling S$BIDT, your task must be small enough to leave 864 bytes of memory available for S$BIDT to create a copy of the TCA record.

If your task fits in memory according to the calculation above, but still will not run in your system, see *Check Available Memory Size* to compute the limit.

8.9.23 Check the Command Procedure

Many errors that should never happen in normal operation can be introduced by incorrect command procedures that attempt to use standard DX10 utilities. This can happen by calling the utilities directly by coding your own .BID line in your custom command procedures, or by modifying the command procedures provided by TI. If you are using an unmodified command procedure with an unmodified utility program, call for software help. Otherwise, put the command procedure back into its original form. When you modify a procedure, check for correct spelling of the keywords, both as they appear in the menu and as they are used in the body of the procedure. Check for correct coding of the PARMS clause and CODE clause of the .BID line. A common error is to omit a necessary parameter, which causes other parameters to be of the wrong type or value. Inspect a standard command procedure for the correct release of the software package for an example of the correct coding. If you are getting UNEXPECTED EOF error reports, check that all lines of the procedure are present and that all .IF and .LOOP blocks are closed with the correct syntax. See Volume III for information about coding SCI command procedures.

8.9.24 Check the Directory Structures

Two parts of the directory structures may need checking. The directory overhead record (DOR) is one and the file descriptor record (FDR) for some specific file is the other.

To check the DOR, use the List Logical Record (LLR) or Show Relative to File (SRF) command to show record 0 beginning at word 0. The very first data word is the size of the directory, which must be a prime number. This number never changes once the directory is created. If this number is even, it cannot possibly be prime. Some out-of-sequence operations can decrement it, and can cause the system to hang when you attempt an Install Volume (IV) of the volume, or an IPL of the system disk. Examples of these out-of-sequence operations are changing disk volumes without performing an IPL (system disk), or failing to perform the change volume sequence (UV/IV) in the proper order (for a secondary volume). The other three fields of the DOR are much less critical. The fourth word (offset 6) is the temporary file count. This can be nonzero for VCATALOG only. It can never be less than zero. If this count is greater than the number of temporary files cataloged in the directory (or is less than zero), performing an IPL or IV command for this volume also causes the system to hang. The second word (offset 2) is the number of files catalogued in the directory. If this word is a one, any file can be accessed. The third word (offset 4) is the number of available entries. The second word plus the third word plus the number of key indexed files cataloged in the directory should equal the first word. If they do not, it will not affect accessing files. If these counts are off, it will affect creating and deleting files as the directory gets near to full or near to empty.

If you determine that the directory size of VCATALOG is incorrect, you can attempt to make the volume installable by using the Modify Allocatable Disk Unit (MADU) command to correct the directory size. Determine the correct size by locating the first prime number that is larger than the current directory size. If the temporary file count is non-zero, you can attempt to make the volume installable by using the MADU command to clear the temporary file count to zero.

A third possible cause of a hang on IV or IPL is something wrong with the VCATALOG FDR. If you have this problem, proceed with the following paragraphs with VCATALOG as the affected file. For information on locating the DOR for VCATALOG, see *Check the Volume Structures*.

To check an FDR, first perform the instructions in *Locate File FDR*. The second word of that FDR is the hash key value (HKV) of the file. Find the record whose number is given by the HKV of the file. The first word of that record is the hash key count (HKC), which is the number of files cataloged in that directory that all hashed to the same HKV. Search the listing of the directory, and count all the records whose second word is the HKV of the file you are having problems with. If that count does not match the HKC found in the record number HKV, there is a problem with the directory. If you use the Modify Relative to File (MRF) command to modify the HKC to make it the correct value, you will fix the problem. Alternatively, you can create another directory and copy all the files to it with the Copy Directory (CD) command, or you can use the Modify File Name (MFN) command to move the files to the new directory. You would then need to recover any inaccessible files from other backup media.

If you need to work with a disk that you cannot install because of a problem in VCATALOG, you need to use the Show Allocatable Disk Unit (SADU) and Modify Allocatable Disk Unit (MADU) commands. If you have a one disk system, you should rebuild the disk from the shipped media and backup media. You would have to do the equivalent of the following operations through the programmer's panel, and that is a long and error prone process.

When you cannot perform an IPL from a disk, install the disk as a secondary volume and see what error the IV utility gives you. This will give you a good clue, and if it does install, the preferred recovery is to copy off the data that you need and rebuild the disk. If it will not install, and you need data, use the following procedure for VCATALOG to make it install and then use the procedure above for the files you need to copy.

To calculate the disk addresses, you need to know the sectors per ADU and the beginning ADU of VCATALOG. Use SADU and specify ADU 0, sector 0. The sectors per ADU appears at offset >44. The starting ADU of VCATALOG is at offset >40. The guide refers to these numbers as SPA and SAV, respectively. You need to determine the HKV of the file that is giving you problems. Use the *Locate File FDR* procedure given in this section, but use a disk volume that you can install. Preliminary to that, you can use SADU to inspect the sector at SAV, sector offset 0 to determine the size of the directory and verify the integrity of the DOR. If the temporary file count is not 0, use the MADU command to clear it and retry the IV command. Then the following steps will allow you to inspect the sector corresponding to the FDR, if it is in the record number of its own HKV (most system files are):

1. Compute HKV/SPA. The result is the relative ADU in VCATALOG of the FDR. Call it RA.

2. Compute HKV – (SPA*RA). The result is the sector offset in the relative ADU of the FDR. Call it RS.

3. Compute RA + SAV. The result is the absolute ADU on disk corresponding to RA. Call it AA.

4. Use the SADU command with AA for the ADU and RS for the sector offset. You should be looking at the FDR for the file. If you are not, either you used the wrong directory size for the HKV determination or the VCATALOG FDR was overwritten. In the latter case, recover from backup media.

If you have trouble with this process, call for software help.

8.9.25 Check the Listing File or Device

The listing file or device is for some reason inaccessable to the program. If you use this procedure for reasons other than a listing, the data about the terminal local file (TLF) and temporary files probably does not apply.

If the problem is a device, check if it is offline. Check that it is turned on and correctly cabled to the computer. Check if I/O was aborted to that device by looking in the system log for >06 errors on that device. Timeouts also produce >06 errors, so check if you are getting system log messages for the device periodically or continuously. Either case indicates that a program is waiting for that device to become available, and that the device is offline. If the device is producing >06 errors or is not available even when the status lights says it is, the device is probably malfunctioning and you should call Field Service. Errors >07 can also indicate a device is turned off or malfunctioning.

If the listing is going to a file, check if the disk is write-protected. Execute the Show Volume Status (SVS) command to check if there is room enough on the disk for the file to grow (this can be a problem if part of a list is produced before the error occurs). Execute the List Directory (LD) command to check if the file is write protected and if the directory the file is cataloged in is full. If LD gives an error, use LD on the other levels of directories to see that they all exist. Note that if some are full, only the last directory, the one that holds the file, needs to have an available entry for the file. See *Check File Access Conflicts* about the file and all the directories that lead to it. See *Check the Command Procedure* for correct specification of the listing file. Also see *Check for Disk Problems*. If the log does not appear to be working, see *Check the System Log Operation*. See *Check the Directory Structures* for the file.

The following paragraphs list various types of files, which disk they appear on, and how the name is constructed. Use these paragraphs in conjunction with the previous recommendations to determine which file name to check.

8.9.25.1 Terminal Local File (TLF). This file is always on the system disk in the volume catalog (VCATALOG). Its name depends on whether you are having problems running it in foreground or background, and on the station number it was executed from. If foreground, the name is S$FTLFss, where ss is the station number. If background, the name is S$BTLFss, where ss is the station number. Any utility that accepts a null value for the listing access name uses these files when the null response is selected. If there is something wrong with the VCATALOG directory structures, usually only one station's TLF is affected and other stations can run normally.

8.9.25.2 Text Editor Temporary Files. The temporary files used during text edit, which are created at the time the editor is invoked, are always on the system disk in the volume catalog (VCATALOG). The names are S$TEXTss and S$MODss, where ss is the station number. If there is something wrong with the VCATALOG directory structure usually only one terminal is affected.

If the error occurs when the edit is finished and the Quit Editor (QE) command is invoked, then the problem could be in one of two places: the VCATALOG directory structures (TEMP FILE I/O ERROR) or the output file's directory (FILE RENAME FAILED). The temporary file is a true DX10 temporary file on the same volume as the output file. See Volume III for a discussion of temporary files. If this is the problem, no user would be able to invoke the QE command with an output file on that volume. You create the output file by renaming the temporary file once you successfully build the temporary file.

8.9.25.3 Link Editor and Language Compiler Files. These files are typically created on the system disk, and may be true DX10 temporary files or may have their own file names (as for Pascal). If the language processor creates its own file names the user documentation for the language will tell what those file names are.

8.9.26 Check the System Log Operation

The system log is comprised of two files on the system disk: .S$SLG1 and .S$SLG2. Errors detected by the system are written to the log. When one file fills up, the system automatically begins using the other file at the beginning of the other file. Section 7 of this manual explains the format of the system log entries. A LOG STARTED message appears for the last time you initialized the system (usually with the IS procedure). The log can also include volume install and unload messages, and various other normal messages indicating activity on your system. If you do not see those messages, and the day number of the system log is not current (especially if it is several days or weeks old) then something happened which prevents the Initialize System Log (ISL) command from starting the log. A file I/O error or device error of some sort can cause this to occur.

If one of your system log files is acquiring a large number of records (the size created by ISL holds about 150 log record) or is filling the disk without changing to the other log file, use the Map Disk (MD) command and respond NO to the SHORT FORM prompt and use the pathname of each system log file. The SEC= entry will be nonzero if the file is expandable, which is the cause of the problem. The log files are supposed to be nonexpandable which is what they are if you let ISL create them. If you want larger files than the ISL command creates be sure to create them nonexpandable.

To correct both these conditions, perform the following sequence of operations for each of LUNOs > 12 (.S$SLG1) and > 13 (.S$SLG2):

1. Perform a Release Global Luno (RGL) command for the LUNO.
2. Perform a Delete File (DF) command for the corresponding file.
3. If desired, create the files with the desired initial allocation and non-expandable.
4. Perform an ISL command. Check .S$SLG1 for the expected LOG STARTED message. If it will not come up, call for software help.

