STCPOST Program For Online Subsystem Testing

Reference Manual

FE-001-4 Version 3.0

Storage Technology Corporation

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SUMMARY OF CHANGES

FE-001-4, August 1984, is a new edition that describes STCPOST Version 3.0A.

Differences between Version 2.0A and Version 3.0A are:

- New devices
  - 3380 type devices in the VOLSCAN, WRTREAD, TRKDUMP and WRDISK functions.
  - 4305 in 3380 mode in the DIAGNOSTIC, FORMAT, VOLSCAN, WRDISK, and WRTREAD functions.
  - 6100 Laser Printer in the DIAGNOSTIC function.
- New functions
  - The DEFINE function accesses offline devices.
  - The DISPLAY function displays the data in the SYS1.LOGREC dataset.
- Changed functions
  - The BLKSIZE parameter has been added to WRTAPE. This parameter allows the size of the data blocks written to be specified. The ELIMIT parameter has been added to the VOLSCAN function.
  - The FORMAT function will write a volume label and VTOC for 4305s in either 2305-2 or 3380 mode.
  - Support for DDTYPEs 0 and 1 has been added to DOS/VSE support if VSE/AF is installed.
- Installation changes
  - The OS I/O appendages have been eliminated.
  - The method for permanently changing STCPOST execution parameters has changed.
  - The Control Card Editor supports the default control card sets under DOS/VSE.
  - Two new OS JCL Procedures have been added. The STCPOSTD procedure is used when executing the DISPLAY

function. The STCPOSTO procedure is used when executing the DEFINE function to access offline devices.

- The messages and codes have been moved to STCPOST MESSAGES AND CODES FE-012.

This edition contains information about features of STCPOST that are not yet available for general use. The following information should be used for planning purposes only:

- All information about remote operation of STCPOST, including the STCPOST REMOTE function.
- All information about FBA DASD, including 3370 devices.

PREFACE

SCOPE

This manual contains the instructions needed for the customer system programmer to install STCPOST on OS/VS and DOS/VSE operating systems. STCPOST operating instructions, including OS/VS and DOS/VSE Job Control Language (JCL), for STCPOST functions are provided. The STCPOST Control Card Editor is described, and operating instructions for the editor are provided.

Message descriptions for these functions are found in STCPOST MESSAGES AND CODES FE-012.

The STCPOST Stand-Alone Executive (SAE) is described in the STCPOST STAND-ALONE EXECUTIVE REFERENCE MANUAL FE-010.

The STCPOST FRIEND function is described in the STCPOST FRIEND FUNCTION REFERENCE MANUAL FE-013.

RELATED DOCUMENTATION

This manual and the STCPOST manuals listed below can be ordered from:

Storage Technology Corporation
FE Documentation Subscription Service MD FW
2270 South 88th Street
Louisville, Colorado 80028

Phone: (303) 673-6789 or (303) 673-4840

This manual should be used with the following manuals:

STCPOST REFERENCE HANDBOOK	FE-009
STCPOST STAND-ALONE EXECUTIVE REFERENCE MANUAL	FE-010
STCPOST MESSAGES AND CODES	FE-012
STCPOST FRIEND FUNCTION REFERENCE MANUAL	FE-013

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CHAPTER 1

INTRODUCTION TO STCPOST

The Storage Technology Corporation Program for Online Subsystem Testing (STCPOST) is a functional testing program for StorageTek devices, a diagnostic tool for StorageTek Field Engineers (FE), and a utility program for general applications.

STCPOST runs as a normal batch job or as a console-started task. It reduces the impact of subsystem maintenance tests by reducing or eliminating the need for dedicated resources. STCPOST runs concurrently with normal system operations, under control of an operating system control program, and maintains data integrity. Maintenance functions that require a dedicated control unit for micro diagnostics or a dedicated off-line device for the Online Test Executive Program (OLTEP), can be done on-line by STCPOST with only minimal interference with normal system operation.

STCPOST functions can usually be run concurrently with normal operations with the device online. The few exceptions are due to hardware and software considerations. Functions of this type require a dedicated device and are implemented by excluding concurrent device use. An example is the function which changes the mode of an 8350 drive from compatibility to native mode or vice versa. STCPOST uses normal system interfaces to execute all functions.

STCPOST allows the routine use of some functions to validate proper hardware functioning without disrupting normal operations. STCPOST can usually define hardware failures so that StorageTek FEs may repair the problem. When STCPOST is used by the customer to identify suspected problems, repair time may be reduced.

After FEs have serviced the hardware, customers should use STCPOST to validate proper hardware operation. This procedure eliminates most FE recalls.

OPERATING SYSTEMS SUPPORTED

STCPOST can be installed (by the customer's system programmer) and executed on DOS/VSE, OS/VS1, MVS/370, and MVS/XA operating systems. It can also be executed with the STCPOST Stand-Alone Executive (SAE) on a stand-alone CPU or on a VM/370 virtual machine.

DEVICES SUPPORTED

STCPOST supports these StorageTek devices:

4305	(2305-2)
4305	in 3380 mode
8100	(3330 Model I)
8350	Native Mode (3350)
8350	in 3330 Model I mode
8350	in 3330 Model II mode
8360	Native Mode (3350)
8360	in 3330 Model II mode
8380	Native Mode (3380)
8650	Native Mode (3350)
8650	in 3330 Model II mode
8800	in 3330 Model I mode
8800	in 3330 Model II mode
3400	Tape (3420)
3600	Tape (3420)
4500	Tape (3420)
4600	Tape (3420)
6100 Laser Printer	(3800)
MOD I Printer	(3211)
MOD II Printer	(1404-NI)
MOD VII Printer	(3203-5)

STCPOST may generate unpredictable results if run on other than StorageTek devices.

CHAPTER 2

STCPOST OPERATIONS

STCPOST executes as a batch program on OS/VS and DOS/VSE systems, and also runs with its own small operating system, the STCPOST Stand-Alone Executive (SAE). The operation of STCPOST is the same in all of these environments.

STCPOST INPUT

The operation of STCPOST is directed by the control card input data set. STCPOST reads a control card from the control card input data set and executes the specified STCPOST function. When the function is complete, the next control card is read and the next function is executed. Normally STCPOST terminates after all of the control card input has been processed. Some STCPOST functions also read other input data sets.

STCPOST OUTPUT

The STCPOST main program prints messages in the printer output data set, and displays them on the operator's console. The output of most STCPOST functions is the same. Some functions, however, may create other output data sets.

STCPOST FUNCTIONS

STCPOST has three types of functions: functional tests, diagnostic tests, and utilities.

FUNCTIONAL TESTS

The functional tests perform standard I/O operations to a test device. In most cases, these I/O operations are similar to the I/O operations done by customer programs or by the operating system during normal operation.

DIAGNOSTIC TESTS

The diagnostic tests perform non-standard I/O operations to a test device. These I/O operations are used to verify that the device operates correctly.

UTILITIES

The utility functions are used to dump data from a device, assign alternate tracks, etc. These functions do not perform functional or diagnostic testing.

STCPOST EXECUTION

When running with OS/VS or DOS/VSE systems, STCPOST is executed by running a job that calls for the execution of the program. When running STCPOST with SAE, the functional equivalent to a job is run by entering commands to SAE. This manual describes how to run STCPOST on an OS/VS or DOS/VSE system. For information about running STCPOST with SAE, refer to the STCPOST STAND-ALONE EXECUTIVE REFERENCE MANUAL SE-010.

DATA SETS USED

STCPOST uses the following data sets in all of its operating environments. The OS/VS or DOS/VSE Job Control Language (JCL) for the STCPOST job must define these data sets. When running with SAE, SAE commands are used to define these data sets.

To run STCPOST, the following data sets are required:

- Printer Output Data Set
- Control Card Input Data Set
- Control Card Editor Data Set

PRINTER OUTPUT DATA SET

For OS/VS systems, the printer output data set is defined by the SYSPRINT DD card, for DOS/VSE systems by the SYSLST ASSGN card. When STCPOST is run with SAE, the printer output data set may be directed to either the operators console or to a printer, or to both.

CONTROL CARD INPUT DATA SET

For OS/VS systems, the control card input data set is defined by the SYSIN DD card, for DOS/VSE systems, by the SYSIPT ASSGN card. When STCPOST is run with SAE, the control card input data set may be read from a card reader or tape device. The use of this data set is optional, if it is not used, the STCPOST control cards must be prepared using the Control Card Editor.

CONTROL CARD EDITOR DATA SETS

The STCPOST Control Card Editor uses two data sets. The first data set is used to hold the active and alternate control card sets. The second data set is used to hold up to ten user-defined control card sets. These data sets are not used if the control cards are read from the control card input data set.

TEST DEVICES

The devices to be tested by STCPOST must be defined. On OS/VS systems and with SAE, STCPOST uses seven different types of device definitions. For DOS/VSE systems, four types of device definitions are used.

CONTROL CARD EDITOR

The STCPOST Control Card Editor is used to either prepare the STCPOST control cards at the operators console or to select a predefined control card set.

When running STCPOST with OS/VS or SAE, the Control Card Editor is invoked if:

- The control card input data set (SYSIN) is not defined, fails to open, or is empty.
- A control card set name or number is specified by the TEST parameter of the STCPOST OS/VS JCL procedure. Even if defined, the control card input data set (SYSIN) is ignored.
- A control card set name or number is specified by the TEST parameter of the SAE START or RESTART command. Even if defined, the control card input data set (SYSIN) is ignored.
- A control card set name or number is specified in the OS/VS JCL EXEC card PARM field data. Even if defined, the control card input data set (SYSIN) is ignored.

When running STCPOST with DOS/VSE, the Control Card Editor is invoked if the control card input data set (SYSIPT) is not defined, fails to open, or is empty.

CHAPTER 3

STCPOST FUNCTIONS OVERVIEW

The following are brief descriptions of STCPOST functions.

Assign (ASSIGN)
The ASSIGN function is used to assign an alternate track for a defective data track on 3330 or 3350 type devices or to flag an alternate track as a defective alternate. The assignments are unconditional.

Assign Defect Skip (ASSIGNDS)
The ASSIGNDS function changes the defect skip information for a track on a 3350 type device operating in native mode.

Config (CONFIG)
The CONFIG function is used to verify system device addressing.

Control Unit Trace (CUTRACE)
The CUTRACE function is used to print the control unit trace information collected by the control unit inlines of the StorageTek 4000 or 8000 control unit.

Define (DEFINE)
The DEFINE function is used under OS/VS (VS1, MVS/370, and MVS/XA) to allocate offline devices and under DOS/VSE to assign unassigned devices for use by other STCPOST functions. The off-line (unassigned) device address is equated to a ddname. Up to eight devices may be defined for a single execution of STCPOST. NOTE - The DEFINE function under DOS/VSE requires that VSE/AF be installed.

Diagnostic (DIAGnostic)
The DIAGNOSTIC function is used to execute the 3400 tape diagnostic tests on STC 3400, 3600, 4500, 4600, or 4800 tape subsystems, the 4000 SSD diagnostic tests on STC 4305 SSD subsystems, the 2500 printer diagnostic tests on STC/Documation MOD I, MOD II, or MOD VII printers, the 3380 diagnostics on STC 8380 disk subsystems, the 3350 diagnostics on STC 8350, 8360, and 8650 disk subsystems and, the 3800 diagnostics on the STC/Documation 6100 Laser Printer.

Display (DISPLAY)
The DISPLAY function is used to display records from SYS1.LOGREC or an EREP accumulation data set.

Format (FORMAT)
The FORMAT function is used to format a StorageTek 4305 Solid State Disk in either 2305-2 or 3380 mode. All of the tracks are written with the proper Home Address (HA) and Record Zero (R0). A volume label and VTOC may also be written.

Friend (FRIEND)
FRIEND allows an FE to create and execute CCW chains to a test device. Refer to the STCPOST FRIEND FUNCTION REFERENCE MANUAL FE-013.

Generate Stand-Alone Programs (GENSAPGMS)
GENSAPGMS generates IPL tapes and disks containing the STCPOST Stand-Alone Executive (SAE) and STCPOST. Refer to the STCPOST STAND-ALONE EXECUTIVE REFERENCE MANUAL FE-010.

Mode-Change (MODECHG)
The MODECHG function is used to change the format of a 3350 type volume from native mode to compatability mode or from compatability mode to native mode.

Option (OPTION)
The OPTION function specifies STCPOST function execution options. The options specified apply until changed by another OPTION function control card.

Re-Create Volume Label (RECREATEVL)
The RECREATEVL function is used to restore the volume label on a DASD volume which does not have a valid label but does have a valid Volume Table of Contents (VTOC).

Track-Dump (TRKDUMP)
The TRKDUMP function dumps (prints) the Home Address (HA), Record Zero (R0), and all fields of all data records on a track of a DASD volume. A list of the contents of the count field of every record is printed prior to the dump of the track.

Unassign (UNASSIGN)
The UNASSIGN function is used to reverse the assignment of a defective/alternate track pair on 3330 or 3350 type devices.

Volume-Scan (VOLSCAN)
The VOLSCAN function reads the Home Address (HA), Record Zero (R0), and ALL data records on every track of a DASD volume, including the CE tracks. VOLSCAN checks all defective and alternate tracks for correct defective/alternate track pairing.

Write-Read Disk (WRDISK)
The WRDISK function exercises one to eight DASD devices (volumes). The devices can be mixed types (3330-1, 3330-11, 3350, 3380, and 2305-2).

Write-Read Tape (WRTAPE)
The WRTAPE function exercises one to eight tape devices.

Write-Read (WRTREAD)
The WRTREAD function exercises a single DASD device (volume).

Write-Read 4305 (WR4305)
The WR4305 function exercises the StorageTek 4305 Solid State Disk subsystem.

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CHAPTER 4

INSTALLATION PROCEDURES FOR OS/VS SYSTEMS

STCPOST can be installed on OS/VS1, MVS/370, and MVS/XA operating systems. Installation procedures are installation dependent and should be performed by the customer's system programmer. It is assumed that the installing programmer is familiar with the system and its requirements.

STCPOST is distributed on the StorageTek FE SOFTWARE DISTRIBUTION TAPE which is an unlabeled 9-track tape. The following files on the distribution tape are used when STCPOST is installed on an OS/VS system:

File 16: Samples of the installation jobs shown below.

File 17: Linkage editor control cards and object modules for the STCPOST main program and functions.

File 19: The STCPOST OS/VS JCL Procedures (listed in Appendix C).

File 30: The source for module STCPSTOM. This module contains the STCPOST MODESET operations.

File 31: The source for module STCPSTOD. This module contains the STCPOST execution parameter defaults.

The Data Control Block (DCB) attributes of the data sets contained in these files are:

Record Format (RECFM)	=	Fixed Block (FB)
Logical Record Length (LRECL)	=	80
Blocksize (BLKSIZE)	=	3200
Density (DEN)	=	1600 BPI (3) or 6250 BPI (4)

NAMING CONVENTIONS

STCPOST uses the following naming conventions for its modules:

P3350A - P3350ZZZ, P3380A - P3380ZZZ, P3400A - P3400ZZZ, P3800A - P3800ZZZ, P4000A - P4000ZZZ, STCPOST, STCPOSTx, STCPSTxx, T2500A - T2500Z, T3400A - T3400Z, and T4000A - T4000Z.

Not all of these names are used.

Before installing STCPOST, verify that these names will not conflict with the name(s) of any other program(s) in the data set(s) where STCPOST is placed.

OS/VS1 OPERATING SYSTEM NOTES

The following conventions should be observed when installing STCPOST on an OS/VS1 system:

1. The STCPOST program modules in file 17 of the distribution tape must be link-edited into an APF authorized library. The data set name of this library must be specified in the SYS1.PARMLIB member IEAAPFxx. The name STCPOST must be added to the system module IEFSDPPT. See the OS/VS1 PLANNING AND USE GUIDE GC24-5090.

2. STCPOST supercedes and obsoletes all StorageTek Online Test (OLT) modules. STCPOST can not be installed into a library which contains OLT modules (a library created by the IBM OLTEP utility program IFDOLT99).

OS/VS2 MVS OPERATING SYSTEM NOTES

The following conventions should be observed when installing STCPOST on an OS/VS2 MVS system:

1. The STCPOST program modules in file 17 of the distribution tape must be link-edited into an APF authorized library. The data set name of this library must be specified in either the SYS1.PARMLIB member IEAAPFxx or LNKLSTxx. See the IBM MVS SYSTEM PROGRAMMING LIBRARY: INITIALIZATION AND TUNING GUIDE GC28-0681.

2. STCPOST supercedes and obsoletes all StorageTek Online Test (OLT) modules. STCPOST can not be installed into a library that contains OLT modules (a library created by the IBM OLTEP utility program IFDOLT99).

INSTALLATION STEPS

The following steps must be followed when installing STCPOST:

1. Link-Edit the program modules.

The following Job Control Language will Link-Edit the STCPOST main program and function modules. The SYSLMOD DD card must be changed to reflect the name of the selected library. These modules require approximately three cylinders of space on a 3350 type device.

```
//jobname  JOB  ...
//LKED     EXEC PGM=IEWL
//              PARM='XREF,LIST,LET,NCAL'
//SYSPRINT DD   SYSOUT=A
//SYSLIN   DD   UNIT=tape,DISP=OLD,LABEL=(17,NL),
//              VOL=SER=STCPST,
//              DCB=(RECFM=FB,LRECL=80,BLKSIZE=3200)
//SYSLMOD  DD   DSN=data-set-name,DISP=SHR
//SYSUT1   DD   UNIT=SYSDA,SPACE=(1024,(200,20))
//
```

2. Delete the existing I/O appendages.

If this installation is a replacement for the last released version of STCPOST (version 2.0A), delete modules IGG019YC, IGG019YD, and IGG019YE from SYS1.SVCLIB and/or SYS1.LPALIB.

If this is a replacement for a field test version of STCPOST, delete modules IGG019WC, IGG019WD, and IGG019WE from SYS1.SVCLIB and/or SYS1.LPALIB.

NOTE

The appendage names may have been changed from these names when STCPOST was installed. Verify the module names before deleting them.

3. Add the STCPOST OS/VS JCL procedures

The following Job Control Language will add the STCPOST OS/VS JCL procedures to a specified procedures library. These procedures execute the STCPOST Control Card Editor and STCPOST. The STCPOST OS/VS JCL procedures are listed in Appendix C. The SYSUT2 DD Card must be changed to reflect the name of the selected procedure library.

```
//jobname  JOB ...
//        EXEC PGM=IEBUPDTE,PARM=NEW
//SYSPRINT DD  SYSOUT=A
//SYSUT2   DD  DSN=data-set-name,DISP=SHR
//SYSIN    DD  UNIT=tape,DISP=OLD,LABEL=(19,NL),
//             VOL=SER=STCPST,
//             DCB=(RECFM=FB,BLKSIZE=3200,LRECL=80)
//
```

4. Initialize the Control Card Editor data set.

The following Job Control Language will allocate and initialize the Control Card Editor data set. The name of this data set is specified by the CCLIB parameter of the STCPOST OS/VS JCL procedures. This data set is a one track sequential data set normally containing a single data record. The SYSUT2 DD card must be changed to indicate the volume serial number of the DASD volume on which this data set is to reside.

```
//jobname  JOB ...
//         EXEC PGM=IEBGENER
//SYSPRINT DD  SYSOUT=A
//SYSIN    DD  DUMMY,DCB=BLKSIZE=80
//SYSUT1   DD  DUMMY,DCB=(RECFM=F,BLKSIZE=2576,LRECL=2576)
//SYSUT2   DD  DSN=POST.CONTROL,DISP=(,CATLG),UNIT=SYSDA,
//             VOL=SER=vvvvvv,SPACE=(TRK,1),
//             DCB=(RECFM=F,BLKSIZE=2576,LRECL=2576)
//
```

5. Initialize the Default Control Card data set.

The following Job Control Language will allocate and initialize the Default Control Card data set. The name of this data set is specified by the CCDEF parameter of the STCPOST OS/VS JCL procedures. This data set is a two track sequential data set which contains several data records. The SYSUT2 DD card must be changed to reflect the volume serial number of the DASD volume on which this data set is to reside. The block size of the data set may be any multiple of 80. The SYSUT1 DD card defines the file which contains the default control card data.

Each default control card set must begin with a card containing a '#' in column 1 and a digit (0 to 9) in column 2. This card is followed by 1 to 16 STCPOST control cards. There may be up to ten default control card sets. The last card must be a card with '##' in column 1 and 2.

This job may be run at any time to change the default control card data sets.

```
//jobname  JOB ...
//         EXEC PGM=IEBGENER
//SYSPRINT DD  SYSOUT=A
//SYSIN    DD  DUMMY,DCB=BLKSIZE=80
//SYSUT2   DD  DSN=POST.DEFAULT,DISP=(,CATLG),UNIT=SYSDA,
//             VOL=SER=vvvvvv,SPACE=(TRK,2),
//             DCB=(RECFM=FB,BLKSIZE=n,LRECL=80)
//SYSUT1   DD  *,DCB=BLKSIZE=80
```

```
#0
     [ INSERT DEFAULT CONTROL CARD SET 0 HERE      ]
     [ EACH CONTROL CARD SET MAY HAVE 0 - 16       ]
     [ CARDS.                                      ]
#1
     [ INSERT DEFAULT CONTROL CARD SET 1 HERE      ]
#2
     [ INSERT DEFAULT CONTROL CARD SET 2 HERE      ]
     [ Continue with control card sets 3 - 9       ]
     [ as desired.                                 ]
##
//
```

Here is an example that defines default control card data sets 0, 1, 2 and 9:

```
#0
     WRTREAD SUMMARY
     VOLSCAN SUMMARY
#1
     WRTREAD SUMMARY
#2
     DIAGNOSTIC OPERATOR
#9
     WRTAPE NPASS=5 DENSITY=800
##
```

PERMANENTLY CHANGING STCPOST EXECUTION PARAMETERS

The following STCPOST execution parameters can be permanently changed:

1. The ddname of the printer output data set (default is SYSPRINT),
2. The ddname of the control card input data set (default is SYSIN),
3. The printer output data set page size (default is 55 lines),
4. The printer output data set block size (default is 484),
5. The default OPTION IODELAY value (default is 2),
6. The length and patterns for the DD type 3 and 4 data set names (default length is 14 for type 3 and 16 for type 4, default pattern is STC.WRITE.READ for type 3 and STC.DEFECT.TRACK for type 4),
7. The customer name (default is blanks).

The method for permanently changing the execution parameters is:

1. Copy the source code for module STCPSTOD from file 31 of the FE SOFTWARE DISTRIBUTION TAPE using the following JCL. The SYSUT2 DD card must be changed to indicate which data set to copy the source code to.

```
//jobname  JOB ...
//COPY31   EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=A
//SYSIN    DD DUMMY,DCB=BLKSIZE=80
//SYSUT1   DD UNIT=TAPE,DISP=OLD,LABEL=(31,NL),
//            VOL=SER=STCPST,
//            DCB=(RECFM=FB,BLKSIZE=3200,LRECL=80)
//SYSUT2   DD DSN=data-set-name,etc.
//
```

2. Modify the STCPSTOD source code.

3. Assemble the modified source code.

4. Link-edit the changed object module using the following JCL. The SYSLMOD DD card must be modified to reflect the library in which the STCPOST modules reside.

```
//jobname  JOB ...
//LKED     EXEC PGM=IEWL,PARM='XREF,LIST,LET,NCAL'
//SYSPRINT DD SYSOUT=A
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(200,20))
//SYSLMOD  DD DSN=data-set-name,DISP=SHR
//SYSLIN   DD *
 [ insert object deck of modified STCPSTOD here ]
 ENTRY STCPSTOD
 SETCODE AC(1)
 NAME STCPSTOD(R)
//
```

TEMPORARILY CHANGING STCPOST EXECUTION PARAMETERS

The following STCPOST execution parameters can be changed at execution time:

1. The printer output data set page size,

2. The ddname of the control card input data set, and

3. The ddname of the printer output data set.

To change these parameters, code the PARM= parameter on the JCL EXEC card for STCPOST. In addition, the PARM field may contain the name of a batch control card set that is to be used by the control card prompt facility of the Control Card Editor. The PARM= parameter is defined as follows:

```
PARM='nnnoooooooooiiiiiiiittttttttttttttt'
```

where nnn is the print file page size in decimal (nnn may not be less than 20 or greater than 999), oooooooo is the ddname of the output file (if less than eight characters are used, the name MUST be padded on the right with blanks), iiiiiiii is the ddname of the control card input file (if less than eight characters are used the name MUST be padded on the right with blanks) and tttttttttttttttt equals the name or number of the control card set to be supplied by the Control Card Editor. This control card set name can contain up to 16 characters, and need not be padded on the right with blanks if less than 16 characters are used.

The defaults are:

nnn = 055

oooooooo = SYSPRINT

iiiiiiii = SYSIN

tttttttttttttttt = null

MODESET OPERATIONS

STCPOST modesets to the following states by using the MODESET macro: Problem State Key Zero, Supervisor State Key Non-zero, and Supervisor State Key Zero. All instructions executed to set a particular mode, and the instructions executed while in that mode are contained in module STCPSTOM. The source code for this module is contained in file 30 of the StorageTek FE SOFTWARE DISTRIBUTION TAPE.

USING ATTACH, LINK, LOAD OR XCTL TO EXECUTE STCPOST

STCPOST may be executed by using the ATTACH, LINK, LOAD or XCTL system macro instructions. For example:

```
        LA    1,PARMADDR
        LINK  EP=STCPOST
        .
        .
        .
```

```
PARMADDR DS    0F
         DC    X'80',AL3(PARMDATA)
PARMDATA DC    AL2(PARMLEN)
         DC    CL3'055'          OUTPUT FILE LINES/PAGE
         DC    CL8'SYSPRINT'     OUTPUT FILE NAME
         DC    CL8'SYSIN'        INPUT FILE NAME
         DC    CL16'name'        CONTROL CARD SET NAME (OPTIONAL)
PARMLEN  EQU   *-PARMDATA-2
```

The program which uses the ATTACH, LINK, LOAD or XCTL system macro instruction must be an APF authorized program.

CHAPTER 5

INSTALLATION PROCEDURES FOR DOS/VSE SYSTEMS

STCPOST can be installed on DOS/VSE operating systems. Installation procedures are site dependent and should be performed by the customer's system programmer.

NOTE

STCPOST is not supported on modified DOS/VSE systems or DOS/VSE look-alike systems if these systems operate differently than the standard IBM DOS/VSE systems.

STCPOST is distributed on the StorageTek FE SOFTWARE DISTRIBUTION TAPE which is an unlabeled 9-track tape. The following files on the distribution tape are used when STCPOST is installed on a DOS/VSE system:

File 20: Contains the JCL and the object modules needed to install STCPOST.

File 31: The source for module STCPSTOD. This module contains the STCPOST execution parameter defaults.

The attributes of the data set contained in this file are:

Record Format	=	Fixed Block (FB)
Logical Record Length	=	80
Blocksize	=	3200
Density	=	1600 BPI or 6250 BPI

NAMING CONVENTIONS

STCPOST uses the following naming conventions for its modules:

P3350A - P3350ZZZ, P3380A - P3380ZZZ, P3400A - P3400ZZZ, P3800A - P3800ZZZ, P4000A - P4000ZZZ, STCPOST, STCPOSTx, STCPSTxx, T2500A - T2500Z, T3400A - T3400Z, and T4000A - T4000Z.

Not all of these names are used.

Before installing STCPOST verify that these name(s) will not conflict with the names of any other program(s) in the data set(s) into which STCPOST is placed.

INSTALLATION STEPS

This section explains how to install the STCPOST system on a DOS/VSE operating system. Read instructions for all steps to determine those that apply.

Direct-access storage space is needed for a private core image library (if a private library is to be used).

The follwoing steps must be followed when installing STCPOST:

1. Verify Storage Requirements.

   STCPOST requires the following disk space:

LIBRARY or FILE	CONTENT or USE	SPACE REQUIRED
Core Image Library	Executable Code.	900 blocks.
Work File	Deblock data on disk.	210 tracks on 3350.

   The number of tracks allocated to these libraries will vary depending on the type of device on which the libraries reside. The following jobs assume a 3350 type device is being used:

2. Create Private Libraries.

   STCPOST may be placed into existing libraries or into a private core image library.

   To create a private core image library, use the following JCL:

```
// JOB STCALLOC                        ALLOCATE PRIVATE LIBRARY
// DLBL STCCL,'STC.CIL',99/365,SD      PRIVATE CORE IMAGE LIBRARY
// EXTENT   ,SYSWK1,1,0,nnnn,90        nnnn = STARTING TRACK
// LIBDEF CL,NEW=STCCL
// EXEC CORGZ
   NEWVOL CL=3(2)
```

```
/*
/&
```

3. Deblock the STCPOST Modules.

Use the following JCL to deblock the STCPOST modules from file 20 to tape:

```
// JOB STCDEBLK                          TAPE TO TAPE DEBLOCK
// ASSGN SYS004,cuu                      INPUT
// ASSGN SYS005,cuu                      OUTPUT
// MTC REW,SYS004                        REWIND INPUT TAPE
// MTC FSF,SYS004,19                     FORWARD SPACE TO FILE 20
// EXEC OBJMAINT
./ BLOCK BLKSIZE=80
./ COPY
/*
/&
```

Use the following JCL to deblock the STCPOST modules from file 20 to disk:

```
// JOB STCDEBLK                          TAPE TO DISK DEBLOCK
// ASSGN SYS004,cuu                      INPUT
// ASSGN SYS005,cuu                      OUTPUT
// MTC REW,SYS004                        REWIND INPUT TAPE
// MTC FSF,SYS004,19                     FORWARD SPACE TO FILE 20
// DLBL UOUT,'POST.SYSIN.FILE',0,SD
// EXTENT SYS005,SYSWK1,1,0,nnnn,210     nnnn = STARTING TRACK
// EXEC OBJMAINT
./ BLOCK BLKSIZE=80
./ COPY
/*
/&
```

4. Link-edit the Program Modules.

Use the following JCL to link the deblocked STCPOST modules from tape into the STCPOST Core Image Library:

```
// JOB STCLINK
// DLBL STCCL,'STC.CIL'
// EXTENT   ,SYSWK1
// LIBDEF CL,TO=STCCL,PERM
   ASSGN SYSIN,cuu                    TAPE INPUT
```

When the STCLINK job ends, respond:

```
ASSGN SYSIN,UA
ASSGN SYSIN,cuu
```

to the attention message.

Use the following JCL to link the deblocked STCPOST modules from disk into the STCPOST Core Image Library:

```
// JOB STCLINK
// DLBL STCCL,'STC.CIL'
// EXTENT   ,SYSWK1
// LIBDEF CL,TO=STCCL,PERM
// DLBL IJSYSIN,'POST.SYSIN.FILE'    DISK INPUT
// EXTENT SYSIN,SYSWK1
   ASSGN SYSIN,DISK,VOL=SYSWK1,SHR
```

When the STCLINK job ends, respond:

```
    CLOSE SYSIN,cuu
```

to the end-of-extent message.

5. Initialize the Control Card Editor data set.

The following Job Control Language will allocate and initialize the Control Card Editor data set. This data set is a sequential data set normally containing a single data record. This data set requires one track of a CKD DASD device or six blocks of an FBA DASD device. The ASSGN and EXTENT cards must be changed to indicate the address and volume serial number of the DASD volume on which this data set will reside. This data set can reside on any type of DASD volume.

```
// JOB CCLIB
// ASSGN SYS005,cuu
// DLBL UOUT,'POST.CONTROL',99/365,SD
// EXTENT SYS005,vvvvvv,1,0,tttt,n      tttt=starting track (block)
                                           n=number of tracks (blocks)
// EXEC CLRDK
// UCL B=(K=0,D=2576),X'00',ON,E=(dddd) dddd=device type
// END
/*
/&
```

6. Initialize the Default Control Card data set.

The following Job Control Language will allocate and initialize the Default Control Card data set. This data set is a sequential data set containing several data records. This data set requires two tracks on a CKD DASD device or 30 blocks on an FBA DASD device. The ASSGN and EXTENT cards for SYS005 must be changed to indicate the address and vol-

ume serial number of the DASD volume on which this data set will reside.

Each default control card set must begin with a card containing a '#' in columns 1 and a digit (0 to 9) in column 2. This card is followed by 1 to 16 STCPOST control cards. There may be up to ten default control card sets. The last card must be a card with '##' in column 1 and 2.

This job may be run at any time to change the default control card data sets.

```
// JOB CCDEF
// ASSGN SYS004,cuu
// ASSGN SYS005,cuu
// DLBL UOUT,'POST.DEFAULT',99/365,SD
// EXTENT SYS005,vvvvvv,1,0,tttt,n      tttt=starting track (block)
                                          n=number of tracks (blocks)
// EXEC OBJMAINT
./ ACTION DATA=SYSIPT
./ BLOCK BLKSIZE=80
./ COPY
#0
    [ INSERT DEFAULT CONTROL CARD SET 0 HERE     ]
    [ EACH CONTROL CARD SET MAY HAVE 0 - 16      ]
    [ CARDS.                                     ]
#1
    [ INSERT DEFAULT CONTROL CARD SET 1 HERE     ]
#2
    [ INSERT DEFAULT CONTROL CARD SET 2 HERE     ]
    [ Continue with control card sets 3 - 9      ]
    [ as desired.                                ]
##
/*
/&
```

Here is an example that defines default control card data sets 0, 1, 2 and 9:

```
#0
     WRTREAD SUMMARY
     VOLSCAN SUMMARY
#1
     WRTREAD SUMMARY
#2
     DIAGNOSTIC OPERATOR
#9
     WRTAPE NPASS=5 DENSITY=800
##
```

PERMANENTLY CHANGING STCPOST EXECUTION PARAMETERS

The following STCPOST execution parameters can be permanently changed:

1. The printer output data set page size (default is 55 lines),
2. The default OPTION IODELAY value (default is 2),
3. The customer name (default is blanks).