8.9.27 Check the TCA File

Check that global LUNOs 1, 2, and 3 are correctly assigned to S$FGTCA, S$BGTCA, and S$TCALIB respectively. Check that they are not masked by station local LUNO assignments. The result of a wrong or masked assignment can be a bad record written into the file to which the LUNO is assigned.

If a program is using a LUNO that is the same as the SCI LUNOs, the system works fine as long as the LUNO masks the SCI assignment *and* the program is executed in such a way that SCI does not try to use the masked LUNO (such as using the Execute Task (XT) command). If you should forget to assign the LUNO, the program could write invalid data into the terminal communication area (TCA) file. The invalid data would cause problems any time an attempt was made to use the terminal, or user id whose TCA record was overwritten. If the TCA files have been damaged, install the disk as a secondary volume, and delete the S$FGTCA and S$BGTCA files. They will be created by the next IPL. If the S$TCALIB file has been damaged, see *Rebuild the TCALIB File*.

On a single disk system, release the global LUNO 2 and delete S$BGTCA. Then perform an IPL. Write a batch stream that releases global LUNO 1 and deletes S$FGTCA. Then perform an IPL. You should be able to use all terminals. If there is still a problem with some user id, you will have to see *Rebuild the TCALIB File*.

If you have added terminals, and you are having problems with the terminals you added, check that there is enough room on the disk for the foreground and background TCA files to expand. Check that those files are expandable. If room is not available or the files are not expandable, those terminals will not be able to log on or use the background.

8.9.28 Check the Volume Structures

Use the Show Allocatable Disk Unit (SADU) command on ADU 0, sector 0 to inspect the volume structures. The volume name is in the first 4 words, and should be intact with trailing blanks. The word at offset > 40 is the starting ADU of VCATALOG. If these are not intact, see *Rebuild the Disk Volume*.

8.9.29 Compress the Program File

A program file can be in one of three states:

- Has no *holes* (for example, no tasks, procedures, or overlays have been deleted), which means the end of medium ADU is the same as the total ADUs allocated.
- Has no *holes*, but the end of medium ADU is less than the total ADUs allocated.
- Has *holes*, and the end of medium ADU may or may not be less than the total ADUs allocated.

You can compress a program file with one or two copies using the directory utilities. Naturally, the first state listed above needs no compression. The second state exists only when you know that no image segments were deleted since the file was created or last compressed. Use one copy operation, which can be one of the following sequences:

- One use of the Copy Directory (CD) command.
- Use of the Copy and Verify Disk (CVD) command.
- Use of Backup Directory (BD) and Restore Directory (RD) with the FAST option.

The third state requires a two-step process. Use one of the following sequences:

- Two uses of the CD command. Create an intermediate directory for the output of the first CD and the input of the second CD. Verify each copy, and delete the original between the two uses of CD.
- BD and RD without the FAST option.

The following sequences will not compress a program file with holes in it:

- CVD, no matter how many times executed.
- BD and RD with the FAST option, no matter how many times executed.

8.9.30 Compute the Total Overlay Size

The total amount of memory needed to load an overlay, which includes the bit map, is computed as follows (only programs that load overlays into memory obtained with the Get Memory SVC or at an address other than the linked address would need this procedure):

1. Execute the Map Program File (MPF) command to determine the length of the overlay, which is given in hexadecimal bytes.
2. Divide the length from step 1 by 32. If the remainder is nonzero, add 1 to the result. Multiply by 2. The result is the length in bytes of the memory necessary to hold the bitmap.
3. Add the result of step 2 (length of bitmap) to the result of step 1 (length of overlay). The result is the amount of memory necessary to accommodate the overlay.

NOTE

The Link Editor automatically allows for all the memory necessary to load overlays and adds that to the total length of the task that it reports in the link map. If you are loading overlays in a task linked with the overlays (normal use), you do not need this procedure.

8.9.31 Continuous Interrupts

A controller and/or other interface hardware (TILINE coupler, CRU expander card, CRU buffer card, backplane, interrupt jumper wires, and so on) can fail in such a way that it interrupts the system software with a service request but the software cannot clear the interrupt. This induces a *hang* condition in which the programmer panel's lights freeze or go to a state >00FF. (This condition can also be induced by a bad system generation. See the System Generation Troubleshooting Guide in Volume V for more information.) To determine the cause of the *hang*, press HALT/SIE, then ST under DISPLAY. Note the contents of bit 8 and bits 12 thru 15. Press RUN, then repeat the procedure. Press RUN again. Do this several times, until one value emerges as the most frequent one. If bit 8 was on at any time, it is not likely to be a device controller problem. In this case, force a crash, and call your dealer or customer representative for software help. Otherwise (if bit 8 has never been on), add 1 to the most prevalent value of bits 12 through 15. This is the level of the interrupt that is causing the problem. If it is an interrupt in the main chassis, determine which device is the likely cause of the problem by inspecting the chassis and your system generation configuration.

If this is the interrupt level of an expansion chassis, you will need to do some more work. Note if the interrupt level corresponds to your response to the CARD 1 or to CARD 2 prompt when you did the system generation. Obtain the chassis and position of the offending interrupt by using the following procedure:

1. Press HALT, then CLR.
2. Enter >C000 in the lights.
3. Press WP, PC, and MA, all under ENTER.
4. Place the following values in the lights in succession and press MDE and MAI after each one.

   >020C
   >1F00 for CARD 1 or >1F20 for CARD 2
   >3404
   >10FF
   >0000

5. Press RUN, then HALT.
6. Enter >C008 in the lights.
7. Press MA under ENTER.
8. Press MDD. Write down the value in the display.

To determine the chassis ID follow these steps:

1. Read bits 7 and 8 as two binary digits, in that order. Interpret an on light as a 1 and an off light as a 0. Determine the chassis ID from the following table:

   00 — Chassis 1
   01 — Chassis 2
   10 — Chassis 3
   11 — Chassis 4

2. If the interrupt occurred for CARD 2, add 4 to the chassis ID from the previous step. The result is the chassis ID that was used as the chassis number in the system generation.

To determine the chassis position, do the following steps:

1. Read bit 9 according to step one of the preceding procedure. This becomes the most significant digit of the chassis position.

2. Read bits 10 through 13 as one hexadecimal digit. Refer to *Read the Front Panel* in this section for more information. This becomes the least significant digit of the chassis position.

3. Combine the previous two steps to form the chassis position of the device controller responsible for the interrupt.

Again, if several devices are sharing the position, you will need to determine by inspection which controller may be the cause of the problem.

Remove the controller and try to perform an initial program load (IPL). If the IPL hangs, try removing all the controllers sharing the same interrupt or position. You do not need to remove 911 VDT controllers if you refrain from pressing any keys. If it still hangs, you may need to repeat the process. If you can perform an IPL, one of the boards removed is the cause of the problem. See the System Generation Troubleshooting Guide in Volume V to check if there may be a generation problem. If not, the controller is developing a state where its interrupt cannot be cleared and you should call for service for the broken controller. If, in the meantime, you need other devices sharing the same interrupt or position, you will need to generate the system for the altered configuration.

8.9.32 Destroyed Files

Destroyed files are rather difficult to trace. It is usually necessary to check and eliminate the possible causes that are listed below.

- Hardware failure. This can be memory, CPU, or disk failure, but if you are not getting disk errors, it is not likely to be a disk controller problem. That requires interaction with memory addressing hardware which is a small probability. If you can, locate the bad data in the destroyed file. It will show one of four kinds of influence:

  — The data looks like it belongs in the file, but it is not quite right.

  — The data looks like it belongs in the file, but it is written in the wrong place.

  — The data looks like it belongs in other files, but it looks intact where it is, occupying a whole ADU or a part of an ADU that could be a whole physical record. Terminal communication area (TCA) records sometimes appear in data files like this.

  — The data looks completely unrelated, possibly like code in a program file or data from a program. It does not necessarily occupy a whole ADU or part of one that could reasonably be part of a physical block.

The first three indicate software is in error, possibly with LUNOs assigned to the wrong file or being used by the wrong program, or station local LUNO assignments that mask global LUNOs used by SCI. See *Check the TCA File* for more information. Improperly replacing a disk volume (changing a secondary disk volume without following the proper Unload Volume (UV)/Install Volume (IV) sequence, can cause these problems; so can changing the system disk without performing an initial program load (IPL)). The first can be a sign of hardware failure. Although such a problem might have a pattern based on disk boundaries (track, sector), it should be essentially random with respect to file boundaries. The fourth could be a sign of a hardware problem. You need to collect several instances of the problem and show essential randomness by noting that it has no preference for block or ADU boundaries and has little preference for which files are destroyed. It should also show different kinds of data written in the files. Again, it might show a pattern with respect to disk boundaries, but a hardware problem, showing up without disk errors, should not have a preference for file boundaries. See *Check for Dual Allocation* for more information.

8.9.33 Find Disk Errors Through the Programmer Panel

Use the 990 programmer panel in the case of an error on the initial program load (IPL) to determine the disk status either after the IPL attempt, or after a crash could not be successfully taken, (the crash code returned as 0 after pushing HALT then RUN). Determine the TILINE address of the disk controller that is your system disk (usually > F800). Using the information in *Read the Programmer Panel* about hexadecimal to binary conversion, the following steps yield the needed information:

1. Press HALT.
2. Press CLR.
3. Press the switches under the data LEDs (light emitting diodes) to make the panel read the correct value for the system disk TILINE address.
4. Press MA under ENTER.
5. Press MDD. Write down the value displayed. This is the Unit Status word.
6. Press MA under display.
7. Turn on lights 12, 13, and 14.
8. Press MA under ENTER.
9. Press MDD. Write down the value displayed. This is the Controller Status word.

8.9.34 IPL the System

At this point, some memory resident structures related to system operation may be damaged and an initial program load (IPL) is necessary to reinstate them. Make sure all users that can use the system complete their transactions with any applications to be sure that your data bases will not be compromised. Then perform an IPL.