The method for changing the STCPOST execution parameters is:

1. Copy (and deblock) the source for module STCPSTOD from file 31 of the FE SOFTWARE DISTRIBUTION TAPE using the following JCL.

```
// JOB STCDEBLK                          TAPE TO DISK DEBLOCK
// ASSGN SYS004,cuu                      INPUT
// ASSGN SYS005,cuu                      OUTPUT
// MTC REW,SYS004                        REWIND INPUT TAPE
// MTC FSF,SYS004,30                     FORWARD SPACE TO FILE 31
// DLBL UOUT,'STCPOST.DEFAULTS.FILE',0,SD
// EXTENT SYS005,SYSWK1,1,0,nnnn,2       nnnn = STARTING TRACK
// EXEC OBJMAINT
./ DEBLOCK
/*
/&
```

2. Modify the STCPSTOD source code. Note - the name on the TITLE statement must be shortened to 4 characters.

3. Assemble and link-edit the changed source code using the following JCL:

```
// JOB STCASMLK                          LINK STCPOST MODULES FROM DISK
// DLBL STCCL,'STC.CIL'
// EXTENT   ,SYSWK1
// LIBDEF CL,TO=STCCL,PERM               LINK TO PRIVATE CIL
// OPTION CATAL
   PHASE STCPSTOD,*
// EXEC ASSEMBLY ,SIZE-128K
 [ insert modified source code for STCPSTOD here ]
/* EOF SOURCE
// EXEC LNKEDT
/&
```

CHAPTER 6

STCPOST OS/VS JOB CONTROL LANGUAGE

STCPOST may be executed using the basic OS/VS JCL or using the OS/VS JCL procedures. The basic OS/VS JCL is used to execute STCPOST as a batch job. The basic OS/VS JCL defines the test device(s) and the STCPOST control card(s). When the basic OS/VS JCL is used, more than one test device and more than 16 control cards may be defined. The OS/VS JCL procedures are predefined basic OS/VS JCL jobs which are installed on the system and are used when STCPOST is started using a START command entered at the operator's console or when a procedure is specified to be executed as a batch job.

THE BASIC OS/VS JCL

The following JCL can be used to execute STCPOST on an OS/370, OS/VS1 or OS/VS2 operating system.

```
1   //jobname  JOB acct-info,name,...
2   //         EXEC PGM=STCPOST [,PARM=parms]
3   //SYSPRINT DD  SYSOUT=A
4 [ //SYSCCLIB DD  DSN=data-set-name,DISP=SHR ]
5 [ //SYSCCDEF DD  DSN=data-set-name,DISP=SHR ]
6   //ddname   DD  [   a test device DD card  ]
7   //SYSIN    DD  *
8    [ STCPOST control cards ]
9   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed. If the PARM parameter is included, it must be specified as described in the section titled: Temporarily Changing STCPOST Execution Parameters in Chapter 4. If the parameter field specifies a control card set name or number or *, the SYSCCLIB DD and SYSCCDEF DD cards must be included.

3. The SYSPRINT DD card describes the printed output file.

4. The SYSCCLIB DD card describes the control card data set of the Control Card Editor. If the Control Card Editor is not used, omit this card and the SYSCCDEF DD card.

5. The SYSCCDEF DD card describes the default control card data set of the Control Card Editor. If the Control Card Editor is not used, omit this card and the SYSCCLIB DD card.

6. One or more test device DD cards are used to describe each of the devices to be tested. Refer to the section titled Test Device DD Card in this chapter.

7. The SYSIN DD card describes the control card input file. If this DD card is omitted, STCPOST will invoke the Control Card Editor.

8. One or more control cards are used to specify the STCPOST functions which are to be executed. If the SYSIN DD card is omitted, do not include any control cards.

9. This card indicates the end of the job JCL deck.

TEST DEVICE DD CARD

The test device DD card(s) define to STCPOST the device(s) that are to be tested. One test device DD card must be included for each device that STCPOST is to test. There are seven types of test device DD cards. The type used is determined by the function being executed.

The following terms are used in the DD card type descriptions.

ddname = the DD card name. See the OPTION function DDNAME parameter.

disk = the disk drive device type: 3330 (model 1), 3330-1 (model 11), 3350, 3380 or 2305-2. The device address can also be used (three hex digits).

tape = the tape drive device type: 3400-4 (800/1600 bpi) or 3400-6 (1600/6250 bpi). The device address can also be used (three hex digits).

printer = the printer device type:

1403 - MOD II (IBM 1403-N1)
3203 - MOD VII (IBM 3203-5)
3211 - MOD I (IBM 3211)
3800 - 6100 Laser Printer (IBM 3800)

The device address (three hex digit) can also be used.

volser = the volume serial number of the disk volume or tape volume to be mounted on the test device.

nt = the number of tracks to be allocated.

nc = the number of cylinders to be allocated.

loc = the address of the first track to be allocated. The address is calculated using this formula (all numbers are decimal): loc = ((cyl numb) x (numb trks per cyl) + (head numb)). Cylinder zero head zero is track location zero.

NOTE

For DD card types 3, 4, and 6, the UNIT and VOL parameters are required only if the existing data set is not cataloged.

DD CARD TYPE 0

DD type 0 is used by the FORMAT, MODECHG, and RECREATVL functions.

This DD type must be defined to STCPOST via the DEFINE function. There is no DD card in the OS/VS job JCL for STCPOST. The device must be offline to the OS/VS operating system when STCPOST is executed.

DD CARD TYPE 1

This card is used for disk read-only functions. The format of a type 1 DD card is:

```
//ddname DD UNIT=disk,VOL=SER=volser,SPACE=(TRK,0)
```

DD CARD TYPE 2

This card is used for disk write functions. The format of a type 2 DD card is:

```
                                                  (TRK,nt,,CONTIG)
//ddname DD UNIT=disk,VOL=SER=volser,SPACE=(CYL,nc,,CONTIG)
                                                  (ABSTR,(nt,loc))
```

DD CARD TYPE 3

This card is used for disk write functions within the existing data set STC.WRITE.READ. The format of a type 3 DD card is:

```
//ddname DD DSN=STC.WRITE.READ,DISP=OLD[,UNIT=disk,VOL=SER=volser]
```

This data set MUST be a standard OS/VS allocated data set. It can NOT be a VSAM data set allocated by the VSAM Access Method Services program (AMS). When using this data set name, 'STC.WRITE.READ', STCPOST checks only the first 14 characters. For example:

```
DSN=STC.WRITE.READ
DSN=STC.WRITE.READ.0001
DSN=STC.WRITE.READ.TEST.
```

DD CARD TYPE 4

This card is used for disk write functions within the existing data set STC.DEFECT.TRACK. The format of a type 4 DD card is:

```
//ddname DD DSN=STC.DEFECT.TRACK,DISP=OLD[,UNIT=disk,VOL=SER=volser]
```

This data set MUST be a standard OS/VS allocated data set. It can NOT be a VSAM data set allocated by the VSAM Access Method Services program (AMS). When using this data set name, 'STC.DEFECT.TRACK', STCPOST checks only the first 16 characters.

DD CARD TYPE 5

This card is used for tape or printer functions. The format of a type 5 DD card is:

```
//ddname DD UNIT=tape,VOL=SER=volser,LABEL=(,BLP)
```

or

```
//ddname DD UNIT=printer
```

DD CARD TYPE 6

This card is used for disk read functions within any previously defined data set. The Display function uses a type 6 DD card. The format of a type 6 DD card is:

```
//ddname DD DSN=data-set-name,DISP=OLD[,UNIT=disk,VOL=SER=volser]
```

or

```
//ddname DD DSN=data-set-name,DISP=SHR[,UNIT=disk,VOL=SER=volser]
```

TESTING OFFLINE DEVICES

Offline devices tested by STCPOST must be defined via the DEFINE function. There is no DD card in the the OS/VS job JCL for any device defined via the DEFINE function. Testing of offline devices may be mixed with testing of online devices in the same STCPOST job. The device tested must be offline to the operating system. At least one physical path to the device must be enabled and varied online when STCPOST begins execution. See the description of the DEFINE function in Chapter 10.

THE STCPOST OS/VS JCL PROCEDURE

The STCPOST OS/VS JCL procedure can be executed by either a batch job, or by using the OS/VS START command. When this procedure is used, the Control Card Editor is always invoked. If the TEST parameter is coded on the START command or on the EXEC card, the Control Card Editor will supply the specified control card set. If the TEST parameter is not coded, the Control Card Editor will allow the control cards to be defined at the operator's console.

STCPOST OS/VS JCL PROCEDURE PARAMETERS

The STCPOST OS/VS JCL procedure has several parameters which are used to specify the test device, test volume, test data set name, etc. Each of the parameters is described below.

TEST PARAMETER

The TEST parameter specifies the control card set name or number that the Control Card Editor will supply. If this parameter is not specified, the Control Card Editor will allow the control cards to be defined at the operator's console. Refer to Chapter 9, The Control Card Editor.

U PARAMETER

The U parameter specifies the device type of the test device. Valid disk device types are: 3330 (3330 model 1), 3330-1 (3330 model 11), 3350, 3380 and 2305-2. Valid tape device types are: 3400-4 and 3400-6. Valid printer device types are 1403, 3203, 3211, and 3800. The device address (three hexadecimal digits) can also be used. The default for this parameter is 3350.

V PARAMETER

The V parameter specifies the volume serial number of the volume mounted (or to be mounted) on the device which is to be tested. The default for this parameter is VVVVVV.

DS PARAMETER

The DS parameter specifies the data set name for the test data set. This name must be either 'STC.WRITE.READ' or 'STC.DEFECT.TRACK'. The default for this parameter is &&POST (a temporary data set).

D1 PARAMETER

The D1 parameter specifies the disposition (status) of the test data set at the beginning of the STCPOST execution. The disposition is either NEW or OLD. If the test device is a DASD and the disposition is NEW, a test data set is allocated (created). If the test device is a DASD and the disposition is OLD, the data set name specified by the DS parameter must be either STC.WRITE.READ... (for a type 3 DD), STC.DEFECT.TRACK ... (for a type 4 DD) or 'anyname' (for a type 6 DD) and must be on the volume specified by the V parameter. If the test device is a tape device, the disposition can be either NEW or OLD. The default for this parameter is NEW.

D2 PARAMETER

The D2 parameter specifies the dispostion of the test data set at the end of STCPOST execution. The disposition is either KEEP or DELETE. If the test device is a DASD and the disposition is DELETE, the test data set is deleted (scratched). If the test device is a DASD and the disposition is KEEP, the data set will be kept. If the test device is a tape device, the disposition can be either DELETE or KEEP. The default for this parameter is DELETE.

T PARAMETER

The T parameter specifies the type of DASD space to be allocated if the test device is DASD and 'D1=NEW' is specified. CYL specifies the space is to be allocated in cylinders; TRK specifies the space is to be allocated in tracks; ABSTR (absolute track) specifies that a specific track address is to be allocated if available. See the S parameter below. The default for this parameter is CYL.

S PARAMETER

The S parameter specifies the amount of DASD space to be allocated if the test device is DASD and D1=NEW is specified. The T and S parameters are related as follows:

T Parameter	S Parameter
CYL	The number of cyls to allocate in the format S=n
TRK	The number of trks to allocate in the format S=n
ABSTR	The number of tracks to allocate (amt) and the location (loc) of the first track in the format S='amt,loc'. loc is calculated using this formula (all numbers are decimal): loc = ((cyl number) x (number of tracks per cyl) + (head number)). For example: cylinder 25 head 3 on a 3350 type device is track location 753, ((25) x (30) + (3)).

LBL PARAMETER

The LBL parameter specifies the type of label on a tape volume if the test device is a tape device. For DD type 5, this parameter should be either LBL=NL or LBL=BLP. LBL=SL must not be used because STCPOST will not use a standard labeled tape volume. For DD type 6, NL, BLP, or SL can be used.

USING THE OS/VS JCL PROCEDURE IN A BATCH JOB

The following JCL can be used to execute the OS/VS JCL Procedure in a batch job:

```
1   //jobname  JOB  acct-info,name,...
2   //         EXEC PROC=STCPOST,...      [ see below ]
3   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST OS/VS JCL procedure be executed. Additional parameters on the EXEC card specify the DD card type to be used for the test device.

3. This card indicates the end of the job JCL deck.

The test device DD card type is specified by additional parameters on card 2 of the JCL deck. The following shows the format of card 2 for each of the DD card types:

Using DD card type 1:

```
//    EXEC PROC=STCPOST,U=disk,V=volser,S=0[,TEST=x]
```

Using DD card type 2:

```
//    EXEC PROC=STCPOST,U=disk,V=volser,S=nc[,TEST=x]
```

Using DD card type 3:

```
//    EXEC PROC=STCPOST,U=disk,V=volser,
//         D1=OLD,D2=KEEP,DS='STC.WRITE.READ'[,TEST=x]
```

Using DD card type 4:

```
//    EXEC PROC=STCPOST,U=disk,V=volser,
//         D1=OLD,D2=KEEP,DS='STC.DEFECT.TRACK'[,TEST=x]
```

Using DD card type 5:

```
//    EXEC PROC=STCPOST,U=tape,V=volser[,TEST=x]
```

or

```
//    EXEC PROC=STCPOST,U=printer[,TEST=x]
```

NOTE

1. This job requires that the STCPOST OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. The MODECHG, FORMAT and RECREATEVL functions which use DD card type 0 can not be used with this job.

3. Only one test device can be operated during the execution of this job.

4. See the Basic OS/VS JCL section for the descriptions of disk, tape, etc.

5. See the STCPOST OS/VS JCL Procedure Parameters section for a description of the TEST parameter.

STARTING THE PROCEDURE AT THE OPERATOR'S CONSOLE

The following START commands can be used to start the OS/VS JCL Procedure at an OS/VS system console.

Using DD card type 1:

```
S STCPOST,U=disk,V=volser,S=0[,TEST=x]
```

Using DD card type 2:

```
S STCPOST,U=disk,V=volser,S=nc[,TEST=x]
```

Using DD card type 3:

```
S STCPOST,U=disk,V=volser,D1=OLD,D2=KEEP,
          DS='STC.WRITE.READ'[,TEST=x]
```

Using DD card type 4:

```
S STCPOST,U=disk,V=volser,D1=OLD,D2=KEEP,
          DS='STC.DEFECT.TRACK'[,TEST=x]
```

Using DD card type 5:

```
S STCPOST,U=tape,V=volser[,TEST=x]

          or

S STCPOST,U=printer[,TEST=x]
```

NOTE

1. These OS/VS operator START commands require that the STCPOST OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. OS/VS1 operating systems require that the partition number be specified after STCPOST, i.e. 'S STCPOST.Pn,...,' where n is the partition number.

3. If the DS parameter is specified, the data set name must be entered in upper case.

4. The MODECHG, FORMAT and RECREATEVL functions which use DD card type 0 can not be used with the START command.

5. Only one test device can be operated during the execution of the job started with the START command.

6. See the Basic OS/VS JCL section for the descriptions of disk, tape, etc.

7. See the STCPOST OS/VS JCL Procedure Parameters section for the description of the TEST parameter.

THE STCPOSTD OS/VS JCL PROCEDURE

The STCPOSTD OS/VS JCL procedure is used to allocate the LOGREC data set so that the STCPOST DISPLAY function can be executed. This procedure should not be used if any other STCPOST function is to be executed.

The defaults for the parameters of this procedure should be changed to the unit type, volume serial number, and data set name of the LOGREC data set for the system that this procedure is installed on.

The STCPOSTD procedure can be executed by either a batch job, or by using the OS/VS START command. When this procedure is used, the Control Card Editor is always invoked. If the TEST parameter is coded on the START command or on the EXEC card, the Control Card Editor will supply the specified control card set. If the TEST parameter is not coded, the Control Card Editor will allow the control cards to be defined at the operator's console.

STCPOSTD OS/VS JCL PROCEDURE PARAMETERS

The STCPOSTD OS/VS JCL procedure has several parameters which are used to specify the device type, volume serial number, and data set name for the LOGREC data set. Each of the parameters is described below.

U PARAMETER

The U parameter specifies the device type of the LOGREC data set volume. Valid disk device types are: 3330 (3330 model 1), 3330-1 (3330 model 11), 3350, 3380 and 2305-2. The device address (three hexadecimal digits) can also be used. The default for this parameter is 3350.

V PARAMETER

The V parameter specifies the volume serial number of the LOGREC data set volume. The default for this parameter is VVVVVV.

DS PARAMETER

The DS parameter specifies the data set name for the LOGREC data set. The default for this parameter is SYS1.LOGREC.

TEST PARAMETER

The TEST parameter specifies the control card set name or number that the Control Card Editor will supply. If this parameter is not specified, the Control Card Editor will allow the control cards to be defined at the operator's console. Refer to Chapter 9, The Control Card Editor.

USING THE STCPOSTD PROCEDURE IN A BATCH JOB

The following JCL is used to execute the STCPOSTD Procedure in a batch job.

```
1   //jobname  JOB  acct-info,name,...
2   //           EXEC PROC=STCPOSTD,...     [ see below ]
3   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOSTD OS/VS JCL procedure be executed. Additional parameters on the EXEC card define the device type, volume serial number, and data set name for the LOGREC data set.

3. This card indicates the end of the job JCL deck.

The LOGREC data set is specified by additional parameters on card 2 of the JCL deck. The following example shows the format of card 2:

```
// EXEC PROC=STCPOSTD,U=disk,V=volser[,DS='dsname'[,TEST=x]]
```

NOTE

1. This job requires that the STCPOSTD OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. See the Basic OS/VS JCL section for the descriptions of disk, tape, etc.

3. See the STCPOST OS/VS JCL Procedure Parameters section for a description of the TEST parameter.

STARTING THE STCPOSTD PROCEDURE AT THE OPERATOR'S CONSOLE

The following START command is used to start the STCPOSTD Procedure at an OS/VS system console.