8.9.35 Locate the File FDR

You can use this procedure to locate file descriptor records (FDRs) under the following two conditions:

- If you have a file contained in a directory, you can locate the FDR for that file by using the procedure listed after the next condition.
- If you cannot create a file, you need to determine where DX10 would put that file in that directory. Do this by first creating a directory of the same size as your original directory, and then create a file in it by the same name as the file you cannot create. Then apply the following procedure to the new directory you created. The FDR that you locate will be in the same record number as DX10 wants to put it in your original directory.

Use the List Logical Record (LLR) command to produce a listing of the whole directory to a disk file. Then execute the Text Editor on the listing file. Locate the correct FDR by issuing the Find String (FS) command with the string specified as the file name with a space between each pair of characters. For example, if you wanted to find the file PAYMAST, you would use FS for the string, "PA YM AS T". Use the roll down control key and see what the record number is for the record where you found the name. That is where the FDR is.

8.9.36 Log On Problems

If you cannot log on, first verify that you are using the correct key sequence. The log on sequence is described in the *DX10 Operating System Operations Guide (Volume II)*. If you find no problems with your key sequence, check to see if your terminal has log on enabled. To do so, check your terminal's status from another terminal with the List Terminal Status (LTS) command.

8.9.37 Read the Programmer Panel

The binary numbers you read most are probably from the programmer panel of your computer. The panel is divided up into 4 groups of 4 data lights each, as Figure 8-1 shows:

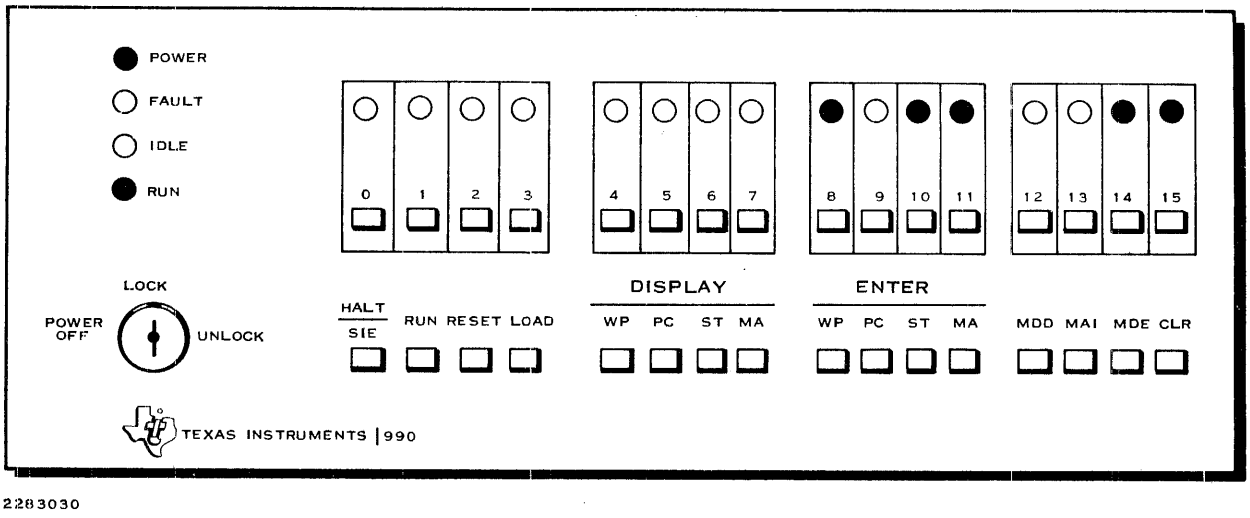

Figure 8-1. Programmer Panel of the Model 990 Computer

The lights can also be referred to as bits (binary digits), because each light represents the state of one bit in the machine, and they are numbered left to right, from 0 to 15. The numbers appear just below each light. When you read the bits on the programmer panel, each group of 4 bits is read as one hexadecimal digit from left to right. Within each group of 4 bits, read from left to right. An "on" light represents a 1 digit, and an "off" light represents a 0 digit. The table below gives each possible combination of 0 and 1 digits with the equivalent hexadecimal digit.

Binary	Hexadecimal
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7
1000	8
1001	9
1010	A
1011	B
1100	C
1101	D
1110	E
1111	F

For example, if lights 7, 13, 14, and 15 are on and the rest are off, the value is >0107 (you can write >107, omitting leading zeros). If lights 0, 1, 3, and 15 are on, the value is >D001.

8.9.38 Rebuild the Disk Volume

Copy what data you can, perform an Initialize New Volume (INV) command on the disk (or an Initialize Disk Surface (IDS) command if you are having disk problems) and copy the data back if necessary.

If the disk volume has disk errors on it, you can attempt to clear the errors by executing the Scan Disk (SD) command. If SD does not clear the errors, then you must recover the affected files from some other media. If SD does clear the errors, be aware that the data in the affected sectors may be incorrect. You might need to recover some data in the affected files from other sources.

If you cannot install the disk because of partially damaged disk structures, you can force the system to install the disk so that you can copy the data from it.

WARNING

This procedure creates an unstable situation with the bitmaps on the disk volumes involved. As long as you *do not* create or write to any files on either volume, no harm will result. After completing the procedure, perform an initial program load (IPL) on the system to ensure correct disk structures.

Locate (or create) a disk that is initialized with the same VCATALOG size and SYSTEM DISK? parameter as the one you are attempting to install, then use the following procedure:

1. Perform an Install Volume (IV) command on the good disk pack.
2. Remove the disk pack from the drive.
3. Mount the disk pack that will not install that you need data from.
4. Perform a Check and Reset Volume (CRV) command with unconditional override.
5. Copy as much data off the disk as you can. (Be sure to verify the copies.) If the files are inaccessable, see *Check the Directory Structures*. Be sure not to create any files on the disk.
6. Perform an IPL on the system to ensure correct correspondence between memory and disk structures.
7. Perform an INV command on the disk.

8.9.39 Rebuild the File

The error message and/or action that recommended this procedure indicated which file was involved. Determine the file type and use one of the procedures in the following paragraphs.

8.9.40 Rebuild the Key Indexed File

If your file has become too large for some reason, but is otherwise intact, you can copy the data with a Copy KIF Randomly (CKR) or Copy KIF to Sequential File (CKS) command. Use CKS if you wish to reload the file to optimize sequential access on one particular key (copy using that key). Otherwise, the CKR command is faster. See Volume III for information on the uses of optimizing sequential access. If your file has been damaged, you must use CKR if the data cannot be restored from backup media.

Delete and recreate the file with the new desired physical record length or other characteristic. Then perform a Modify KIF Logging (MKL) command (See Volume II) and use CSK to reload the file.

An extremely large file can be handled in segments. After using CKR or CKS, write a program to split the file up into segments that have a reasonable load time. MKL can be used repeatedly as each segment is loaded. Note that the file produced by CKR can have error conditions in it, depending on the condition of the KIF when recovery was necessary. You can prevent such an error from aborting a very long build operation by performing the build using the segments as noted earlier. Back up the file after each segment is loaded. Then, if you have an error you can correct the error in that segment, restore from backup, and reload that segment.

8.9.41 Rebuild the Program File

Depending on what is wrong with the file, you may be able to copy it, you may have to restore it from backup, or you may have to delete it and relink and/or reinstall all the tasks, procedures, and overlays. The preferred method is to delete the file, recreate it, and reinstall all the images. If you have irreplaceable images in the file, first copy them to another program file with the Copy Program Image (CPI) command.

You can recreate S$IMAGES by restoring it from backup, or by recreating it, copying a DUMMY procedure using CPI, and rerunning the system generations necessary. It is usually not effective to try to rebuild the file by copying it.

You can usually rebuild S$PROGA most easily by restoring it from backup. Only certain kinds of problems, such as flash crash 07, are amenable to repair by copying the file. To copy the file and rebuild it, be sure that the output exists in order to prevent the Copy Directory (CD) from using the fast copy, or use the Backup Directory (BD) and Restore Directory (RD) commands with the NOFAST option.

8.9.42 Rebuild the Sequential File

You should usually recreate a sequential file that has suffered data loss by reexecuting the application that produced the file, or restoring the file from backup. Data loss is usually indicated when you receive a > D5 error. You can copy all the data up to the error to another file by using the Copy/Concatenate (CC) command. All data past the error is probably from a previous generation.

8.9.43 Rebuild the TCALIB File

For a system with more than one disk, perform an initial program load (IPL) from a backup disk, and install your system disk as a secondary volume. Delete the S$TCALIB file on the secondary disk. Perform an IPL on the system disk, and reinstall the user IDs.

On a single disk system, make sure all users are logged off except you, and then release LUNO 3. Delete the file .S$TCALIB, and perform an IPL on the system. Then reinstall the user IDs.

In either of the two previous cases, you can preserve the user IDs that are currently installed. Typically you need to make the file smaller. The reason it gets big is because someone assigns a user ID like JOE999, which extends the file so that it includes record 999.

Issue a Create Relative Record File (CFREL) command to create a file just like the TCALIB file in record lengths; but specify it as nonexpandable and give it an initial allocation just large enough to hold all the user IDs you want to preserve. (The user IDs occupy the record in the TCALIB file specified by the digits on the right of each user ID.) Make sure all the users except you are logged off and perform a CC command from .S$TCALIB to the file you just created. Then proceed as above. After the IPL, use the CC command to copy the user IDs back.

8.9.44 Resize the Crash File

On a multiple disk system, perform an initial program load (IPL) from a backup disk, and install the system disk as a secondary volume. Then execute a Create System Files (CSF) command on the secondary volume, and perform an IPL.

For a single disk system, save the data from your current pack and build the disk from shipped media, which will allow you to respecify the size of the crash file.

8.9.45 Recover Disk Data

Copy what you can from the disk. Run the Scan Disk (SD) command. Copy the files with errors. Carefully note which files they are, and rebuild them if possible. Perform an Initialize Disk Surface (IDS) command on the pack. See *Rebuild the Disk Volume*.

8.9.46 Recover Tape Data

Tape data that cannot be read because of a > 45 error is not usually recoverable. It is possible for you to read the data on the tape past the error, but you need to know what data was in the record with the error so you can rebuild it from other sources or reconstruct what can be read from the tape. The basic idea is the same no matter what was used to produce the tape: copy the tape with a program that will ignore the error (you will want it to log the number of each record that has an error) to a disk file or another tape. If you copied it to a disk file, you can then copy the *filtered* data back to tape if you desire.