```
S STCPOSTD,U=disk,V=volser[,DS='dsname'[,TEST=x]]
```

NOTE

1. This OS/VS operator START command requires that the STCPOSTD OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. OS/VS1 operating systems require that the partition number be specified after STCPOSTD, i.e. 'S STCPOSTD.Pn,...', where n is the partition number.

3. If the DS parameter is specified, the data set name must be entered in upper case.

4. See the Basic OS/VS JCL section for the descriptions of disk, tape, etc.

5. See the STCPOSTD OS/VS JCL Procedure Parameters section for the description of the TEST parameter.

THE STCPOSTO OS/VS JCL PROCEDURE

The STCPOSTO OS/VS JCL procedure is used when testing offline devices. No test devices are defined by this procedure. All test devices must be defined via the DEFINE function.

The STCPOSTO procedure can be executed by either a batch job, or by using the OS/VS START command. When this procedure is used, the Control Card Editor is always invoked and the control cards must be defined at the operator's console.

STCPOSTO OS/VS JCL PROCEDURE PARAMETERS

The STCPOSTO OS/VS JCL procedure has a single parameter which is used to specify the control card set to be used. This parameter is described below.

TEST PARAMETER

The TEST parameter specifies the control card set name or number that the Control Card Editor will supply. If this parameter is not specified, the Control Card Editor will allow the control cards to be defined at the operator's console. Refer to Chapter 9, The Control Card Editor.

USING THE STCPOSTO PROCEDURE IN A BATCH JOB

The following JCL is used to execute the STCPOSTO Procedure in a batch job.

```
1   //jobname  JOB  acct-info,name,...
2   //           EXEC PROC=STCPOSTO [,TEST=x ]
3   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOSTO OS/VS JCL procedure be executed.

3. This card indicates the end of the job JCL deck.

NOTE

1. This job requires that the STCPOSTO OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. See the STCPOST OS/VS JCL Procedure Parameters section for a description of the TEST parameter.

STARTING THE STCPOSTO PROCEDURE AT THE OPERATOR'S CONSOLE

The following START command is used to start the STCPOSTO Procedure at an OS/VS system console.

```
S STCPOSTO [,TEST=x ]
```

NOTE

1. This OS/VS operator START command requires that the STCPOSTO OS/VS JCL procedure be installed in SYS1.PROCLIB or a similar procedures library.

2. OS/VS1 operating systems require that the partition number be specified after STCPOSTO, i.e. 'S STCPOSTO.Pn,...', where n is the partition number.

3. See the STCPOST OS/VS JCL Procedure Parameters section for a description of the TEST parameter.

CHAPTER 7

STCPOST DOS/VSE JOB CONTROL LANGUAGE

STCPOST may only be executed using the DOS/VSE batch job JCL. The basic DOS/VSE JCL defines the test device(s) and the control card input. The test devices are defined by the logical units SYS001 through SYS008. The file names are SYSUT1 through SYSUT8. These file names are permanently associated with the corresponding logical units.

THE BASIC DOS/VSE JCL

The following JCL is used to execute STCPOST on a DOS/VSE operating system.

```
1   // JOB     jobname
2   // ASSGN   ...                [Test Device                  ]
2   // DLBL    ...                [     Definition Cards       ]
2   // EXTENT  ...                [                    See Below]
3   // ASSGN   SYS009,X'aaa'
3   // DLBL    CCLIB,'STCPOST.CCLIB',0,SD
3   // EXTENT  ,vvvvvv,1,0
4   // ASSGN   SYS010,X'aaa'
4   // DLBL    CCDEF,'STCPOST.CCDEF',0,SD
4   // EXTENT  ,vvvvvv,1,0
5   // EXEC    STCPOST,SIZE=AUTO
6    [ STCPOST Control Cards ] [Include if the Control Card]
                               [Editor is not to be invoked]
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. These cards define the test device(s).

3. These cards define the Control Card Editor data set, and must be included if the Control Card Editor is to be used. The device address and volume serial number must be changed to indicate the volume that the data set was allocated on. See the section 'Initialize the Control Card Editor data set' in Chapter 5.

4. These cards define the Default Control Card data set, and must be included if the Control Card Editor is to be used. The device address and volume serial number must be changed to indicate the volume that the data set was allocated on. See the section 'Initialize the Default Control Card data set' in Chapter 5.

5. The EXEC card requests that the program STCPOST be executed.

6. One or more STCPOST control cards must be entered here if the Control Card Editor is not to be invoked.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

TEST DEVICE DEFINITION

One to eight test devices may be defined dependent upon which STCPOST functions are to be executed. STCPOST equates the OS/VS ddnames SYSUT1 through SYSUT8 to the DOS/VSE logical units SYS001 through SYS008.

DISK DEVICE DEFINITION

STCPOST disk functions use the equivalent of the OS/VS type 0, 1, and 2 DD cards.

1. DD type 0

   A DD type 0 device is defined via the DEFINE function. No ASSGN, EXTENT, or DLBL cards are included in the JCL. See the DEFINE function in Chapter 10.

2. DD type 1

   A DD type 1 device is defined via the DEFINE function. No ASSGN, EXTENT, or DLBL cards are included in the JCL. See the DEFINE function in Chapter 10.

3. DD type 2

   Three cards are required to define a DD type 2 device:

```
//   ASSGN  SYS00n,X'aaa'
//   DLBL   SYSUTn,'dsname',0,SD
//   EXTENT SYS00n,,1,0,loc,numb
```

where n is the device number (1 through 8), aaa is the device address, dsname is the data set name (can be any name), loc is the location of the first track to allocate and numb is the number of tracks to allocate. loc is calculated using the following formula (all numbers are decimal):

loc = ((cyl numb) X (numb trks per cyl) + (head numb))

For example, cylinder 2A head 12 on a 3350 type device is track location 1278 ((42) X (30) + (18)).

TAPE DEVICE DEFINITION

All STCPOST tape functions use the equivalent of the OS/VS type 5 DD card. One card is required to define a tape device:

```
// ASSGN SYS00n,X'aaa'
```

where n is the device number (1 through 8) and aaa is the device address.

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CHAPTER 8

STCPOST SYNTAX AND CODING RULES

CONTROL CARD CODING

Control cards direct the activity of STCPOST. These cards specify which function or functions to execute and which program or function options to use.

Control cards are coded in 80 byte card images. STCPOST processes only columns 1 through 72; columns 73 through 80 are ignored and can contain any data.

Each control card begins with the name of the function to be executed followed by none, one, or more than one function parameter. The function name is separated from the first function parameter (if one is specified) by one or more blanks, a comma, or a combination of blanks and a comma. Additional parameters (if any) are separated in the same manner as the function name and the first parameter.

Function parameters can be continued onto the next control card by coding a blank followed by a dash or a comma followed by a dash before or in columns 71 and 72. Any data after the dash is treated as a comment. A function name or parameter can not be split across cards.

Any data to the right of an asterisk (*) is treated as a comment unless the asterisk is enclosed within quote marks. If the asterisk is in column 1, the entire card is treated as a comment.

Parameters may be enclosed within quote marks. If a parameter contains a blank, comma, asterisk, or quote, the parameter MUST be enclosed within quote marks. Parameters that contain a dash do not need to be enclosed within quotes unless the character immediately preceding the dash is a comma or blank (indicating continuation). If the parameter contains a quote mark, it MUST be represented by two quote marks.

Parameters may contain a list of subparameters. This list must be enclosed within parenthesis. The subparameters within the list are seperated from each other by one or more blanks, a comma, or a combination of blanks and a comma. The parameter name must be immediately followed by an equal sign and a left parenthesis ('=('). A sublist may be continued onto the next

control card by coding a blank followed by a dash. Comments may be included on a card after the continuation character (dash).

Examples

```
VOLUME=(  ABCDEF,123456 xyaay1  )

VOLUME=(    - this is a comment
ABCDEF -  another comment
123456   ,-  yet another comment
)

VOLUME=('AB*CDE' 'TAPE 1')
```

CONTROL CARD EXAMPLES

The following are examples of valid control cards.

```
1.  VOLSCAN SUMMARY

2.  VOLSCAN, SUMMARY CECYL

3.  VOLSCAN SUMMARY, CECYL

4.  WRTREAD SUMMARY - THIS IS A COMMENT
    IOLIMIT=1000,HLIMIT=03 - ANOTHER COMMENT
    BLKSIZE=32 * MORE COMMENTS

5.  WRTREAD ,- THIS IS A COMMENT
      IOLIMIT=2000 * AND THIS IS ALSO A COMMENT

6.  OPTION TITLE='* BUT THIS IS NOT A COMMENT'

7.  OPTION TITLE='THIS TITLE CONTAINS * , -  AND BLANKS'

8.  OPTION TITLE='AND SO DOES THIS ONE * , - '

9.  OPTION TITLE='AND THIS ONE CONTAINS A QUOTE '' MARK'

10. VOLSCAN CLIMIT=000-001  * THIS ONE DOES NOT REQUIRE QUOTES
```

STCPOST FUNCTION SYNTAX

The following symbols must be coded as they appear in the syntax format:

- Equal Sign =
- Parenthesis ( )

- Single Quote '
  If a single quote is to be used within a parameter surrounded by quotes, then two quotes must be used:

  Example: 'this is a ''quote'' within'

The following symbols define the syntax presented in this manual:

NOTATION	DESCRIPTION
Abbreviations	Where abbreviation of a name is permitted, the abbreviated version is represented by uppercase letters. If the abbreviation is not a truncation, it appears on a separate line under the fully spelled parameter. Example: KEYword KEY and KEYWORD are acceptable. Example: PARAMETER PRM PRM and PARAMETER are acceptable.
Bar |	Separates mutually exclusive parameters or alternative parameter values. Example: a|b Selection of a or b is required.
Brackets [ ]	Indicate an option which may be omitted entirely. Example: [A|B|C] Select A, B, or C or omit the choices altogether.
Ellipsis ...	Indicates that entries may be repeated as often as necessary. Example: SOMETHING=aaa1,aaa2...

NOTATION	DESCRIPTION
Lower Case Letters	Indicate a parameter must be substituted. The parameter may be entered in either upper or lower case. Example: XX=yyyyy A value must be supplied for yyyyy.
Quotes	A parameter containing blanks, commas, dashes, or asterisks must be contained within single quotes. If a quote is included as part of the parameter two quotes must be used. Example: 'THIS CONTAINS A QUOTE '' MARK'
Upper Case Letters	Indicate that the entry must be spelled exactly as shown. The parameter may be entered in either upper or lowercase. Example: ACTIVE The word 'active' must be spelled out.
Underscore	Indicates the system default. If no parameter is entered, the system supplies the underscored value. Example: A|B|C If neither A,B, nor C is selected, C will be the default.

FUNCTION CARD DESCRIPTION EXAMPLES

1. WRTREAD [IOLIMIT=n]

   WRTREAD must be coded as shown; IOLIMIT is an optional parameter and if specified, must be coded as shown; n must be replaced with a valid value for the IOLIMIT parameter.

2. TRKDUMP TRACK=ccc.hh
   [NUMBER=n]

   TRKDUMP must be coded as shown; TRACK is a required parameter and must be coded as shown; ccc.hh must be replaced with a valid value as defined for the TRACK parameter; NUMBER is

an optional parameter and if specified, must be coded as shown; n must be replaced with a valid value for the NUMBER parameter.

3. OPTION [NOIOSTAT|IOSTAT]

   OPTION must be coded as shown; NOIOSTAT|IOSTAT is an optional parameter. Either NOIOSTAT or IOSTAT may be coded, but NOIOSTAT and IOSTAT can not be coded together. If either is specified, it must be coded as shown. If neither is coded, the default will be chosen as specified for the parameter.

4. CONFIG CHannels n ...
   [CPU n]

   CONFIG must be coded as shown. The CHannels parameter is required and may be coded as : CH, CHA, CHAN,..., CHANNEL. The CHannels parameter must be followed by one or more valid values (n). The CPU parameter is optional and if specified, must be coded as shown. The CPU parameter must be followed by a single value n; n must be replaced with a valid value for the CPU parameter.

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CHAPTER 9

THE CONTROL CARD EDITOR

The STCPOST Control Card Editor is used to generate a control card set for STCPOST to process. The editor generates two control card sets: the active set and the alternate set. Each set may contain 1 to 16 card images. The active set is the cards that STCPOST processes when the editor ends.

The editor is invoked by STCPOST if:

- The control card input data set (SYSIN OR SYSIPT) is not defined.
- The TEST parameter of an OS/VS JCL procedure is used. The control card input data set is ignored even if defined.
- The TEST parameter of the SAE START or RESTART command is used. The control card input data set is ignored even if defined.
- Option NOTERMINATE is in effect.

If the control card input data set is not defined and the TEST parameter is not used, the editor displays the active control card set on the operator's console. Commands can be entered at the console (using reply commands) to edit or change the control card set.

If the TEST parameter of an OS/VS JCL procedure or the TEST parameter of the SAE START or RESTART command is used, the editor supplies the specified control card set. In this mode, the editor does not display any messages on the operator's console.

Table 9-1 shows the actions of STCPOST and the editor for the different values of the TEST parameter.

NOTE

The TEST parameter is not used on DOS/VSE systems. Only the "TEST parm not used" entry of the table is valid for DOS/VSE systems.

Table 9-1. STCPOST Control Card Editor TEST Parameter

	SYSIN/SYSIPT DEFINED	SYSIN/SYSIPT NOT DEFINED
TEST parm not used	SYSIN/SYSIPT is used	The editor is invoked, displays the active control card set on the operator's console and allows changes to be entered at the operator's console. See "Control Card Editor Operation", below.
TEST parm specifies *	SYSIN is ignored	The active control set is supplied to STCPOST. No messages are displayed on the operator's console.
TEST parm specifies x	SYSIN is ignored.	The Prompt facility of the editor is used to supply the specified control card as is. No messages are displayed on the operator's console.
TEST parm specifies n	SYSIN is ignored.	The specified user defined default control card set is supplied. No messages are displayed on the operator's console.

CONTROL CARD EDITOR OPERATION

The Control Card Editor has facilities that allows control cards to be created, edited, or prompted at the operator's console. The editor retains two sets of control cards between executions of STCPOST. The control card sets are kept in the control card data set. The active control card set is one to sixteen cards which are to be processed by STCPOST. The alternate control card set is also one to sixteen cards. The active and alternate sets can be swapped, or the active can be saved into the alternate, or the alternate can be restored into the active using the edit facility of the Control Card Editor.

When the Control Card Editor is invoked, it will display the active control card set and ask which one of four actions is to be taken:

1. use the active control card set as is,

2. create a new active control card set,

3. edit the active or alternate control card set using the edit facility, or

4. create a new active control card set using the prompt facility.

CONTROL CARD CREATION FACILITY

The control card creation facility is used to create a new active control card set. The active control card set, displayed by the Control Card Editor when it was invoked, will be replaced by the control card set which is entered at the operator's console.

CONTROL CARD CREATION EXAMPLE

This example demonstrates the use of the control card create facility. The active control card set will be replaced by a new set of control cards entered at the operator's console. These new control cards become the active control card set. An '*' to the left of the line indicates a line entered at an OS/VS or SAE operator's console (the response at a DOS/VSE operator's console will have a similar format):

```
      STC#22 CONTROL CARDS--
             01 OPTION,TESTRC=12
             02 WRTREAD,IOLIMIT=1500
             03 VOLSCAN,SUMMARY
      STC#27 NO ALTERNATE CONTROL CARDS SAVED
    0 STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
*   0,Y
    1 STC#24 ENTER CONTROL CARD 01 OR 'END'
*   1,WRTREAD SEQUENTIAL
      STC#25 CC 01 ACCEPTED
    2 STC#24 ENTER CONTROL CARD 02 OR 'END'
*   2,TRKDUMP TRACK=123.01,NUMBER=2
      STC#25 CC 02 ACCEPTED
    3 STC#24 ENTER CONTROL CARD 03 OR 'END'
*   3,END
      STC#22 CONTROL CARDS--
             01 WRTREAD SEQUENTIAL
             02 TRKDUMP TRACK=123.01,NUMBER=2
      STC#27 NO ALTERNATE CONTROL CARDS SAVED
    4 STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
```

CONTROL CARD EDIT FACILITY

The control card edit facility is used to edit the active or alternate control card set. The control card edit facility accepts the following commands:

1. Commands which save, restore, swap, or list the active or alternate control card sets:

   GET n -- get default control card set n, where n is a value from 0 to 9.
   L -- list the active control card set.
   LA -- list the alternate control card set.
   R -- restore the alternate control card set to the active control card set.
   S -- save the active control card set (create an alternate control card set).
   SWAP -- swap the active and alternate control card sets.

2. Commands which alter the current line within the active control card set (the card which is displayed by message STC#56):

   C /t1/t2/ -- change the first occurrence of the text t1 (on the current line) to the text t2 (the / can be any character which is not contained in either t1 or t2).
   DEL [n] -- delete n* lines starting with the current line.
   DUP [n] -- duplicate the current line n* times.
   INS -- insert cards following the current line.
   INSB -- insert cards before the current line.
   REP -- replace the current line.

   * -- The optional parameter n is a single digit from 1 to 9. If omitted, the default is 1.

3. Commands which change the position of the current line within the active control card set (the card which is displayed by message STC#56):

   B -- move to the bottom line.
   D [n] -- move down n* lines.
   T -- move to the top line.
   U [n] -- move up n* lines.

   * -- The optional parameter n is a single digit from 1 to 9. If omitted, the default is 1.

CONTROL CARD EDIT EXAMPLE

This example demonstrates the use of the control card edit facility. The active control card set will be modified, saved as an alternate control card set, and modified again. The active and alternate control card sets will also be listed. An '*' to the left of the line indicates a line entered at an OS/VS or SAE operator's console (the response at a DOS/VSE operator's console will have a similar format):