8.9.47 ROM Loader Errors

The ROM loader detected an error. On computers of the DS990 family, two ROM loaders are in wide use. Both loaders are described here. Either loader leaves all the panel lights on while it is waiting for the disk to come online. If you know the disk is a good system disk, an incomplete disk operation could be preventing the proper loading of the system.

8.9.47.1 New ROM Loader. This loader flashes the fault light and puts a code on the programmer panel lights when it detects an error condition. If the panel reads > D001, the disk does not contain a usable track 1 loader. See the paragraph titled *Check for Improper INV* in this section of the manual. Otherwise, the panel display is either the unit status or the controller status for a disk error. If the display in the programmer panel lights shows bits 0 through 3 off, the display contains the controller status. If one or more of 0 through 3 are on and 8 thru 15 are all off, the display contains the unit status. See *Check for Disk Problems* in this section of the manual. Also see the *ROM Loader User's Guide.*

8.9.47.2 Old ROM Loader. This loader does not flash the fault light. If it detects a disk error, it puts a > D002 in the panel lights. If all the lights stay on and you cannot perform an initial program load (IPL) when the disk comes online, see *Check for Improper INV*.

8.9.48 Static Problems

Static can do many of the things that *dirty* power can do, most typically causing disks and printers to drop offline or terminals to act strangely or to lock up. To correct the problem, reduce static by using anti-static sprays, install a humidifier, or use any means at your disposal. High-power electric and/or electronic equipment such as elevator motors, arc welders, and certain types of radar can cause related problems. Even though such equipment is not wired to the same power line in the building as your computer equipment (if it is, your equipment is incorrectly installed) the computer's power line may run next to the power line for such equipment, and the currents induced in power wires or energy directly transmitted to the computer electronics (radar) can cause system failure. You may have to reroute power and ground wires or shield them, or shield your computer room if such problems exist. To confirm that this is your problem, log each event of your computer failure and check the time with major events in surrounding equipment.

8.10 CASE STUDIES

The following paragraphs describe case studies that can possibly aid your troubleshooting efforts. Although they describe specific situations, the means to correct the various problems are stated in general terms that can be applied to more than one situation.

8.10.1 Hardware Cases

Case studies of problems caused by hardware failure are presented here. If you are trying to isolate a hardware problem, these cases will help you understand *essential randomness* as applied to intermittent problems, and will help you understand *hard* errors as applied to hardware problems.

8.10.1.1 The Case of the Jittery Verify Backup.

Initial Symptoms. The Verify Backup (VB) command sometimes failed during the verification of a backup to magnetic tape. There were no tape errors, but some files would not verify. The backup operation appeared to be successful.

Investigation. It was not always the same file that would not verify. The problem occurred if the tape was new, near new, or used. The same tape was successfully used on another system. The Restore Directory and Verify Copy commands showed that the same files that did not verify on tape did not restore correctly either. The files that did not verify on tape appeared in various places on the tape. The same backup and verify operation was repeated, and it worked most of the time. In fact, only about 1 out of 6 backups failed. The recovery from a backup that failed was to repeat the operation, and most of the time the second attempt was successful, using the same tape and the same files. DOCS990 did not show any problems with the tape drive or controller.

Analysis. Essential randomness is indicated by the fact that the backup sometimes failed and sometimes succeeded. The fact that the same tape was used successfully on a second attempt at backup eliminates the media from consideration as a problem. The fact that the problem appeared for different files, even when the same directory was backed up a second time eliminates software, because a software failure would have to happen on the same files and in the same places. The hardware did not care which file it wrote incorrectly. There is enough information here to indicate that the write operation is the problem.

Resolution. The problem disappeared when the tape controller was replaced. The same symptoms could have been caused by a drive problem, in which case replacing the controller would not have changed the symptoms. Since DOCS990 did not show a problem, the differences in environment between DOCS990 and backup directory explain why DOCS990 did not show a problem. The environment induced by backup directory—long blocks, the whole tape, random data—is substantially different from that induced by the DOCS990 magnetic tape test.

8.10.1.2 The Case of the Ubiquitous Disk Errors.

Initial Symptoms. The system crashed and the user could not perform an initial program load (IPL).

Investigation. The system had two DS50 drives, so the user installed a backup pack on the secondary drive, and performed an IPL successfully from there. A Show Absolute Disk (SAD) command on track 0, sector 0 on the pack that failed the IPL showed a > 15 error. An SAD command on track 1, sector 36 also showed a > 15 error. This indicated that a Recover Disk (RCD) command would not be successful. An SAD command on several legal tracks on the disk all showed > 15 errors. The user obtained a good sample by being sure to address all 5 heads on a variety of cylinders. All showed > 15 errors.

Analysis. This problem clearly indicates disk failure. There is no way for standard operating software to induce disk errors, and if there were something wrong with the pack, most of the pack should have been readable—as it was, up to the time of the crash.

Resolution. Replacing the disk controller fixed the problem. The problem could have been the drive, but Field Service was able to isolate the problem quickly. This is an example of a "hard" error.

8.10.1.3 The Case of the Locking Terminals.

Initial Symptoms. Terminals ceased to respond to users at arbitrary intervals.

Investigation. The terminals were all 911s, and most controller boards had two terminals attached. Most terminals were in an expansion chassis. The terminals nearly always locked up in pairs, and the pair was almost always attached to a controller board. Different pairs locked up at different times. Sometimes more than one pair locked up at the same time. The terminals installed in the main chassis did not lock up. Changing terminal controllers did not change the symptoms. To restore the terminals to operation, an IPL was necessary.

Analysis. The different controllers locking up at different times virtually eliminated the controllers themselves as the problem. One controller might behave this way, but the odds are astronomical that several would fail in exactly the same way. Also, the fact that sometimes only one terminal would lock up and sometimes more than one pair would lock up indicated that the VDT controllers were not at fault. Changing controllers did not change the symptoms, and this confirms the conclusion. The terminals that did not lock up could still operate, which almost eliminates the software as a factor. The device service routine (DSR) is shared, which means that the only software source of the problem could be the system data structure (the physical device table, or PDT). Since the symptom did not prefer any particular terminal, there was no reason to suspect software. The problem had to be hardware.

Resolution. Replacing the SMI board (this was a 990/10) fixed the problem. The problem could also have been in the CRU expansion connection from the symptoms described above.

8.10.1.4 The Case of the Strange Compile Errors.

Initial Symptoms. Large COBOL programs showed compile errors after a text edit. Many statements had an exclamation point (!) character at the end which should not have been there. The user executed another text edit to fix the errors, but the same errors reappeared. Some errors showed up in the same places, but others showed up in new places. Some of the places where the user deleted the "!" compiled properly. Other character errors were noticed, and always the character that should have been in the program was transformed to the next character up in the ASCII character codes. In addition to COBOL compile errors, some programs written in assembler language had checksum errors when the user attempted a link edit. Reassembling the same program into the same object file sometimes fixed the problem and sometimes did not. Other users of the system noticed problems with files also, and all such problems were on the secondary disk volume, a DS200.

Investigation. Two facts strongly indicate essential randomness: First, the errors went away in some places and showed up in new places, and sometimes they happened on the assembly and sometimes not. Second, the character transformations always indicated that bit 7 of a byte was a one when it should have been a zero. Therefore, initial efforts were directed toward hardware. The user located the physical block in which he noticed errors. By using the file allocation data in the file descriptor record (FDR), the relationship of the error to the sectors of the disk was determined. It was always byte >9F of a sector. Further work showed that it was not always the first sector of a physical block.

Resolution. Replacing the disk controller fixed the problem. The byte in error was always >9F, and bit 7 was always turned on. This was the constant part of the hardware. The variable part that established essential randomness was the fact that sectors acquired errors randomly. The fact that the problem occurred outside a COBOL program reinforced the determination to investigate for hardware. If the problem had occurred only in COBOL, that fact would not have been significant because of the random nature of the error addresses. If only COBOL programmers were working with the particular disk, only COBOL errors would have occurred, but that would not be because of a problem in the COBOL compiler. The COBOL programmer involved in this case did notice that errors tended to prefer certain places in the program. The fact that some errors would go away and others show up was sufficient to establish randomness. Some preferences were explained by the files being stored in blank suppressed form, and any source line with an odd number of characters was physically stored with one blank accompanying the last data character. Not all errors were in the first sector of a block, and this was sufficient to eliminate software as a possible cause. The controller's preference for >9F further restricted the locations that were candidates for failure. With these constraints, the only way of investigating for disk failure was to get to the track and sector level. It might have been necessary to get to cylinder and head level to show that a consistent problem appeared in random places.

8.10.1.5 The Case of the Short 940 Screen.

Initial Symptoms. A user attempted to log on to a 940 terminal, and all lines appeared in the top line of the screen with each succeeding line written over the previous line.

Investigation. When the user attempted to Copy/Concatenate (CC) a short file to the 940, all the lines appeared at the top of the screen, instead of scrolling up from the bottom as they normally would.

Analysis. The problem is most likely hardware, in the 940 terminal itself. For the problem to be software, SCI would have to have a failure that causes it to write all lines to row 0 of the screen, or the 940 device service routine (DSR) would have to have a similar problem. Since log-on is known to work to 911 terminals, SCI is eliminated. Since it is reasonable to believe that the 940 DSR does not have such a flaw in it, the primary suspect is hardware.

Resolution. The 940 was at fault. It was fixed and placed in successful operation.

8.10.1.6 The Case of the Tired System.

Initial Symptoms. The system ran fine during the morning and into the afternoon, but towards the end of the day it begin to show more and more disk errors.

Investigation. The temperature of the computer room was high—very close to, and sometimes exceeding the specification for operation of the equipment. The user was in the habit of turning the system off each night and bringing it up again in the morning. The room was cool in the morning, but as the day passed it got warmer.

Analysis. The most likely cause is hardware failure due to the operating temperature being too high. It is possible for high operating temperatures to cause disk errors as well as other failures.

Resolution. The user increased the air conditioning capacity to the computer room, and the problem disappeared.