```
      STC#22 CONTROL CARDS--
             01 OPTION,TESTRC=12
             02 WRTREAD,IOLIMIT=1500
             03 VOLSCAN,SUMMARY
      STC#27 NO ALTERNATE CONTROL CARDS SAVED
    4 STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
  * 4,E
      STC#56 01 OPTION,TESTRC=12
    5 STC#52 ENTER EDIT COMMAND OR 'END'
  * 5,C /TESTRC=12/DDNAME=SYSUT2/
      STC#56 01 OPTION,DDNAME=SYSUT2
    6 STC#52 ENTER EDIT COMMAND OR 'END'
  * 6,D
      STC#56 02 WRTREAD,IOLIMIT=1500
    7 STC#52 ENTER EDIT COMMAND OR 'END'
  * 7,DEL
      STC#56 02 VOLSCAN,SUMMARY
    8 STC#52 ENTER EDIT COMMAND OR 'END'
  * 8,S
      STC#56 02 VOLSCAN,SUMMARY
    9 STC#52 ENTER EDIT COMMAND OR 'END'
  * 9,REP
    0 STC#58 ENTER CARD
  * 0,VOLSCAN,RANDOM
      STC#56 02 VOLSCAN,RANDOM
    1 STC#52 ENTER EDIT COMMAND OR 'END'
  * 1,L
      STC#62 ACTIVE CONTROL CARDS--
             01 OPTION,DDNAME=SYSUT2
             02 VOLSCAN,RANDOM
      STC#56 02 VOLSCAN,RANDOM
    2 STC#52 ENTER EDIT COMMAND OR 'END'
  * 2,LA
      STC#63 ALTERNATE CONTROL CARDS--
             01 OPTION,DDNAME=SYSUT2
             02 VOLSCAN,SUMMARY
      STC#56 02 VOLSCAN,RANDOM
    3 STC#52 ENTER EDIT COMMAND OR 'END'
  * 3,END
      STC#22 CONTROL CARDS--
             01 OPTION,DDNAME=SYSUT2
```

```
          03 VOLSCAN,RANDOM
    STC#26 ALTERNATE CONTROL CARDS SAVED
 4  STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
```

CONTROL CARD PROMPT FACILITY

The prompt facility can supply one of the default control card sets or one of the prompt facility control card sets. The control card set number or name is specified by the TEST= parameter in the JCL, the TEST= parameter of the SAE START or RESTART command, or when the prompt facility is entered.

SPECIFYING A DEFAULT CONTROL CARD SET

The default control card sets are defined by the user and are identified by a single digit (0 though 9). See the section 'Initialize the Default Control Card data set' in Chapters 4 and 5.

SPECIFYING A PROMPT CONTROL CARD SET

The prompt control card sets are defined by a 1 to 16 character name. Appendix B lists the complete control card image for each of these control card sets. The valid names are:

```
ASSIGNDA * -- ASSIGNDS AUTOMATIC
ASSIGNDI   -- ASSIGNDS INSPECT
ASSIGNDM * -- ASSIGNDS MANUAL
CONFIG     -- CONFIG  (INTERACTIVE MODE)
CONFIGALL  -- CONFIG ALL    (BATCH MODE)
CUTRACE    -- CONTROL UNIT TRACE
DIAG       -- DIAGNOSTIC (BATCH MODE)
DIAGOPER   -- DIAGNOSTIC (INTERACTIVE MODE)
FORMAT   * -- FORMAT-4305
FRIEND     -- FRIEND FUNCTION
MODECHG  * -- MODE-CHANGE
TRKDUMP  * -- TRACK-DUMP
UNASSIGN * -- UNASSIGN
VOLSCAN    -- STANDARD VOLSCAN
VOLSCANP   -- PROMPT VOLSCAN
VOLSCANR   -- VOLSCAN RANDOM
WRDISK     -- WRITE-READ DISK (MULTI-DEVICE)
WRDISKP    -- PROMPT WRITE-READ DISK (MULTI-DEVICE)
WRDISKS    -- WRITE-READ DISK SEQUENTIAL (MULTI-DEVICE)
WRTAPE     -- WRITE-READ TAPE (MULTI-DEVICE)
WRTREAD    -- STANDARD WRTREAD
WRTREADP   -- PROMPT WRTREAD
WRTREADS   -- WRTREAD SEQUENTIAL
```

```
WR4305      -- STANDARD WR4305
WR4305P     -- PROMPT WR4305
WR4305S     -- WR4305 SEQUENTIAL
```

* - This control card should not be used with the TEST parameter because the control card set contains function parameters that do not have default values.

The control card prompt facility will ask if all parameters are to be prompted (respecified). If the reply is YES, all the control card parameters can be respecified. If the reply is NO, only those parameters that do not have a default value can be respecified.

The prompt facility will then ask for the value of each function control card parameter which can (or must) be specified. The parameter value is entered at the operator's console. If the parameter has an equal sign (=), the value entered will replace the value to the right of the equal sign. Otherwise, the value entered will replace the entire card. A null reply (blanks) replaces the entire card with a blank card.

Table 9-2 shows the resulting parameter value used for the various combinations of parameter types and responses at the operator's console.

Table 9-2. Control Card Prompt Facility

Type of parameter	Response	Resulting parameter value
a parameter with no default value	dash (-)	invalid response
	new value	the new value is used
	blank ( )	the parameter is removed
a parameter with a default value	dash (-)	the default is used
	new value	the new value is used
	blank ( )	the parameter is removed

If the control card prompt facility is entered by specifing the TEST parameter of an OS/VS JCL procedure, x must be one of the valid names of the control card sets. All parameters in the control card set which do not have a default value will be replaced by a comment card in the control card set.

CONTROL CARD PROMPT EXAMPLE

This example demonstrates the use of the control card prompt facility. The active control card set will be replaced by a single control card image which spans several cards. A parameter value will be entered for any parameter which does not have a default value. An '*' to the left of the line indicates a line entered at an OS/VS or SAE operator's console (the response at a DOS/VSE operator's console will have a similar format):

```
     STC#22 CONTROL CARDS--
            01 OPTION,TESTRC=12
            02 WRTREAD,IOLIMIT=1500
            03 VOLSCAN,SUMMARY
     STC#27 NO ALTERNATE CONTROL CARDS SAVED
   0 STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
*  0,P
   1 STC#11 ENTER CONTROL CARD NAME OR 'END'
*  1,TRKDUMP
   2 STC#12 PROMPT FOR ALL PARAMETERS--Y OR N
*  2,N
     STC#33 TRKDUMP,-
     STC#35  TRACK=CCC.HH,-
   3 STC#37 ENTER PARAMETER VALUE (THERE IS NO DEFAULT)
*  3,123.00
     STC#34  NUMBER=1,-
     STC#34  DATAFMT=R,-
     STC#34  ELIMIT=100
     STC#22 CONTROL CARDS--
            01 TRKDUMP,-
            02  TRACK=123.00,-
            03  NUMBER=1,-
            04  DATAFMT=R,-
            05  ELIMIT=100
     STC#27 NO ALTERNATE CONTROL CARDS SAVED
   4 STC#23 CHANGE CONTROL CARDS--E OR P OR Y OR N
```

CHAPTER 10

STCPOST FUNCTIONS

This chapter describes the STCPOST functions and parameters.

FUNCTION DESCRIPTION FORMAT

The function format is as follows:

Function	Required Parameters	Optional Parameters

The first column lists the function name; the second column, the required parameter(s); and the third column, the optional parameter(s).

ASSIGN

The ASSIGN function is used to assign an alternate track for a defective data track on 3330 or 3350 type devices or to flag an alternate track as a defective alternate. The assignments are unconditional.

Function	Required Parameters	Optional Parameters
ASSIGN	TRACK=ccc.hh	

Required Parameters

TRACK=ccc.hh
Specifies the address of the track for which an alternate is to be assigned. ccc and hh are hexadecimal numbers. Valid values are:

DEVICE TYPE	ccc LIMITS	hh LIMITS
3330-1	000 - 19A	00 - 12
3330-11	000 - 32E	00 - 12
3350	000 - 22F	00 - 1D

NOTE

This funtion should not be used to assign alternate tracks except as a last resort.

Operation Considerations

The ASSIGN function does not update the alternate track information in the FORMAT 4 DSCB of the Volume Table of Contents (VTOC).

- The ASSIGN function requires a DD card type 2, 3 or 4.
- The ASSIGN function can not be executed using the OS/VS JCL procedure in batch mode.
- The track specified by the TRACK parameter must be within the dataset defined by the test device DD card or an unassigned alternate track.
- This function forces the NOLOG parameter of the OPTION function while it is executing.

Operation Examples

The following examples show how to execute the ASSIGN function using the basic OS/VS JCL and the basic DOS/VSE JCL.

Example 1

This example uses the basic OS/VS JCL to execute the ASSIGN function on a 3350 DASD volume with volume serial STC905. An alternate track is to be assigned for cylinder 107 head 03.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC905,
5   //           SPACE=(ABSTR,(1,7893))
6   //SYSIN    DD *
7    ASSIGN TRACK=107.03
8   //
```

Following is a description of each card in the job for Example 1.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC905.

5. The SPACE=(ABSTR,(1,7893)) defines this as a type 2 DD card (write functions on a temporary dataset).

6. The SYSIN DD card describes the control card input file.

7. This STCPOST control card indicates that the ASSIGN function is to assign an alternate track for track 107.03.

8. This card indicates the end of the job JCL deck.

Example 2

This example uses the basic DOS/VSE JCL to execute the ASSIGN function on a 3350 DASD volume at address 236. An alternate track is to be assigned for cylinder 3 head 07.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'122'
3   // DLBL SYSUT1,'BAD TRACK',0,SD
```

```
4   // EXTENT SYS001,,1,0,97,1
5   // EXEC STCPOST,SIZE=AUTO
6    ASSIGN TRACK=003.07
7   /*
8   /&
```

Following is a description of each card in the job for Example 2.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 122.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of BAD TRACK.

4. The EXTENT card defines the location of the dataset as starting at track 97 (cylinder 3 head 07) for one track.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the ASSIGN function is to be executed to assign an alternate track for cylinder 3 head 07.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

ASSIGNDS

The ASSIGNDS function changes the defect skip information for a track on a 3350 type device operating in native mode.

Function	Required Parameters	Optional Parameters
ASSIGNDS	AUTOMATIC TRACK=ccc.hh	
ASSIGNDS	INSPECT	HLIMIT=hh NPASS=n SUMMARY
ASSIGNDS	SKIP=dddd.dddd.dddd TRACK=ccc.hh	

Required Parameters

AUTOMATIC
Specifies that ASSIGNDS is to execute in automatic mode. AUTOMATIC must be specified to invoke the automatic mode of operation.

In automatic mode, ASSIGNDS tests the track and determines the new defect skip information. The track is tested a total of 2048 times. If an error occurs in a pattern, that pattern is retried. Each error is logged in the error table. If an error repeats within -20 to +20 bytes of the same location, it is skipped. After an error is skipped, testing starts at the beginning.

If a track encounters more than three defects, the skip information is set to zero and testing is again started. If more than three defects are again found, the skip information is set to the initial values and a message is issued to indicate that the track is probably unusable.

INSPECT
Specifies that ASSIGNDS is to execute in inspect mode. INSPECT must be specified to invoke the inspect mode of operation.

In inspect mode, every track in the allocated dataset is tested up to the number of times defined by the NPASS parameter. If a 4x or 5x error occurs on a track, that track is then tested in automatic mode.

SKIP=dddd.dddd.dddd
Defines the new defect skip information for the track being tested in manual mode. dddd is a four digit hexadecimal number and specifies the actual defect skip displacement data. dddd.dddd.dddd defines the defect skip displacements for ds3.ds2.ds1. There is no default for SKIP; it is required if ASSIGNDS is operating in the manual mode.

TRACK=ccc.hh
Defines the track to be tested in either manual or automatic mode. ccc is a three digit hexadecimal number between 000 and 22F. hh is a two digit hexadecimal number between 00 and 1D. There is no default for TRACK; it is required if ASSIGNDS is operating in either manual or automatic mode.

Optional Parameters

HLIMIT=hh
Defines the single head within the dataset that is to be tested in inspect mode. hh is a two digit hexadecimal number between 00 and 1D. The default is to test all heads in the dataset.

NPASS=n
Specifies the maximum number of times to test each track in the dataset in inspect mode. Each track will be tested until either a Format 43 or Format 53 error is encountered, or the number of passes specified is completed. n is a decimal number between 1 and 99. The default value for n is 5.

SUMMARY
Specifies that message STC575 is to be written to the operator's console, as well as to the STCPOST output. Message STC575 is issued in INSPECT mode after every 2048 tracks have been tested, and indicates to the user that the ASSIGNDS function is operating. The track under test is also indicated.

Operation Considerations

- The ASSIGNDS function requires a DD card type 2, 3, or 4.
- Only the INSPECT mode of operation can be used with the OS/VS JCL procedure in batch mode.

- The defect skip information can not be changed on a defective primary or a defective alternate track.
- The defect skip information can not be changed under VM/370 unless the device is dedicated (attached) to the VM/370 virtual machine.
- This function forces the NOLOG parameter of the OPTION function while it is executing (refer to the STCPOST REFERENCE MANUAL SE-001 for a description of the OPTION function).

Operation Examples

The following examples show how to execute the ASSIGNDS function, the basic OS/VS JCL, the OS/VS JCL procedure in batch mode, and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the ASSIGNDS function in manual mode on a 3350 type DASD volume with volume serial STC001. The defect skip information for cylinder 63, head 08 is changed to 0000.0000.1234.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC001,
5   //              SPACE=(ABSTR,(1,2978))
6   //SYSIN    DD *
7    ASSIGNDS TRACK=063.08 SKIP=0000.0000.1234
8   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.
2. The EXEC card requests that the program STCPOST be executed.
3. The SYSPRINT DD card describes the printed output file as class A output.
4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC001.
5. This card is a continuation of the SYSUT1 DD card. The SPACE=(ABSTR,(1,2978)) defines this as a type 2 DD card (write functions on a temporary dataset at cylinder 063, head 08.

6. The SYSIN DD card describes the control card input file.

7. This STCPOST control card indicates that the ASSIGNDS function is to be executed with the TRACK and SKIP parameters.

8. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the ASSIGNDS function in inspect mode on a 3350 type DASD volume with volume serial STC002. The defect skips are assigned as needed on a 10 cylinder dataset starting at cylinder 30.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC002,
3   //           T=ABSTR,S='300,900',TEST=ASSIGNDI
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC002.

3. This card is a continuation of the EXEC card. The T=ABSTR and S='300,900' indicates that a type 2 DD card (write functions on a temporary dataset) is to be used for this device. The TEST= indicates that the ASSIGNDI control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the ASSIGNDS function in automatic mode on a 3350 type DASD volume at address 120. The defect skips are automatically assigned (if necessary) to cylinder 12A, head 1C.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'120'
3   // DLBL SYSUT1,'DEFECT TRACK',0,SD
4   // EXTENT SYS001,,1,0,8968,1
5   // EXEC STCPOST,SIZE=AUTO
6    ASSIGNDS AUTOMATIC TRACK=12A.1C
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 120.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of DEFECT TRACK.

4. The EXTENT card defines the location of the dataset as starting at track 8968 (cylinder 12A head 1C) for one track.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the ASSIGNDS function is to be executed with the AUTOMATIC and TRACK parameters.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

CONFIG

The CONFIG function is used to verify system device addressing.

Function	Required Parameters	Optional Parameters
CONFIG	CHannels nn...| DEVices nnnn...	CPU n
CONFIG		ALL

Required Parameters

CHannels nn...|DEVices nnnn...
The CHannels parameter defines the channel(s) to be tested. The channel number(s) are coded following the CHannels parameter and may be a single channel, a range of channels or a combination of both. A channel number may be one or two hexadecimal digits.

The DEVices parameter defines the devices to be tested. The device number(s) are coded following the DEVices parameter and may be a single device, a range of devices or a combination of both. A device number may be three or four hexadecimal digits.

Optional Parameters

ALL
The ALL parameter specifies that all devices on all channels of all CPUs are to be tested.

CPU n
The CPU parameter defines the processor (in a multiple processor system) to which the channel or device to test is attached. This parameter must be specified if CONFIG is executed on an AP/MP or dyadic system and either CHannels or DEVices is specified.

Operation Considerations

The CONFIG function operates in two modes: batch and interactive.

The CONFIG function can only be executed when STCPOST is running with the Stand-Alone Executive and only when SAE is executing on a CPU in System 370 mode.

Batch Mode

In batch mode, the channels or devices to be tested and the cpu to which they are attached (if multi-processor) are defined on the CONFIG control card. If channels are specified, CONFIG tests all addresses on the channels and reports the addresses that responded with other than condition code 3 (not operational). In addition, not ready devices and devices currently defined to the Stand-Alone Executive are flagged. Devices that are ready are tested, and the device type (if determined) is displayed. For DASD devices, the volume serial number and VTOC location is also displayed. If devices are specified, CONFIG tests all the device addresses specified and reports the responses. Devices responding with condition code 3 (not operational), not ready devices and devices currently defined to the Stand-Alone Executive are flagged. Devices that are ready are tested, and the device type (if determined) is displayed. For DASD devices, the volume serial number and VTOC location is also displayed.

Interactive Mode

In interactive mode, the channels to test and the CPU to which they are attached (if multi-processor) are entered at the operator's console. CONFIG tests all addresses on the channels and reports the addresses that responded with other than condition code 3 (not operational). In addition, not ready devices and devices currently defined to the Stand-Alone Executive are flagged. At this point, devices may be dropped from further testing. Devices that are ready (and were not dropped from testing) are tested, and the device type (if determined) is displayed. For DASD devices, the volume serial number and VTOC location is also displayed.

- The CONFIG function can only be executed under the STCPOST Stand-Alone Executive (SAE) in System 370 mode.
- When CONFIG is executed on a VM/370 Virtual Machine, the devices tested are the devices defined to the virtual machine and may not reflect the real devices (or their addresses) on the real CPU.
- The CONFIG function does not require a DD card for the test devices. Any devices that are defined to the Stand-Alone Executive or are used by the Stand-Alone Executive are not tested.
- If neither the DEVices, CHannels, nor ALL parameter is specified, CONFIG operates in the interactive mode.

- The CPU parameter can not be specified unless the DEVices or CHannels parameter is specified. If the DEVices or CHannels parameter is specified, the CPU parameter is required if CONFIG is executed on an AP/MP or dyadic system.

Control Card Examples

The following examples show how to code the CONFIG control card for various modes of operation.

- This control card specifies testing channels 1, 4, and 8 through B on cpu 2:

```
CONFIG CHAN 1 4 , 8-B CPU 2
```

- This control card specifies testing devices 4A0 through 4FF, 120, 253, and 8F0:

```
CONFIG DEVIC 4A0-4FF   120   253,8F0
```

- This control card specifies testing all devices on all channels on all cpus:

```
CONFIG ALL
```

- This control card allows entry of the cpu and channels to be tested at the operator's console:

```
CONFIG
```

CUTRACE

The CUTRACE function is used to print the control unit trace information collected by the control unit inlines of the StorageTeK 4000 or 8000 control unit.

Function	Required Parameters	Optional Parameters
CUTRACE	CUTYPE=xxxx	

Required Parameters

CUTYPE=xxxx
The CUTYPE parameter specifies the type of control unit against which the CUTRACE function is being executed. The valid values for xxxx are 4000 and 8000. There is no default for this parameter; it is required.

Operation Considerations

- The CUTRACE function requires a DD card type 1, 2, 3, or 4.
- CUTRACE requires that a control unit set-up routine be executed to collect the trace information before the function is executed.
- When executed on a VM virtual machine, the virtual machine must have Class F privileges.

Operation Examples

The following examples show how to execute the CUTRACE function using the basic OS/VS JCL, the OS/VS JCL procedure in batch mode and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the CUTRACE function on a 4000 control unit with a 4305 volume with volume serial number STC001 attached.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=2305-2,VOL=SER=STC001,SPACE=(TRK,0)
5   //SYSIN    DD *
6    CUTRACE CUTYPE=4000
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC001. The SPACE=(TRK,0) defines this as a type 1 DD card (read-only functions).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the CUTRACE function is to be executed on a 4000 control unit.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the CUTRACE function on an 8000 control unit with volume serial number STC002 mounted on one of the devices attached to the 8000.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC002,S=0,
3   //             TEST=CUTRACE
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC002. The S=0 indicates that a type 1 DD card (read-only functions) is to be used for this device.

3. This card is a continuation of the EXEC card and indicates that the CUTRACE control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the CUTRACE function on an 8000 control unit with a DASD volume at address 120 attached to the 8000.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'120'
3   // DLBL SYSUT1,'CUTRACE',0,SD
4   // EXTENT SYS001,,1,0,16620,1
5   // EXEC STCPOST,SIZE=AUTO
6    CUTRACE CUTYPE=8000
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 120.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of CUTRACE.

4. The EXTENT card defines the location of the dataset as starting at track 16620 (cylinder 22A head 00) for one track.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the CUTRACE function is to be executed on an 8000 control unit.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

DEFINE

The DEFINE function is used under OS/VS (VS1, MVS/370, and MVS/XA) to allocate offline devices and under DOS/VSE to assign unassigned devices for use by other STCPOST functions. The offline (unassigned) device address is equated to a ddname. Up to eight devices may be defined for a single execution of STCPOST. NOTE - The DEFINE function under DOS/VSE requires that VSE/AF be installed.

Function	Required Parameters	Optional Parameters
DEFINE		LIST
DEFINE	ADD ADDRess=aaaa DDName=SYSUTnnn DDType=n	FORCE

Required Parameters

If DEFINE is entered without any parameters, the current devices defined are listed.

ADD
Specifies this device is to be added to the current device definitions.

ADDRess=aaaa
Specifies the address of the device where aaaa is the four character (hex) device address. NOTE: The leading zero may be omitted when aaa is specified.

DDNAME=SYSUTnnn
Specifies the ddname this device is to be equated to. nnn is one to three decimal characters. The following ddnames are not equivalent (but are all valid): SYSUT1, SYSUT01, and SYSUT001. When STCPOST is executed on a DOS/VSE system, nnn must be a single digit 1 - 8.

DDType=n
Specifies DD card type to be simulated for this device. n must be 0, 1 or 5.

Optional Parameters

FORCE
The FORCE parameter specifies that the operator is not to be asked for confirmation to initialize or destroy the data on the device. Specifying this parameter implies confirmation.

LIST
The LIST parameter specifies that the current device definitions are to be listed.

Operation Considerations

1. OS/VS Operating Systems

   a) The device to be defined must be offline.

   b) The ddname to be equated must not be defined on a DD card.

   c) At least one functional path to the device must be online.

   d) It is the responsibility of the user to ensure that the device is ready. Neither the operating system nor STCPOST verifies that the device is ready.

2. DOS/VSE Operating Systems

   a) The DEFINE function requires that VSE/AF be installed.

   b) The device to be tested must not be defined by an ASSGN card.

   c) The ddname to be equated must not be defined on an ASSGN card.

DIAGNOSTIC

The DIAGNOSTIC function is used to execute the 3400 tape diagnostic tests on STC 3400, 3600, 4500, 4600, or 4800 tape subsystems, the 4000 SSD diagnostic tests on STC 4305 SSD subsystems, the 2500 printer diagnostic tests on STC/Documation MOD I, MOD II, or MOD VII printers, the 3380 diagnostics on STC 8380 disk subsystems, the 3350 diagnostics on STC 8350, 8360, and 8650 disk subsystems and, the 3800 diagnostics on the STC/Documation 6100 Laser Printer.

Function	Required Parameters	Optional Parameters
DIAGnostic	ALL|OPERator	OPTion option-list
DIAGnostic		DEVice device-list OPTion option-list TEST test-list

Required Parameters

ALL|OPERator
The ALL parameter causes all tests to be executed on all configured devices.

The OPERator parameter specifies that the device, test, and options lists will be entered at the operator's console. DIAGNOSTIC will prompt the user at the operator's console for the device, test, and options specifications. OPERATOR may be abbreviated OPER.

Optional Parameters

DEVice device-list
The DEVice parameter defines the device or devices to be tested. The device-list may be one or more:

DD names,
DD name ranges,
device addresses,
device address ranges,
or ALL.

ALL is equivalent to the DD name range SYSUT1-SYSUT8. A range is two device addresses separated by a dash or two DD names separated by a dash. The second entry in a range must be greater than the first entry of the range. A DD name must be SYSUT1, SYSUT2, ..., SYSUT8. A device

address may be either a three or four digit address. DEVICE may be abbreviated DEV. If not specified, the DEVICE parameter defaults to ALL.

The following are examples of valid DEVICE parameter specifications:

```
DEVICE SYSUT2 SYSUT4
DEV SYSUT3-SYSUT5 SYSUT1
DEVI 180-183 185
DEVIC SYSUT1-SYSUT2 145 SYSUT7 193-195
DEVICE ALL
```

The following are examples of invalid DEVICE parameter specifications:

```
DEVICE SYSUT9 SYSUT4                    (invalid DD name)
DEV SYSUT3-SYSUT1 SYSUT8                (invalid range)
DEVI 180-SYSUT2 185                     (invalid range)
DEVIC SYSUT1-199 145 SYSUT7 195-193 (invalid ranges)
```

OPTion option-list

The OPTion parameter defines the options to be used. One or more options may be specified. OPTION may be abbreviated OPT.

The following options may be specified:

EL|NOEL

The EL|NOEL option defines whether a test is to loop if an error occurs. EL=n specifies that looping is to occur where n is the number of times to loop and is a decimal number from 0 to 99999. NOEL specifies that no looping is to occur. The default for this parameter is NOEL.

EP|NOEP

The EP|NOEP option specifies whether errors are to be printed. EP specifies that errors are to be printed. NOEP specifies that errors are not to be printed. The default for this parameter is EP.

LOOP

The LOOP option defines the number of times that each test is to be executed. This option is entered in the form LOOP=n, where n is a decimal number from 1 to 99999. The default value for n is 1.

MI|NOMI
The MI|NOMI option specifies whether the manual intervention tests are to be run. MI specifies that they are to be run. NOMI specifies that they are not to be run. The default for this parameter is NOMI.

PARM
The PARM option specifies the test parameters to be used. This option is entered in the form PARM=x, where x is from 1 to 64 characters and will be submitted as PARMs to all tests specified. However, it will be ignored by routines that do not accept PARMs.

REPEAT
The REPEAT option defines the number of times that the entire test list is to be executed. This option is entered in the form REPEAT=n, where n is a decimal number from 1 to 99999. The default value for n is 1.

RESET
The RESET option resets all options to their default values.

SUMMARY
The SUMMARY option specifies that the START, END, and DROP messages for the diagnostic routines are to be printed at the operator's console when running in batch mode. These messages are normally printed when running in interactive (OPERATOR) mode. The default is SUMMARY for interactive mode, and no SUMMARY for batch mode.

TMTRACE|NOTMTRACE
The TMTRACE option specifies printing of a trace of the OLT transient manager. The default for this parameter is NOTMTRACE (no tracing of OLT transient manager calls).

TEST test-list
The TEST parameter defines the test(s) to be executed. The test-list may be one or more test names, test name ranges, or ALL. A test name is one to three alphabetic characters. ALL is equivalent to the test name range A-ZZZ. A range is two test names separated by a dash. The second entry in a range must be greater than the first entry of the range. If not specified, the TEST parameter defaults to TEST ALL. A test name may be followed by one or more routine numbers or a range of routine numbers. Routine numbers are a number between 1 and 16. A range of routine numbers is two numbers separated by a dash.

Routine numbers can not be specified after a test name range.

The following examples are valid TEST parameter specifications:

```
TEST A B
TEST D-H M
TEST A-C E
TEST A-B E J W-Z
TEST A 2 4-5 B 2 4 6
TEST ALL
```

The following are examples of invalid TEST parameter specifications:

```
TEST ABCD                (invalid test name)
TEST C-A M               (invalid range)
TEST B-E 2               (invalid routine number)
TEST A 5-3               (invalid routine range)
```

Operation Considerations

The DIAGNOSTIC function operates in two modes: batch and interactive. In batch mode, the devices to test and the tests to be executed, with the test options are defined on the DIAGNOSTIC function control card. In interactive mode, the devices, tests, and options to be executed are defined at the operator's console.

The SSD, and 3380 diagnostics are not available when STCPOST is running on DOS/VSE systems.

1. The DIAGNOSTIC function requires a DD card type 2, 3, 4, or 5.

2. The DIAGNOSTIC function requires a non-labeled tape volume when running the 3400 Tape Diagnostics. OS/VS standard label tapes will not be tested.

3. The TMTRACE option is a program debugging facility and should not be specified unless requested by a member of STC FE Software Support.

4. This function forces the NOLOG parameter of the OPTION function while it is executing (refer to STCPOST REFERENCE MANUAL-SE001 for a description of the OPTION function).

5. The tests in the test lists that are marked with an asterisk (*) are only executed when specified in the test list. They are not executed when TEST ALL is specifed.

2500 Diagnostic Tests

The diagnostic tests listed below are available for STC/Documation impact printers.

T2500A T2500B T2500C T2500D

3800 Diagnostic Tests

The diagnostic tests listed below are available for STC/Documation laser printers.

P3800A P3800X
P3800B P3800Y
P3800C P3800Z

3350 Diagnostic Tests

The diagnostic tests listed below are available for the 8350, 8360, and 8650 disk subsystems:

P3350MTT P3350PDT P3350SRH

3380 Diagnostic Tests

The diagnostic tests listed below are available for the STC 8380 disk subsystem:

*P3380DIA P3380PDT P3380SRH
*P3380MTR *P3380RPS *P3380TNC
P3380MTT

3400 Diagnostic Tests

The diagnostic tests listed below are available for the 3400, 3600, 4500, 4600, and 4800 tape subsystems.

T3400B T3400G T3400T
*T3400BUF T3400H T3400U
T3400C T3400K T3400V
T3400D P3400P *T3400CI
T3400E T3400R *T3400MD
T3400F T3400S

4000 Diagnostic Tests

The diagnostic tests listed below are available for the 4000/4305 SSD subsystem.

The following tests can be run only when STCPOST is executing under the STCPOST Stand-Alone Executive (SAE) on a real CPU (not a VM/370 virtual machine) and require one cylinder of the 4305 be available for testing:

T4000A	T4000G	*T4000V	*T4000X
T4000B	T4000S	*T4000W	*T4000Y

The following tests can be run when STCPOST is executing either with Stand-Alone-Executive or OS/VS and require one full cylinder of write space:

T4000C	T4000H	T4000L	T4000P	T4000U
T4000D	T4000I	T4000M	T4000Q	P4000MTT
T4000E	T4000J	T4000N	T4000R	P4000PDT
T4000F	T4000K	T4000O	T4000T	P4000SST

Operation Examples

The following examples show how to execute the DIAGNOSTIC function using the basic OS/VS JCL, and the OS/VS JCL procedure in batch mode.

Basic OS/VS JCL Example 1

This example uses the basic OS/VS JCL to execute the 4305 diagnostic tests P4000MTT and P4000PDT twice on a 4305 volume with volume serial STC001.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=2305-2,VOL=SER=STC001,SPACE=(CYL,1)
5   //SYSIN    DD *
6    DIAGNOSTIC DEVICE SYSUT1 TEST MTT PDT OPTION REPEAT=2
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC001. The SPACE=(CYL,1) defines this as a type 2 DD card (write functions on a temporary dataset).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the DIAGNOSTIC function is to be executed with the TEST and REPEAT parameters.

7. This card indicates the end of the job JCL deck.

Basic OS/VS JCL Example 2

This example uses the basic OS/VS JCL to execute the 3400 diagnostic tests on an offline tape drive at address 790.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSIN    DD *
5    DEFINE ADD DDNAME=SYSUT1 ADDRESS=790 DDTYPE=5
6    DIAGNOSTIC
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSIN DD card describes the control card input file.

5. This STCPOST control card indicates that the DEFINE function is to define device 790 as ddname SYSUT1 for DD type 5.

6. This STCPOST control card indicates that the DIAGNOSTIC function is to be executed.

7. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the DIAGNOSTIC function on a tape device at address 220. The list of tests to execute will be entered at the operator's console.

```
1  // JOB POSTTEST
2  // ASSGN SYS001,X'220'
2  // ASSGN SYS002,UA
2  // ASSGN SYS003,UA
2  // ASSGN SYS004,UA
2  // ASSGN SYS005,UA
2  // ASSGN SYS006,UA
```

```
2  // ASSGN SYS007,UA
2  // ASSGN SYS008,UA
3  // EXEC STCPOST,SIZE=AUTO
4   DIAGNOSTIC OPERATOR
5  /*
6  /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN cards define the test device as the unit at address 220, and unassign all unused logical units.

3. The EXEC card requests that the program STCPOST be executed.

4. This STCPOST control card indicates that the DIAGNOSTIC function is to be executed with the operator parameter.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

DISPLAY

The DISPLAY function is used to display records from SYS1.LOGREC or an EREP accumulation data set.

Function	Required Parameters	Optional Parameters
DISPLAY		CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list EREP FSC=fsc-list JOBNAME=jobname-list TIME=time-spec TYPE=type-list VOLUME=volume-list
DISPLAY	MONitor	CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list FSC=fsc-list INTERVAL=nnnnn JOBNAME=jobname-list TYPE=type-list VOLUME=volume-list
DISPLAY	OPERator	CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list EREP FSC=fsc-list JOBNAME=jobname-list RESET TIME=time-spec TYPE=type-list VOLUME=volume-list

Required Parameters

MONitor
The MONitor parameter specifies that the DISPLAY function is to operate in monitor mode. In monitor mode, the DISPLAY function 'sleeps' for the amount of time specified by the INTERVAL parameter and then reports on the records that were added while it was 'sleeping'. MONitor may be abbreviated MON.

OPERator
The OPERator parameter specifies that selection parameters may be entered at the operator's console. The DISPLAY function sets the criteria based on this input and begins searching and displaying records. The DISPLAY function can be interrupted and restarted at any time to change these options. OPERator may be abbreviated OPER.