8.10.2 Software Cases

Case studies of problems that system or application software design flaws caused are presented here. If you are trying to isolate a software problem, these cases will help you understand *essential coincidence* and how it applies to isolating a problem to software. They will also show that causes of failure can be very simple yet produce rather bizarre symptoms.

8.10.2.1 The Case of the Hanging KIF.

Initial Symptoms. The user performed a Show File (SF) command on a key indexed file (KIF), followed by a +9999 command to go to the end of the file, followed in turn by using the F2 key to scroll back a page, the system immediately went into a loop with CPU usage at 100 percent and all terminals locked out. All printing ceased as soon as the printer buffers were empty, and other applications immediately ceased operation.

Investigation. The same problem happened on any KIF on the system, provided the user went far enough to go to the last record in the KIF.

Analysis. The problem was definitely a system software problem. The fact that it happened on any KIF by a well-known sequence of operations establishes essential coincidence. Since the user used only standard DX10 utilities to produce the problem, application software is eliminated as a possible cause of the problem. There were no disk errors involved coincident with the SF so there was no reason to suspect hardware.

Resolution. The user called for software help.

8.10.2.2 The Case of Two Birds with One Stone.

Initial Symptoms. A user tested an application with 940 terminals. Since the 940s would be on dial-up lines, the primary objective of the testing was to check that the system would correctly terminate all active tasks related to a terminal if that terminal's line were disconnected. When the user unplugged the cable connecting the 940 to the computer, all other tasks sharing the same COBOL run-time procedure behaved very strangely, and the terminals locked up. When the user plugged the cable back in, the task that was running at the terminal was still there, and could be terminated with normal operator control.

Investigation. Since unplugging a cable creates an error code returned in the I/O SVC call block, the program issuing the SVC is responsible for responding to it. In this case, the COBOL 3.3 program was not coded to handle errors on an ACCEPT statement (a statement that issues a read SVC at the terminal). An inspection of the system log showed a plethora of error messages for the terminal involved, all indicating that the line was disconnected. The user had to perform an IPL in order to get the locked terminals back in operation.

Analysis. The problem was most likely the COBOL run time software. Since the program did not terminate when the user unplugged the cable, it indicates that the run time was handling the error internally. The log full of error >0A messages indicates that the run time was indiscriminately retrying the operation. At this point, the user pursued a solution to the retry problem on the chance that it would clear the terminals that were locked up as well. The only software cause for such strange behavior only in tasks attached to the same procedure is erroneous code overwriting the procedure itself. Any other cause would have required a fault in system software or hardware that should have manifested itself in other ways as well.

Resolution. The COBOL run time was supposed to terminate on device errors. The user obtained a patch to fix that problem, and it fixed the lockup problem as well. The nature of the bug indicated that it might have caused the run time to be written into, therefore the best procedure was to apply the patch without further investigation of the lockup problem.

8.10.2.3 The Case of the Strange I/O.

Initial Symptoms. The system ran normally, until at apparently random intervals one of the applications stopped operating or terminated with an I/O error indicating that a LUNO it was using was closed or released.

Investigation. The user produced the condition where the application stopped operating. Using another terminal, the ANALZ utility was used to search the physical device table (PDT) chain for the I/O operation that the task was waiting for. When it was located, the user went to that terminal, typed return, and the application started running again. However, it did not seem to be operating properly. The program was written in COBOL, and to suspect that the system or COBOL had such problems contradicted the experience of other users of DX10. A search was made for assembly language subroutines called from the COBOL program, and several were found.

Analysis. Inspection of the code revealed that some changes had recently been made to one of these subroutines, and in particular, a relative record file had been changed to a key indexed file. However, the call block used to do I/O to the file had not been changed to reflect the currency block required by a key indexed file. The currency block was overwriting another I/O call block, causing the LUNO field to be changed. Thus, the program was hanging up on I/O to another LUNO from the one intended, or tried I/O to an undefined LUNO.

Resolution. The assembly language routine was fixed.

8.10.2.4 The Case of the Vanishing Data.

Initial Symptoms. Under DX10 3.3, a particular file could be inspected while it was being written, and a Map Disk (MD) of the file showed the current count of records in the file. Under DX10 3.4, this was no longer true. The MD command showed zero records in the file.

Investigation. Since the behavior described for 3.3 was exactly that expected of a forced write file, the user checked the file flags with a MD long form. The file was found to be nonforced write. Under DX10 3.3, it was forced write.

Analysis. The fact that the file is not forced write under DX10 3.4 and it was under 3.3 explains the difference.

Resolution. The file was made forced write under DX10 3.4.

8.10.2.5 The Case of the Alternating Crashes.

Initial Symptoms. When the system was powered down and powered back up (it was a 990/10), an attempt to perform an IPL from a newly built system disk failed. All the programmer panel lights remained lighted. If an IPL was attempted from another disk first, followed by the new disk, the system crashed on the IPL attempt with a >20 crash code. If an IPL was performed from a different disk, and then followed by the new disk, the system crashed with a >83 crash code.

Investigation. The system always failed with all lights illuminated when the system was powered down and then powered up. The different system disks used for the IPL prior to the new disk also behaved consistently. If one was used for the IPL, it always got an >20 crash, and the other always got a >83 crash.

Analysis. The problem is most likely connected with the new system disk. The fact that the IPL with two other disks was successful, and both times the system would run, virtually eliminates hardware and system software as causes. An inspection of track 1, sector 0 revealed that the disk had not been initialized as a system disk. The new firmware (ROM) loader sent with 990 systems detects if a disk does not have a track 1 loader, but some older ROMs do not. When the system was freshly power cycled, there was no code left in memory that could handle the data lights after the ROM loader turned them all on. When the ROM loader transferred control to the nonexistent loader it thought it loaded, the lights stayed on. If there were parts of a previously loaded DX10 system in memory, it took whatever crash code happened from the parts left over.

Resolution. The disk was reinitialized as a system disk.

8.10.2.6 The Case of the Mysterious Task Errors 2.

Initial Symptoms. A set of COBOL tasks running in a multi-user environment would terminate with task error 2 in intervals varying from a few hours to several days. When a task terminated for one user, all other COBOL tasks with the same copy of the runtime would terminate, giving task errors.

Investigation. Inspection of the system log revealed that when the task errors occurred for a given session, they all happened at the same PC value. The system would run without problems for a considerable time period once an IPL had been performed or once all COBOL tasks had terminated (thereby loading a new COBOL runtime). The next set of errors would then occur at a different PC value (as determined from the task error messages in the system log). All but one or two of the tasks terminated with the same task error code. The system did not crash and no disk errors occurred. No DX10 utilities were affected and backups were performed on schedule using the utilities without encountering any errors. File structures appeared unaffected since no DX10 I/O SVC errors occurred indicating such a problem.

The program structure included the COBOL runtime linked to procedure 1, a shared procedure containing user routines in procedure 2, and various tasks attached to the two procedures. Procedure 2 included some assembly language routines. The user occasionally noticed that reports contained incorrect data and that file data occasionally had invalid tags. The invalid tags occurred in files without structural problems.

Analysis. The symptoms indicate that a piece of nonreentrant code is linked with a shared procedure. Procedure 2 consists of shared code, and contains assembly language. Possibly sections of procedure 2 are coded such that parts of its volatile data areas, including its workspace, are not isolated from machine instructions with DSEG directives. Such isolation is required to provide a separate copy of the data for each task. Without the isolation, two tasks can access an area of data simultaneously. Time slicing can then allow a task to access memory addresses previously used by another task, resulting in data storage anywhere in the task's address space. This includes memory in procedures that should not be modified. See Volume III for information on reentrant coding.

The user inspected all code linked to procedure 2. In this case, procedure 1 required no inspection since it contained only the COBOL runtime. Since no reentrancy problem exists for code linked into the task section of the programs, this code was also not inspected. Procedure 2 was shared, however, making any non-reentrant routine linked to it capable of causing the problem. Nonreentrant coding is relatively easy with assembly language, so those routines are the primary suspects. Had routines other than the COBOL runtime been linked into procedure 1, they would also have been suspect.

This problem does not produce only task errors number 2; task error numbers 4, 5, and 6 are also possible. The system log can show task errors occurring at different PC value locations, although most should have the same PC value. Typically, a task terminating at a different PC value is the first task to terminate. It usually has a different task error also. A key to watch for is that once a shared procedure is affected, all (or most) of the tasks associated with it terminate with task errors. After reloading the shared procedures or performing an IPL, all tasks run until the next instance of the problem.

This problem can be very dependent on the system load and mode of use. Many users can access the same software with such a nonreentrant routine and have no problems, while only one or two users may encounter a problem. If the same software is installed at many sites, and only one user is having problems, hardware is usually at fault. The absence of system crashes in this case points to application software trouble.

In systems with more than one copy of the runtime in use, only the programs in one program file may be affected. (Each program file can have its own copy of shared procedures, and only tasks sharing nonreentrant code would be subject to failure.) The same principles apply to any language, such as FORTRAN or Pascal, in an application where code is shared. If a routine is nonreentrant, the shared code can be overwritten and cause similar problems with task errors. FORTRAN assembly routines should be coded to use DSEG directives, and Pascal assembly routines should be coded to use the Pascal stack, (guaranteeing reentrancy), or to use DSEG directives.

A routine that attempts to use an array outside its own bounds, (even if that routine is written in the standard language), can cause similar damage to a shared procedure. Such a reference could store data into the task's address space in a position occupied by shared code.

This problem was not caused by hardware malfunction because the system did not crash, no files had structural problems, and no problems existed in the standard utilities. Had files been structurally damaged, they would have been investigated on a case by case basis to try and establish essential randomness. If hardware was at fault, blame would have to be attached to the CPU or memory, or to the disk controller if rollin/rollout was occurring. Such a failure would be very unusual; that is, causing task errors without crashing the system. However, such a problem can exist. It would involve a part of the central processor used by the application but not by the operating system, a memory address sensitivity problem, or a disk controller that reads/writes data to disk incorrectly without reporting an error (although the last condition should also cause the system to crash).