Optional Parameters

CPU=ssssssmmmm|(ssssssmmmm,ssssssmmmm,...)|ALL
The CPU parameter specifies the serial number and model of the CPU for which records are to be displayed. Either one CPU or a list with several cpuids may be specified.

ssssss = CPU serial number
mmmm = CPU model number

If not specified, records for ALL CPU serial numbers and models are eligible for display.

DETAIL|SUMMARY

DETAIL
The DETAIL parameter specifies that each record meeting the defined selection criteria is to be displayed in addition to the summary data.

SUMMARY
The SUMMARY parameter specifies that only the summary data is to be displayed.

If neither parameter is specified SUMMARY is the default.

DEVICE=aaaa|aaaa-aaaa|(aaaa,aaaa-aaaa,...)|ALL

The DEVICE parameter allows specifications for the device(s) for which records are to be displayed. A single device, a device range, or a list of device combinations may be specified. aaaa specifies the four character (hex) device address. NOTE: The leading zero may be omitted when aaaa is specified.

If not specified, ALL is the default.

DEVTYPE=nnnn|(nnnn,nnnn,...)|ALL
The DEVTYPE parameter allows specifications for the device type for which records are to be displayed. Either one device type or a list of device types may be specified.

If not specified, records for ALL of the device types specified below are eligible for display. The value nnnn is the devtype to search for. Allowable entries for nnnn are:

1403	3330-1	2305-2
3203	3330-11	3380
3211	3350	TAPE

The generic name TAPE is used to specify 3420 type tape devices.

EREP
The EREP parameter specifies that the input data set is an EREP accumulation data set. This parameter is not valid when STCPOST is executing under SAE.

FSC=nnnn|(nnnn,nnnn,...)|ALL
The FSC parameter specifies the Fault Symptom Code for which records are to be displayed. Either one FSC or a list of FSCs may be specified.

The character X may be used in place of a significant digit in the last three positions of nnnn. (i.e., nnnX, nnXX and nXXX are all valid specifications.) By using nnXX, the FSC may be specified to display all records containing FSCs that begin with certain numbers (e.g., 19XX searches for all codes beginning with 19). The value 53XX may be used to search for correctable errors (sense byte 7 = 53).

INTERVAL=nnnnn
The INTERVAL parameter specifies the number of minutes that DISPLAY is to 'sleep' when in monitor mode. nnnnn is a decimal number between 1 and 99999. The default is 30.

JOBNAME=name|(name,name,...)|ALL
The JOBNAME parameter is used to select a specific jobname associated with the failures. The DISPLAY function displays records which were logged while executing a specific job.

If not specified, ALL jobs are eligible for display.

RESET
The RESET parameter specifies that all the selection parameters currently in effect are to be reset. The RESET parameter is only valid in inter-active mode. If not specified, the parameters set in the previous run remain in effect unless changed.

TIME=hh:mm:ss;yy.ddd|hh:mm:ss;mm/dd/yy|
hh:mm:ss;yy.ddd-hh:mm:ss;yy.ddd|
hh:mm:ss;mm/dd/yy-hh:mm:ss;mm/dd/yy

The TIME parameter is used to define the time range for which records are to be displayed. The time may be specified as one start time (all records from that time on will be displayed) or a starting and ending time (records that occurred between the starting and ending time will be displayed). The date and time must be specified together and create one date and time to be used as a starting or ending time.

hh = the hour (from 00 to 24)
mm = the minutes (from 00 to 59)
ss = the seconds (from 00 to 59)
yy = the year
ddd = the julian day,
mm = the month,
dd = the day,

TYPE=CHTO|any combination of C, H, T and O

The TYPE parameter is used to specify the types of records to be displayed. The DISPLAY function will only display records with the specified type. Valid types are:

C = Channel Check Handler (CCH) or
Subchannel Logout Handler (SLH)
H = Missing Interrupt Handler (MIH)
T = Miscellaneous Data Record (MDR)
O = Outboard Record (OBR)

Any one or all of the above types may be specified. If not specified CHTO is the default.

VOLUME=xxxxxx|(xxxxxx,xxxxxx,...)|ALL

The VOLUME parameter specifies the volume serial number of the device for which records are to be displayed. Either one volume or a list with several volumes may be specified.

If not specified, records for ALL volume serial numbers are eligible for display.

Operation Considerations

The DISPLAY function has three modes of operation: batch, inter-active, and monitor. In batch mode, the input data set may be either SYS1.LOGREC or an EREP accumulation data set. The input data set is processed only once. The records processed are printed in the STCPOST output. In inter-active mode, the input

data set may be either SYS1.LOGREC or an EREP accumulation data set. The input data set is processed as many times as requested by the operator. The records processed are displayed at the operator's console and printed in the STCPOST output. In monitor mode, the input data set must be SYS1.LOGREC. Only the data added while DISPLAY is 'sleeping' is processed. In this mode, the DISPLAY function executes until stopped by the operator. The records processed are printed in the STCPOST output. Status messages are displayed at the operator's console each time DISPLAY 'wakes up.'

The input data set must be defined using a DD card type 6.

The DISPLAY function processes only CCH/SLH, MIH, MDR, and OBR records for the device types specified by the DEVTYPE parameter. Short OBR records are not processed.

The DISPLAY function is not supported under the DOS/VSE version of STCPOST.

The EREP accumulation data set input is not supported under SAE.

Operation Examples

The following examples show how to execute the DISPLAY function using the basic OS/VS JCL, and the STCPOSTD OS/VS JCL procedure in batch mode.

Basic OS/VS JCL Example 1

This example uses the basic OS/VS JCL to execute the DISPLAY function in batch mode selecting tape records.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD DSN=SYS1.LOGREC,DISP=SHR
5   //SYSIN    DD *
6    DISPLAY DEVTYPE=TAPE
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the input data set as SYS1.LOGREC.

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the DISPLAY function is to be executed with the DEVTYPE parameter.

7. This card indicates the end of the job JCL deck.

Basic OS/VS JCL Example 2

This example uses the basic OS/VS JCL to execute the DISPLAY function in monitor mode 'sleeping' for 60 minutes.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD DSN=SYS1.LOGREC,DISP=SHR
5   //SYSIN    DD *
6    DISPLAY MON INTERVAL=60
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the input data set as SYS1.LOGREC.

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the DISPLAY function is to operate in monitor mode 'sleeping' for 60 minutes between reports.

7. This card indicates the end of the job JCL deck.

FORMAT

The FORMAT function is used to format a StorageTek 4305 Solid State Disk in either 2305-2 or 3380 mode. All of the tracks are written with the proper Home Address (HA) and Record Zero (R0). A volume label and VTOC may also be written.

Function	Required Parameters	Optional Parameters
FORMAT		FORCE
FORMAT	VOLID=n	DSName=xx..xx FORCE MBytes=xx NCYLS=xx OWNERID=n VTOC=(ccc,hh[,n])|(ccc.hh[,n])

Required Parameters

If FORMAT is entered without the VOLID parameter, only home address (HA) and record zero (R0) are formatted.

VOLID=n
The VOLID parameter defines the volume serial number to be placed in the volume label. n is 1 to 6 characters. If less than 6 characters is specified, the character string will be left justified and padded with blanks.

This parameter is required if the device is to be formatted with a volume label and VTOC.

Optional Parameters

DSName=xx..xx
The DSNAME parameter defines the data set name to be used for the data set that is built into the VTOC and which has the non-existent space allocated to it. xx..xx is the name and can be from 1 to 44 characters. If less than 44 characters is specified, the dataset name will be left justified and padded with blanks. The name must be enclosed in quotes if it contains blanks, commas, or dashes. The default dataset name is volid.STC4305E.NON.EXISTENT.SPACE. This parameter is only valid when the device is in 3380 mode.

FORCE
The FORCE parameter specifies that the operator is not to be asked for confirmation to initialize the device. Specifying this parameter implies confirmation.

MBytes=xx
The MBYTES parameter defines the number of megabytes (xx) in the module. When the 4305 is formatted in 3380 mode, the module size indicated by the device is compared to the size specified to verify that the device indicates the proper module size. If not specified, the size indicated by the device is compared to a table of valid sizes. This parameter is mutually exclusive with the NCYLS parameter. This parameter is only valid when the device is in 3380 mode.

NCYLS=xx
The NCYLS parameter defines the number of cylinders (xx) in the module. When the 4305 is formatted in 3380 mode, the module size indicated by the device is compared to the size specified to verify that the device indicates the proper module size. If not specified, the size indicated by the device is compared to a table of valid sizes. This parameter is mutually exclusive with the MBYTES parameter. This parameter is only valid when the device is in 3380 mode.

OWNERID=n
The OWNERID parameter defines the owner identification to be placed on the volume label. n is 1 to 14 characters. If less than 14 characters is specified, the character string will be left justified and padded with blanks. The default is 14 blanks.

VTOC=(ccc,hh[,n])|(ccc.hh[,n])
The VTOC parameter defines the location and size of the VTOC. ccc is the starting cylinder address (in hex), hh is the starting head address (in hex), and n is the number of tracks (in decimal from 1 to 99). The VTOC can not be located on cylinder 0 head 0. The VTOC can not have a length of 0. The default for n is 1. The default for ccc,hh is 000,01.

Operation Considerations

In addition to writing the Home Address and Record Zero on each track, a VTOC and volume label may also be written. The VTOC consists of a Format 4 DSCB, a Format 5 DSCB, a single Format 1 DSCB (3380 mode only), and Format 0 DSCBs. The Format 5 DSCB indicates the amount and location of all free space available on the volume. The Format 1 DSCB describes a single extent dataset which has all of the unavailable (non-existent) space allocated to it (3380 mode only).

- The FORMAT function requires a DD card type 0.
- The FORMAT function can not be executed using the STCPOST OS/VS JCL procedure, use the STCPOSTO procedure.

Operation Example

The following example shows how to execute the FORMAT function using the basic OS/VS JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the FORMAT function on a two module 4305 device in 3380 mode at addresses 790 and 791.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSIN    DD *
5    DEFINE ADD DDNAME=SYSUT1 ADDRESS=790 DDTYPE=0
6    DEFINE ADD DDNAME=SYSUT2 ADDRESS=791 DDTYPE=0
7    FORMAT VOLID=PAGE01
8    OPTION DDNAME=SYSUT2
9    FORMAT VOLID=PAGE02
10  //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.
2. The EXEC card requests that the program STCPOST be executed.
3. The SYSPRINT DD card describes the printed output file as class A output.
4. The SYSIN DD card describes the control card input file.

5. This STCPOST control card indicates that the DEFINE function is to define device 790 as ddname SYSUT1 for DD type 0.

6. This STCPOST control card indicates that the DEFINE function is to define device 791 as ddname SYSUT2 for DD type 0.

7. This STCPOST control card indicates that the FORMAT function is to be executed. The VOLID parameter specifes that a volume label and VTOC are to be written and that the volume id is PAGE01.

8. This STCPOST control card specifies that the subsequent functions are to execute against the device defined by ddname SYSUT2.

9. This STCPOST control card indicates that the FORMAT function is to be executed. The VOLID parameter specifes that a volume label and VTOC are to be written and that the volume id is PAGE02.

10. This card indicates the end of the job JCL deck.

The following example shows how to execute the FORMAT function using the basic DOS JCL.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the FORMAT function on a 4305 device at address 123.

```
1   // JOB POSTTEST
2   // EXEC STCPOST,SIZE=AUTO
3    DEFINE ADD DDNAME=SYSUT1 ADDRESS=123 DDTYPE=0
4    FORMAT
5   /*
6   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. This STCPOST control card indicates that the DEFINE function is to define device 123 as ddname SYSUT1 for DD type 0.

4. This STCPOST control card indicates that the FORMAT function is to be executed.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

MODECHG

The MODECHG function is used to change the format of a 3350 type volume from native mode to compatability mode or from compatability mode to native mode.

Function	Required Parameters	Optional Parameters
MODECHG		FORCE

NOTE

MODECHG does not format the volume for use by the operating system (no label or VTOC is created).

Required Parameters

There are no required parameters.

Optional Parameters

FORCE
The FORCE parameter specifies that the operator is not to be asked for confirmation to initialize the device. Specifying this parameter implies confirmation.

Operation Considerations

The logical volume is formatted in the mode specified by the operating system's Unit Control Block (UCB) or as defined to the STCPOST Stand-Alone Executive (SAE) during SAE device definition. All of the tracks are written with the proper Home Address (HA) and Record Zero (R0).

MODECHG does not change any track assignments. All defective primary tracks remain defective with an alternate track assigned. Defective non-primary tracks become defective alternates. MODECHG formats all of the CE tracks of a 3350 device in native mode.

- The MODECHG function requires a DD card type 0.
- The MODECHG function can not be executed using the STCPOST OS/VS JCL procedure, use the STCPOST0 procedure.
- MODECHG should not be used if the operating system supports 3350 type devices in native mode. Use the appropriate system utility.

- MODECHG must be run on both logical volumes if the device is to be formatted in the 3330-1 compatability mode.

Operation Example

The following example shows how to execute the MODECHG function using the basic OS/VS JCL.

This example uses the basic OS/VS JCL to execute the MODECHG function on a 3350 type device at address 285.

```
1   //jobname  JOB  acct-info,name,...
2   //stepname EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSIN    DD *
5    DEFINE ADD DDNAME=SYSUT1 ADDRESS=285 DDTYPE=0
6    MODECHG
7   //
```

Following is a description of each card for the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file.

4. The SYSIN DD card describes the control card input file.

5. This STCPOST control card indicates that the DEFINE function is to define device 285 as ddname SYSUT1 for DD type 0.

6. This STCPOST control card indicates that the MODECHG function is to be executed on the device at address 285.

7. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the MODECHG function on a 3350 device at address 350.

```
1   // JOB POSTTEST
2   // EXEC STCPOST,SIZE=AUTO
3    DEFINE ADD DDNAME=SYSUT1 ADDRESS=350 DDTYPE=0
4    MODECHG
5   /*
6   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. This STCPOST control card indicates that the DEFINE function is to define device 350 as ddname SYSUT1 for DD type 0.

4. This STCPOST control card indicates that the MODECHG function is to be executed.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

OPTION

The OPTION function specifies STCPOST function execution options. The options specified apply until changed by another OPTION function control card.

Function	Required Parameters	Optional Parameters
OPTION		ABEND=xxxx BALRWAIT DATACNT=nnnnn DATAFMT=R|M DDNAME=SYSUTnnn IOCHK|NOIOCHK IODELAY=n|NOIODELAY IOSTAT|NOIOSTAT LOG|NOLOG REPEAT=n|NOREPEAT RESET STC|NOTSTC SUMMARY|NOSUMMARY TITLE='title' TERMINATE|NOTERMINATE TESTRC=n TRACE|NOTRACE

Required Parameters

There are no required parameters.

Optional Parameters

ABEND=xxxx
The ABEND parameter specifies that STCPOST is to abend when the trace point xxxx is encountered; xxxx being a four character value. The default is not to abend. Coding only ABEND= resets the ABEND parameter.

BALRWAIT
The BALRWAIT parameter specifies that STCPOST is to wait for an operator reply to message STC095 before executing the STCPOST function. The default is not to issue message STC095 and wait.

DATACNT=nnnnn
Specifies the maximum number of data bytes displayed by the standard I/O error message for each CCW. n is a five digit number from 1 to 99999. The default for n is 100.

NOTE: The leading zero may be omitted when nnnnn is specified.

DATAFMT=R|M
The DATAFMT parameter specifies the format of any data which is to be dumped (printed). R specifies record format. M specifies memory format. The default for this parameter is R. Refer to Appendix D for a description of the data formats.

DDNAME=SYSUTnnn
Specifies the ddname of the DD statement or device definition of the current device to be tested. nnn is one to three decimal characters. The following ddnames are not equivalent (but are all valid): SYSUT1, SYSUT01, and SYSUT001. When STCPOST is executed on a DOS/VSE system, nnn must be a single digit 1 - 8.

The default for the parameter is DDNAME=SYSUT1.

STCPOST single device functions, such as VOLSCAN or WRTREAD, test the device defined by current ddname. If more than one device is to be tested by single device functions, this parameter must be used to switch to a different test device. STCPOST multiple device functions, such as WRDISK or DIAGNOSTIC, ignore the current ddname specification (these functions test the devices defined by SYSUT1 through SYSUT8).

Example

If four DASD test devices are defined by the SYSUT1, SYSUT2, SYSUT6 and SYSUT8 DD cards, the following control cards will run VOLSCAN on all four.

```
OPTION TESTRC=99
VOLSCAN SUMMARY
OPTION DDNAME=SYSUT6
VOLSCAN SUMMARY
OPTION DDNAME=SYSUT8
VOLSCAN SUMMARY
OPTION DDNAME=SYSUT2
VOLSCAN SUMMARY
```

The devices will be tested by VOLSCAN in the order SYSUT1, SYSUT6, SYSUT8 and SYSUT2.

IOCHK|NOIOCHK
The IOCHK|NOIOCHK parameter controls the printing of I/O checking information. If IOCHK is specified, error mes-

sages are printed for all I/O operations even if no error occurred. If NOIOCHK is specified, error messages are printed only for I/O operations which incur errors. The default is NOIOCHK.

IODELAY=n|NOIODELAY
The IODELAY parameter allows the user to specify a time delay after every 256 I/O operations. The value n equals the number of seconds to delay after each 256 I/O operations. The value n may be a number between 0 and 9. The default value is 2.

NOTE: IODELAY=0 or NOIODELAY may cause system degradation or missing interrupts.