In the absence of system crashes and structural file damage, it is worthwhile to investigate the application code for reentrancy problems. If you find no reentrancy problems, or have an application with compiler generated modules only, first suspect the disk controller, then the CPU, and finally memory.

You should carefully investigate any file structure problem for software or operational causes before blaming hardware. You may need to call for software help to resolve this type of problem.

Resolution. One routine that was linked to procedure 2 was written in assembly language, and was found to have volatile data not isolated by DSEG directives. The code was modified so that all its volatile data, including the workspace, was so isolated. The procedure and its associated tasks were then relinked to include the rewritten routine and the problem disappeared.

8.10.3 Unknown Cases

Case studies of problems that solved themselves or for which the cause could not be determined are presented here. The principal benefit of reading these studies is to understand how to deal with contradictory facts and how to handle places in the troubleshooting guide that can guide you through the same procedure over and over.

8.10.3.1 The Case of the Vanishing Flash Crash.

Initial Symptoms. After a successful DCOPY operation, the user performed an IPL on the system, and this resulted in a flash crash 9, meaning that the loader could not find the system image file.

Investigation. Either the directory structure was destroyed, or the file was not put on the disk. This was a DS10 system, so the removable cartridge was unloaded and a backup system mounted in its place. An IPL was successful, and the fixed disk was successfully installed as a secondary volume. An attempt to use SF on the S$IMAGES file resulted in a 0172 error, which indicated that the entry for S$IMAGES was intact. (The Assign LUNO processor had to successfully locate the File Descriptor Record (FDR) for S$IMAGES to report that error). At this point a contradiction existed. An attempt to perform an IPL failed because of a flash crash 9, and since the disk could be installed with IV and examined with SF, there was no reason for the IPL attempt to fail. To double check the available facts, the user attempted to perform another IPL. This last attempt was successful.

Analysis. The cause of the problem is unknown, but is probably rooted in a hardware failure of some sort. The system continued to be operational, so whatever the cause, it was very intermittent. Any number of very unlikely occurrences could have been responsible.

8.10.3.2 The Case of the Disappearing > 20 Crash.

Initial Symptoms. A 990 system with an add-on WD800 disk unit was being run under the DX10 3.5.0 release. Whenever a copy was performed involving the cartridge tape unit of the WD800, the system would crash with a crash code of > 20. While the system was run under the DX10 3.4.3 release, no problems occurred on copies involving the WD800 cartridge unit. Similarly, when DX10 release 3.5.1 was installed, the > 20 crashes also ceased.

Investigation. An XANAL of the crash dump revealed that the crash occurred in the tape drive DSR's patch area, and was due to the execution of an illegal instruction. A dump of the memory in the area of the failure showed that the memory in which execution was attempted contained only zeroes. Since the problem occurred in the patch area, needed patches were searched for. Inspection of the system image with the SPI command showed that all patches had been correctly applied.

Analysis. A contradiction exists in the available evidence. Possibly the SPI commands were applied to a different system image than the one used to operate the computer, although this was never verified. According to the data gathered from XANAL, the most likely cause of the problem was an incorrectly applied patch and not the hardware. (Since DX10 release 3.4.3 operated correctly, the software becomes a prime suspect.) Before the user sent a crash dump to Texas Instruments, he installed DX10 release 3.5.1, and the problem disappeared. Still, the problem was not likely to be related to a specific release of the operating system. Probably the process of repeating the XGEN, ALGS, and PGS commands re-installed the patches correctly. When the new DX10 release was installed, the user probably took extra precautions to verify that the system was correctly selected, and thereby ensured that a correctly patched system was being used.

Appendix A

Keycap Cross-Reference

Generic keycap names that apply to all terminals are used for keys on keyboards throughout this manual. This appendix contains specific keyboard information to help you identify individual keys on any supported terminal. For instance, every terminal has an Attention key, but not all Attention keys look alike or have the same position on the keyboard. You can use the terminal information in this appendix to find the Attention key on any terminal.

The terminals supported are the 931 VDT, 911 VDT, 915 VDT, 940 EVT, the Business System terminal, and hard-copy terminals (including teleprinter devices). The 820 KSR has been used as a typical hard-copy terminal. The 915 VDT keyboard information is the same as that for the 911 VDT except where noted in the tables.

Appendix A contains three tables and keyboard drawings of the supported terminals.

Table A-1 lists the generic keycap names alphabetically and provides illustrations of the corresponding keycaps on each of the currently supported keyboards. When you need to press two keys to obtain a function, both keys are shown in the table. For example, on the 940 EVT the Attention key function is activated by pressing and holding down the Shift key while pressing the key labeled PREV FORM NEXT. Table A-1 shows the generic keycap name as Attention, and a corresponding illustration shows a key labeled SHIFT above a key named PREV FORM NEXT.

Function keys, such as F1, F2, and so on, are considered to be already generic and do not need further definition. However, a function key becomes generic when it does not appear on a certain keyboard but has an alternate key sequence. For that reason, the function keys are included in the table.

Multiple key sequences and simultaneous keystrokes can also be described in generic keycap names that are applicable to all terminals. For example, you use a multiple key sequence and simultaneous keystrokes with the log-on function. You log on by *pressing the Attention key, then holding down the Shift key while you press the exclamation (!) key.* The same information in a table appears as *Attention/(Shift)!*.

Table A-2 shows some frequently used multiple key sequences.

Table A-3 lists the generic names for 911 keycap designations used in previous manuals. You can use this table to translate existing documentation into generic keycap documentation.

Figures A-1 through A-5 show diagrams of the 911 VDT, 915 VDT, 940 EVT, 931 VDT, and Business System terminal, respectively. Figure A-6 shows a diagram of the 820 KSR.

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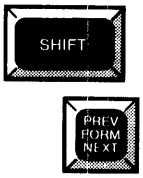
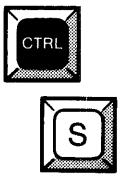
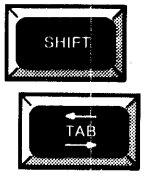
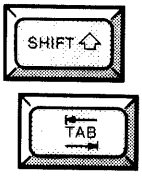
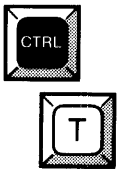
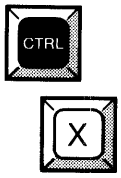
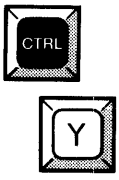
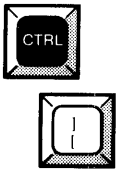
Table A-1. Generic Keycap Names

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
Alternate Mode	None				None
Attention[2]					
Back Tab	None			None	
Command[2]					
Control					
Delete Character					None
Enter					
Erase Field					

Notes:

[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

[2]On a 915 VDT the Command Key has the label F9 and the Attention Key has the label F10.

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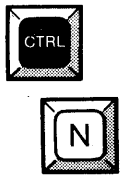
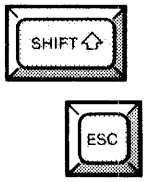
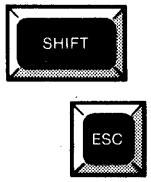
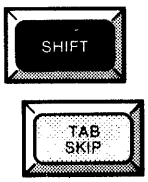
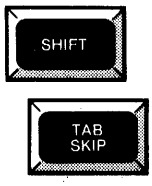
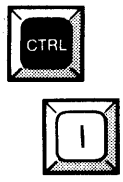
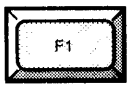
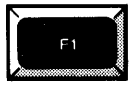
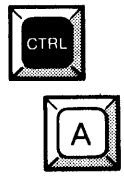
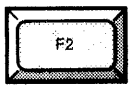
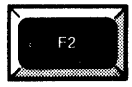
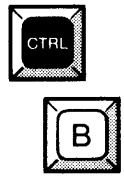
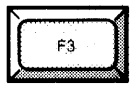
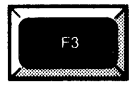
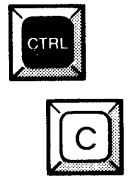
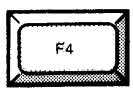
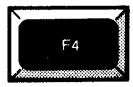
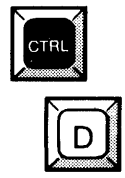
Table A-1. Generic Keycap Names (Continued)

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
Erase Input					
Exit					
Forward Tab					
F1					
F2					
F3					
F4					

Notes:

[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

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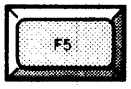
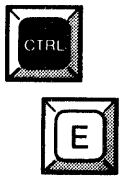
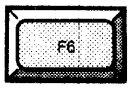
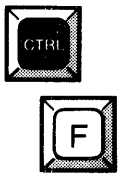
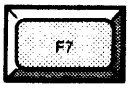
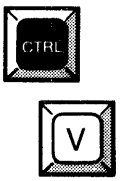
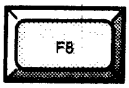
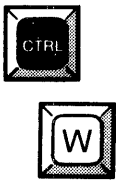
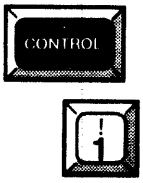
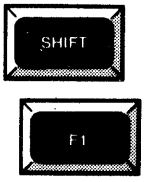
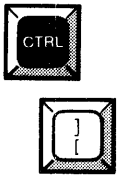
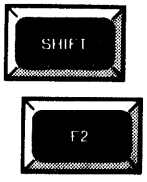
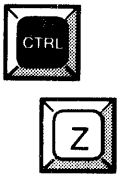
Table A-1. Generic Keycap Names (Continued)

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
F5					
F6					
F7					
F8					
F9					
F10					

Notes:

[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

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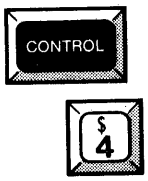
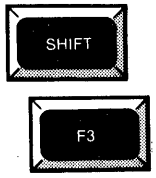
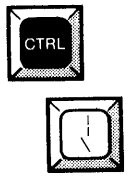
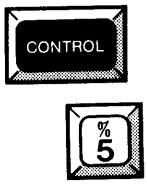
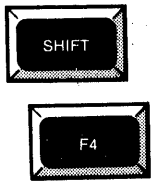
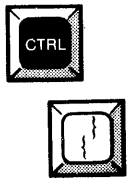
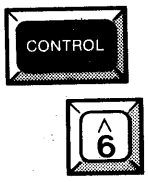
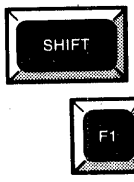
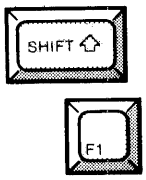
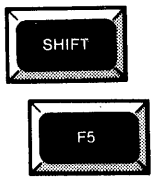
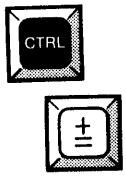
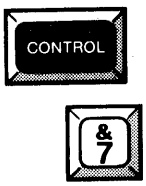
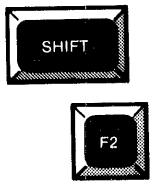
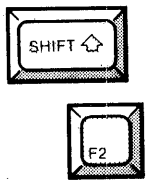
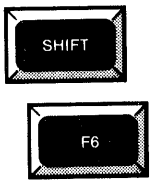
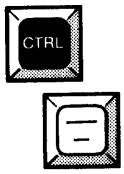
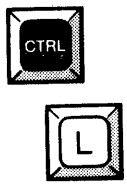
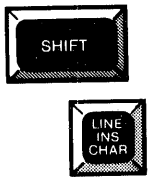
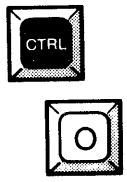
Table A-1. Generic Keycap Names (Continued)

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
F11					
F12					
F13					
F14					
Home					
Initialize Input					

Notes:

[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

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Table A-1. Generic Keycap Names (Continued)

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
Insert Character					None
Next Character	or				None
Next Field					None
Next Line					or
Previous Character	or				None
Previous Field					None

Notes:
[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

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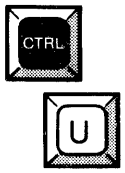
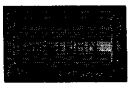
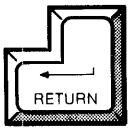
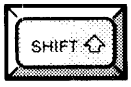
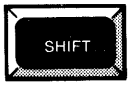
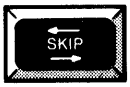
Table A-1. Generic Keycap Names (Continued)

Generic Name	911 VDT	940 EVT	931 VDT	Business System Terminal	820[1] KSR
Previous Line					
Print					None
Repeat		See Note 3	See Note 3	See Note 3	None
Return					
Shift					
Skip					None
Uppercase Lock					

Notes:

[1]The 820 KSR terminal has been used as a typical hard-copy terminal with the TPD Device Service Routine (DSR). Keys on other TPD devices may be missing or have different functions.

[3]The keyboard is typamatic, and no repeat key is needed.

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Table A-2. Frequently Used Key Sequences

Function	Key Sequence
Log-on	Attention/(Shift)!
Hard-break	Attention/(Control)x
Hold	Attention
Resume	Any key

Table A-3. 911 Keycap Name Equivalents

911 Phrase	Generic Name
Blank gray	Initialize Input
Blank orange	Attention
Down arrow	Next Line
Escape	Exit
Left arrow	Previous Character
Right arrow	Next Character
Up arrow	Previous Line

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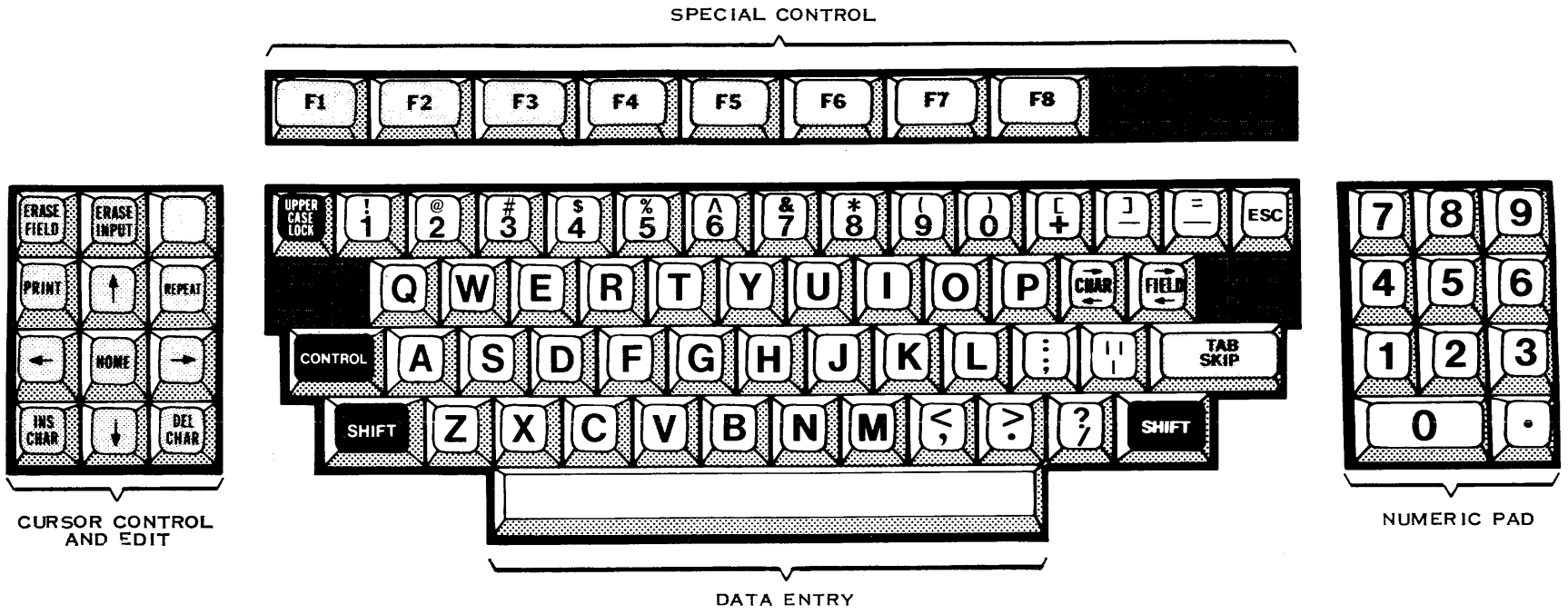

Figure A-1. 911 VDT Standard Keyboard Layout

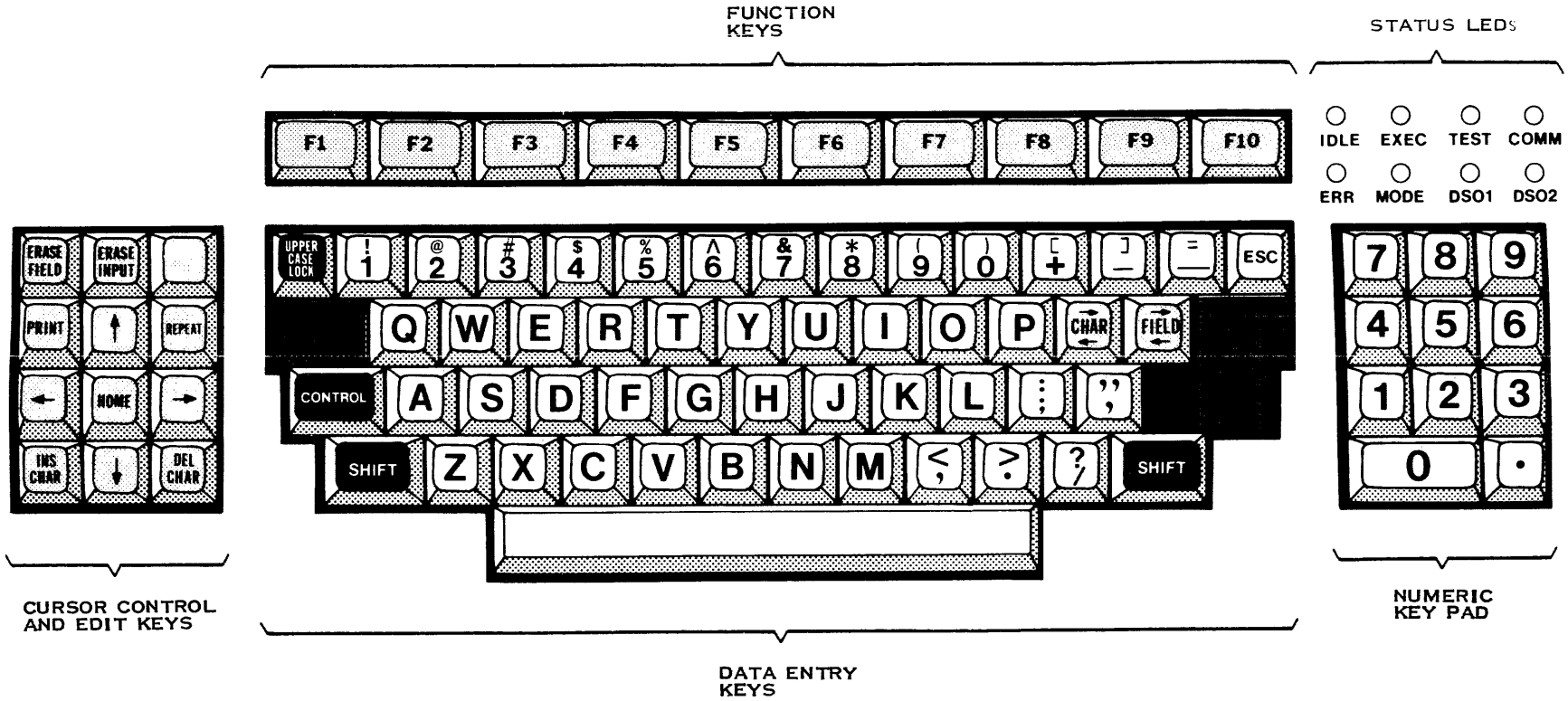

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Figure A-2. 915 VDT Standard Keyboard Layout

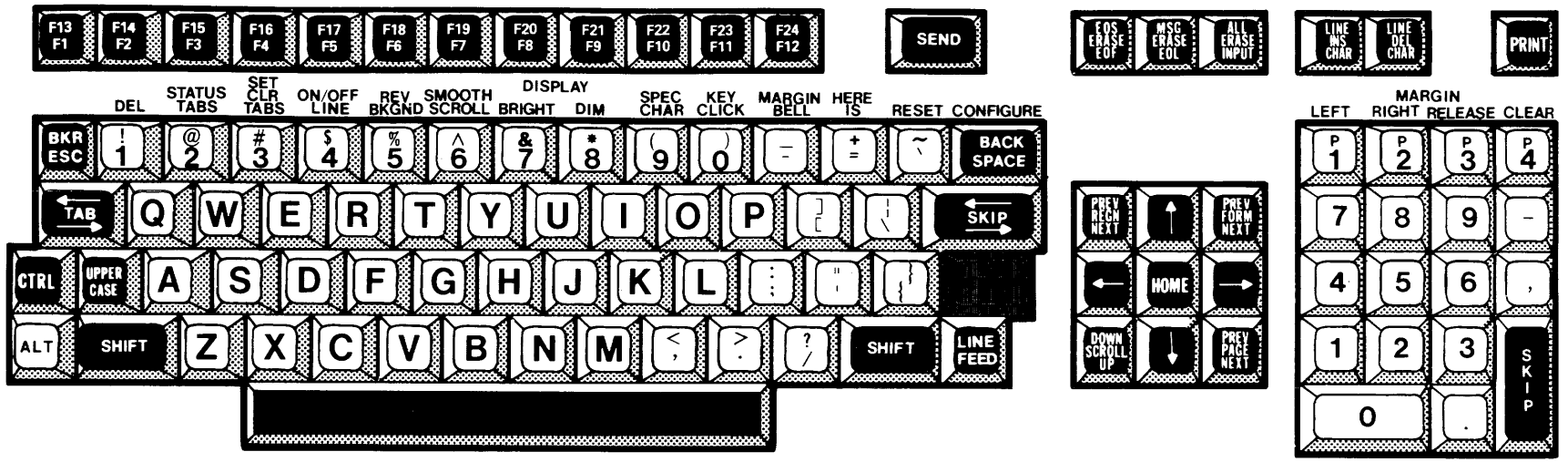

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Figure A-3. 940 EVT Standard Keyboard Layout

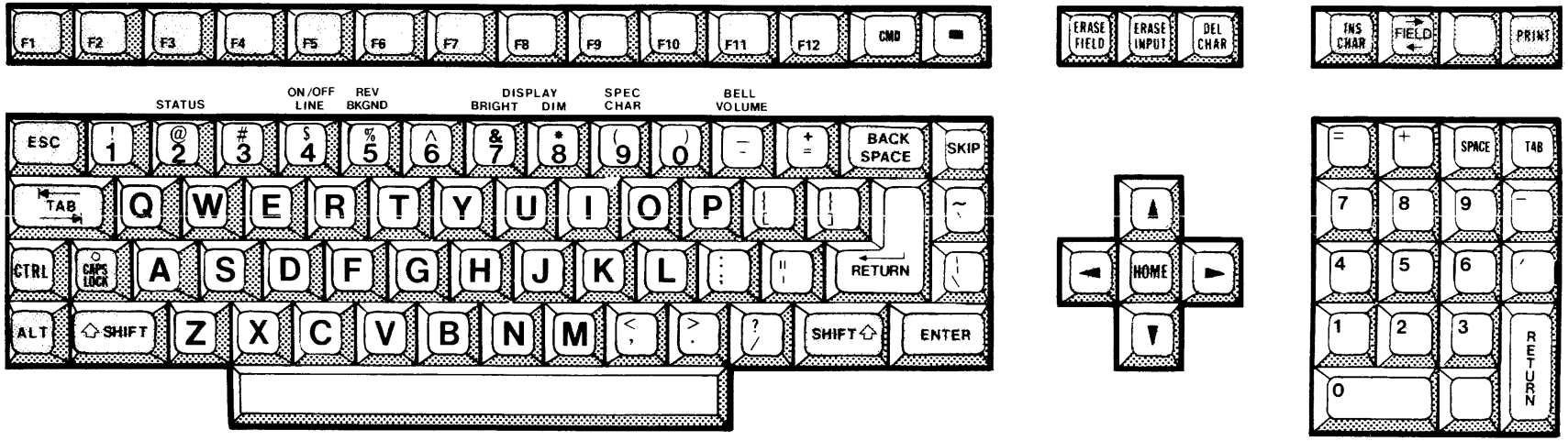

Figure A-4. 931 VDT Standard Keyboard Layout

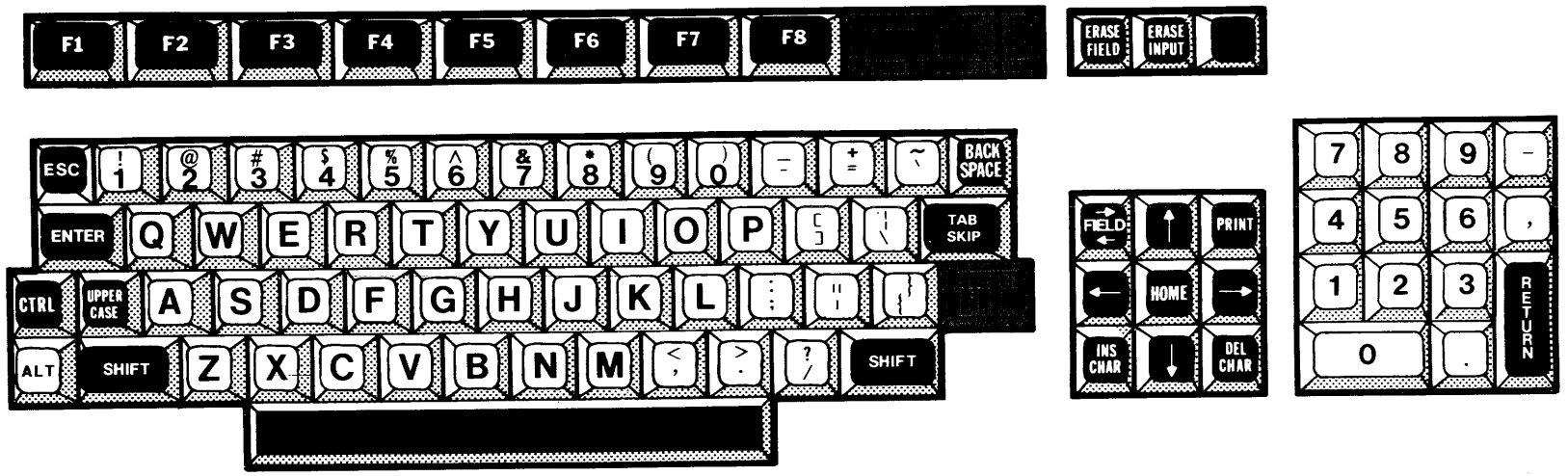

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Figure A-5. Business System Terminal Standard Keyboard Layout

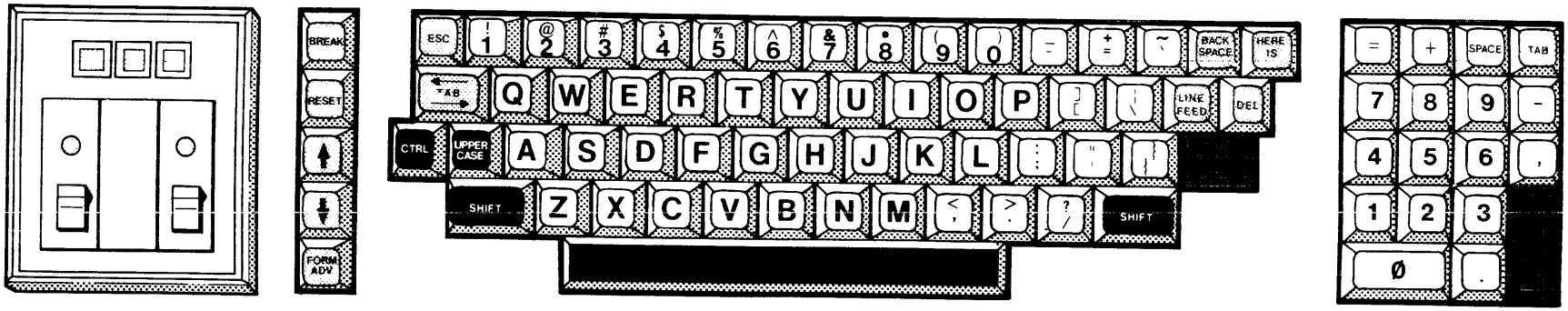

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Figure A-6. 820 KSR Standard Keyboard Layout

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The index, table of contents, list of illustrations, and list of tables are used in conjunction to obtain the location of the desired subject. Once the subject or topic has been located in the index, use the appropriate paragraph number, figure number, or table number to obtain the corresponding page number from the table of contents, list of illustrations, or list of tables.

INDEX ENTRIES

The following index lists key words and concepts from the subject material of the manual together with the area(s) in the manual that supply major coverage of the listed concept. The numbers along the right side of the listing reference the following manual areas:

- Sections — Reference to Sections of the manual appear as "Sections x" with the symbol x representing any numeric quantity.

- Appendixes — Reference to Appendixes of the manual appear as "Appendix y" with the symbol y representing any capital letter.

- Paragraphs — Reference to paragraphs of the manual appear as a series of alphanumeric or numeric characters punctuated with decimal points. Only the first character of the string may be a letter; all subsequent characters are numbers. The first character refers to the section or appendix of the manual in which the paragraph may be found.

- Tables — References to tables in the manual are represented by the capital letter T followed immediately by another alphanumeric character (representing the section or appendix of the manual containing the table). The second character is followed by a dash (-) and a number.

  Tx-yy

- Figures — References to figures in the manual are represented by the capital letter F followed immediately by another alphanumeric character (representing the section or appendix of the manual containing the figure). The second character is followed by a dash (-) and a number.

  Fx-yy

- Other entries in the Index — References to other entries in the index preceded by the word "See" followed by the referenced entry.

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CUT ALONG LINE

USER'S RESPONSE SHEET

Manual Title: DX10 Operating System Error Reporting and Recovery Manual, Volume VI (946250-9706)

Manual Date: January 1985 **Date of This Letter:** _____

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Company: _____ **Office/Department:** _____

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City/State/Zip Code: _____

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