IOSTAT|NOIOSTAT
The IOSTAT|NOIOSTAT parameter controls the printing of I/O status information. If IOSTAT is specified, I/O status information is printed for all I/O operations. If NOIOSTAT is specified, no I/O status information is printed. The default is NOIOSTAT.

LOG|NOLOG
The LOG|NOLOG parameter controls the use of the operating system's error recovery routines and the logging of I/O errors. OPTION LOG allows the operating system error recovery procedures (ERPs) to be invoked when an I/O error occurs. Part of the ERPs is the logging of the error in the system error file. OPTION NOLOG does not allow the ERPs to be invoked. All error recovery is done by STCPOST. The default is NOLOG. OPTION LOG is ignored under DOS/VSE. Refer to Appendix A for detailed information on error reporting and logging.

REPEAT=n|NOREPEAT
The REPEAT|NOREPEAT parameter is used to repeat the entire control card string input for a run of STCPOST. The value of n can be a number from 1 to 99. The default is NOREPEAT. This parameter is not valid if STCPOST is reading its control cards from the control card input dataset (SYSIN or SYSIPT).

The REPEAT parameter can not be used if STCPOST is reading control cards from the control card input dataset. The OPTION control card containing the REPEAT parameter must be contained in a control card set that was supplied by the Control Card Editor.

The first time the control card set is processed and the OPTION REPEAT parameter is processed, the repeat value is

saved and the repeat option is enabled. When STCPOST has finished processing the control card set, the repeat option becomes active and the entire control card set is repeated the number of times specified by the OPTION REPEAT parameter.

If more than one OPTION control card in the control card set specifies the REPEAT parameter, the last REPEAT value is used. The REPEAT parameter is ignored once the repeat option becomes active.

The REPEAT parameter has no effect on any other OPTION parameter. If a function's return code exceeds the value of the TESTRC parameter, the remainder of the control card set will be skipped. To insure that all of the control cards in the control card set are executed during each repeat cycle, the TESTRC=99 parameter should be coded on the first OPTION control card.

Repeating of the control card set is terminated only when either the control card set has been repeated the specified number of times or if the operator STOP command is entered at the console.

Example 1

```
OPTION REPEAT=10 TESTRC=99
WRTREAD IOLIMIT=2000
OPTION REPEAT=32
VOLSCAN SUMMARY
```

This example executes the WRTREAD and VOLSCAN functions 33 times. The REPEAT parameter of the first OPTION control card is ignored.

Example 2

```
OPTION REPEAT=10
VOLSCAN SUMMARY
```

This example will execute the VOLSCAN function 11 times provided that the VOLSCAN return code is always zero. If the VOLSCAN gives return code zero the first five times it is executed and then gives a non-zero return code the sixth time, then VOLSCAN will be executed only 6 times. However, STCPOST will still attempt to execute the control card set 11 times. Starting with the seventh time, only the OPTION function will be executed each time.

RESET
The RESET parameter specifies that the following OPTION function parameters are to be set to their default values:

```
ABEND=
DATAFMT=R
DDNAME=SYSUT1
NOLOG
NOIOCHK
NOIOSTAT
NOTRACE
STC
NOSUMMARY
TESTRC=0
```

STC|NOTSTC
The STC|NOTSTC parameter specifies whether or not the test device is an STC device. STC specifies that an STC device is being tested; NOTSTC specifies that a non-STC device is being tested. The default is STC.

SUMMARY|NOSUMMARY
The SUMMARY parameter specifies that a summary message is to be displayed on the operator's console when each function starts and ends. NOSUMMARY specifies that no summary messages are displayed. NOSUMMARY is the default.

TITLE='title'
The TITLE parameter allows the user to specify the title that appears at the top of each page of the STCPOST output. The title may be from 1 to 64 characters in length. The quotes may be ommitted if the title does not contain blanks, commas, dashes, or asterisks. A quote within the title MUST be represented by two quotes. The default is blank.

TERMINATE|NOTERMINATE
The TERMINATE|NOTERMINATE parameter controls termination of the STCPOST program. TERMINATE specifies that when the program has finished processing all of the control cards, the program terminates. NOTERMINATE specifies that the program is to re-enter the Control Card Editor when the program has ended. When NOTERMINATE is specified, the program runs continuously until the TERMINATE option is specified. The REMOTE function forces the NOTERMINATE parameter. The TERMINATE parameter may not be specified if the REMOTE function is active. The default is TERMINATE.

The NOTERMINATE parameter causes STCPOST to continue execution until the TERMINATE parameter is specified. If STCPOST is processing control cards from the control card input dataset and one of those control cards specifies OPTION NOTERMINATE, the cards in that dataset are processed and then the Control Card Editor is entered. If STCPOST is processing a contol card set supplied by the Control Card Editor and one of those control cards specifies OPTION NOTERMINATE, the cards in that set are processed and then the Control Card Editor is entered. Each time the Control Card Editor is entered a new set of STCPOST control cards may be specified. When the Control Card Editor terminates, STCPOST will execute the new control card set. This action will be repeated until either OPTION TERMINATE is specified or the operator STOP command is entered at the console.

The NOTERMINATE parameter has no effect on any other OPTION parameter. If a function's return code exceeds the value of the TESTRC parameter, the remainder of the control card set will be skipped. To insure that all of the control cards in the control card set are executed during each cycle, the TESTRC=99 parameter should be coded on the first OPTION control card.

Example

If the first control card set contains a

```
OPTION NOTERMINATE TESTRC=99
```

control card, STCPOST will enter NOTERMINATE mode and invoke the Control Card Editor again when the end of the first control card set is reached. A different set of STCPOST control cards can be entered and processed. The Control Card Editor would be invoked again when the end of the second control card set is reached. Again a different control card set could be entered and processed. This action will continue until a control card set is entered that contains a

```
OPTION TERMINATE
```

control card. After processing this control card set, STCPOST will terminate.

TESTRC=n

The TESTRC parameter specifies the maximum function return code allowed. If the value specified by n is exceeded, STCPOST terminates. n is a decimal number between 0 and 99. The default for this parameter is TESTRC=0.

TRACE|NOTRACE
The TRACE|NOTRACE parameter controls the printing of function trace points. TRACE specifies that trace points are to be printed. NOTRACE specifies that trace points are not to be printed. The default is NOTRACE.

Operation Considerations

- The OPTION function does not require a DD card.
- The ABEND, BALRWAIT, IOCHK, IOSTAT, and TRACE parameters are function debugging aids and should not be specified unless requested by a Software Support Representative.
- All OPTION function parameters remain in effect until respecified on another OPTION function control card or until an OPTION RESET card is encountered. For example, if DDNAME=SYSUT5 is specified, all testing is done on the device defined by the SYSUT5 DD card until another OPTION control card with either DDNAME= or RESET is encountered.
- The LOG parameter should not be specified unless action is taken to ensure that device errors logged during STCPOST testing do not affect any performance or reliability measurement programs that report on the data in the system error log file.
- The LOG parameter may have an effect on the way some functions operate. See each function's Operation Considerations section for any possible impact the LOG parameter may have.

RECREATEVL

The RECREATEVL function is used to restore the volume label on a DASD volume which does not have a valid label but does have a valid Volume Table of Contents (VTOC).

Function	Required Parameters	Optional Parameters
RECREATEVL		FORCE

Required Parameters

There are no required parameters.

Optional Parameters

FORCE
The FORCE parameter specifies that the operator is not to be asked for confirmation to initialize the device. Specifying this parameter implies confirmation.

Operation Considerations

The RECREATEVL function re-creates the volume label records (records one, two and three on cylinder zero, track zero) on an OS/VS or DOS/VSE formatted volume. Record three is the volume label and contains the pointer to the VTOC. This function does not re-create any IPL text which may have been on the volume.

The RECREATEVL function prompts the operator for the volume serial number to be placed in the volume label and for the location of the VTOC. RECREATEVL verifies that the VTOC is at the location specified prior to re-creating the volume label.

The RECREATEVL function does not re-create the volume label if:

1. the existing volume label is valid,
2. the FORMAT 4 DSCB of the VTOC is missing or invalid, or
3. the VTOC is located on cylinder zero track zero.

After RECREATEVL has re-created the volume label, all data on the volume should be removed and the volume label and VTOC reformatted using the appropriate system utility.

- The RECREATEVL function requires a DD card type 0.

- The RECREATEVL function can not be executed using the STCPOST OS/VS JCL procedure, use the STCPOSTO procedure.

- The location of the VTOC on the volume which is to have its volume label re-created must be known.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the RECREATEVL function on the device at address 187.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSIN    DD *
5    DEFINE ADD DDNAME=SYSUT1 ADDRESS=187 DDTYPE=0
6    RECREATEVL
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSIN DD card describes the control card input file.

5. This STCPOST control card indicates that the DEFINE function is to define device 187 as ddname SYSUT1 for DD type 0.

6. This STCPOST control card indicates that the RECREATEVL function is to be executed on the device at address 187.

7. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the RECREATEVL function on a 3350 device at address 234.

```
1   // JOB POSTTEST
2   // EXEC STCPOST,SIZE=AUTO
3    DEFINE ADD DDNAME=SYSUT1 ADDRESS=234 DDTYPE=0
4    RECREATEVL
5   /*
6   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. This STCPOST control card indicates that the DEFINE function is to define device 234 as ddname SYSUT1 for DD type 0.

4. This STCPOST control card indicates that the RECREATEVL function is to be executed.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

TRKDUMP

The TRKDUMP function dumps (prints) the Home Address (HA), Record Zero (R0), and all fields of all data records on a track of a DASD volume. A list of the contents of the count field of every record is printed prior to the dump of the track.

Function	Required Parameters	Optional Parameters
TRKDUMP	TRACK=ccc.hh	DATAFMT=R|M ELIMIT=n NUMBER=n PRINT=SUMMARY|Rn|cccchhhhrr| nnnnn SCDUMP

Required Parameters

TRACK=ccc.hh
The TRACK parameter specifies the address of the first track to be dumped. ccc and hh are hexadecimal numbers. Valid values are:

DEVICE TYPE	ccc LIMITS	hh LIMITS
3330-1	000 - 19A	00 - 12
3330-11	000 - 32E	00 - 12
3350	000 - 22F	00 - 1D
3380	000 - 375	00 - 0E
2305-2	000 - 05F	00 - 07

Optional Parameters

DATAFMT=R|M
The DATAFMT parameter specifies the format of the data dumped. R specifies record format, M specifies memory format. This parameter may be overridden by the DATAFMT parameter of the OPTION function. The default for this parameter is R. See Appendix F for a description of the data formats.

ELIMIT=n
The ELIMIT parameter specifies the maximum number of permanent errors allowed before dumping of the track is terminated. n is a decimal number from 0 to 999. 0 allows an infinite number of errors. The default value for n is 10.

NUMBER=n
The NUMBER parameter specifies the number of tracks that are to be dumped starting with the track specified by the TRACK parameter. n is a decimal number between 1 and 99. The default value for n is 1.

PRINT=SUMMARY|Rn|ccccchhhhrr|nnnnn
The PRINT parameter controls the data that is printed for each track dumped. Valid values are: SUMMARY, a decimal number between 8 and 99999, a decimal number between 0 and 999 preceded by an R, and a 10 character hexadecimal value. If SUMMARY is specified, only the summary of count fields (message STC628) is printed. If Rn is specified, in addition to the summary, record number n is dumped. If ccccchhhhrr is specified, in addition to the summary, the record with id ccccchhhhrr is dumped. If nnnnn is specified, in addition to this summary, only the first nnnnn bytes of the count, key and data fields of each record are printed.

SCDUMP
The SCDUMP parameter specifies that a space count dump of the track is to be done (4305 only). The default is no space count dump.

Operation Considerations

If an uncorrectable data check occurs during a dump of a track, the uncorrectable data field is printed with the error offset and the corrected data.

The number of bytes used on the track is printed after the dump of each record.

The data is dumped in record format unless overridden by the DATAFMT parameter of the TRKDUMP function or of the OPTION function.

I/O operations which end with an error will be retried a maximum of 10 times before being considered permanent. Dumping of the track terminates if a permanent error occurs reading HA or R0, or if the number of permanent errors reading data records exceeds the maximum allowed as specified by the ELIMIT parameter.

- The TRKDUMP function requires a DD card type 1, 2, 3 or 4.
- The TRKDUMP function can not be executed using the OS/VS JCL procedure in batch mode.
- The format of the data dumped is determined as follows:

TRKDUMP parameter	OPTION parameter	Dumped Data Format
DATAFMT=R	DATAFMT=R	record format
DATAFMT=R	DATAFMT=M	memory format
DATAFMT=M	DATAFMT=R	memory format
DATAFMT=M	DATAFMT=M	memory format

- Error logging is under the control of the LOG/NOLOG parameter of the OPTION function. When OPTION LOG is in effect, correctable errors are not detected, reported on, or counted by the TRKDUMP function.

Operation Examples

The following examples show how to execute the TRKDUMP function using the basic OS/VS JCL and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the TRKDUMP function on a DASD volume with volume serial STC809. Cylinder 000 head 00 through cylinder 000 head 05 are to be dumped using memory format for the data dumped.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC809,SPACE=(TRK,0)
5   //SYSIN    DD *
6    TRKDUMP TRACK=000.00 NUMBER=6 DATAFMT=M
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC809. The SPACE=(TRK,0) defines this as a type 1 DD card (read-only functions).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the TRKDUMP function is to dump six tracks starting with track 000.00 in memory format.

7. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the TRKDUMP function on a DASD volume at address 122. Cylinder 102 head 1D is to be dumped in record format.

```
1   // JOB POSTTEST
2   // EXEC STCPOST,SIZE=AUTO
3    DEFINE ADD ADDRESS=122 DDNAME=SYSUT1 DDTYPE=1
4    TRKDUMP TRACK=102.1D
5   /*
6   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. This STCPOST control card indicates that the DEFINE function is to define device 122 as ddname SYSUT1 for DD type 1.

4. This STCPOST control card indicates that the TRKDUMP function is to be executed to dump track 102.1D.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

UNASSIGN

The UNASSIGN function is used to reverse the assignment of a defective/alternate track pair on 3330 or 3350 type devices.

Function	Required Parameters	Optional Parameters
UNASSIGN	TRACK=ccc.hh	FORCE

Required Parameters

TRACK=ccc.hh
The TRACK parameter specifies the address of the track for which an alternate is to be unassigned. ccc and hh are hexadecimal numbers. Valid values are:

DEVICE TYPE	ccc LIMITS	hh LIMITS
3330-1	000 - 19A	00 - 12
3330-11	000 - 32E	00 - 12
3350	000 - 22F	00 - 1D

Optional Parameters

FORCE
The FORCE parameter specifies that the HA/R0 records are to be rewritten even if they could not be read.

Operation Considerations

This function rewrites the Home Address (HA) and Record Zero (R0) records of both tracks. The defective track is flagged as a good data track. The alternate track is flagged as an unassigned alternate.

The UNASSIGN function can be used to recreate the HA/R0 records on a track if they have been destroyed.

The UNASSIGN function does not update the alternate track information in the FORMAT 4 DSCB of the Volume Table of Contents (VTOC).

- The UNASSIGN function requires a DD card type 2, 3 or 4.
- The UNASSIGN function can not be executed using the OS/VS JCL procedure in batch mode.

- The track specified by the TRACK parameter must be within the dataset defined by the test device DD card or a defective alternate.

- If FORCE is specified and the HA of the specified track could not be read, the assigned alternate track will not be flagged unassigned. In addition, the defect skip data for the specified track will be set to 0000.0000.0000 (no defect skips).

- This function forces the NOLOG parameter of the OPTION function while it is executing.

Operation Examples

The following examples show how to execute the UNASSIGN function using the basic OS/VS JCL and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the UNASSIGN function to re-write the Home Address (HA) and Record zero (R0) records on cylinder 22A head 06 on a DASD volume with volume serial STC567.

```
1   //POSTTEST JOB acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC567,
5   //         SPACE=(ABSTR,(1,16626))
6   //SYSIN    DD *
7    UNASSIGN TRACK=22A.06 FORCE
8   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC567.

5. The SPACE=(ABSTR,(1,16626)) defines this as a type 2 DD card (write functions on a temporary dataset).

6. The SYSIN DD card describes the control card input file.

7. This STCPOST control card indicates that the UNASSIGN function is to unassign an alternate track for track 22A.06 (if one is assigned) and is to re-write HA and R0 even if they could not be read.

8. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the UNASSIGN function on a 3350 DASD volume at address 219. The alternate track assigned to cylinder 12A head 0F is to be unassigned.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'219'
3   // DLBL SYSUT1,'GOOD TRACK',0,SD
4   // EXTENT SYS001,,1,0,8955,1
5   // EXEC STCPOST,SIZE=AUTO
6    UNASSIGN TRACK=12A.0F
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 219.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of GOOD TRACK.

4. The EXTENT card defines the location of the dataset as starting at track 8955 (cylinder 12A head 0F) for one track.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the UNASSIGN function is to be executed to assign an alternate track for cylinder 3 head 07.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

VOLSCAN

The VOLSCAN function reads the Home Address (HA), Record Zero (R0), and ALL data records on every track of a DASD volume, including the CE tracks. VOLSCAN checks all defective and alternate tracks for correct defective/alternate track pairing.

Function	Required Parameters	Optional Parameters
VOLSCAN	CECYL	PRINTDS
VOLSCAN	RANDOM	CLIMIT=ccc|ccc-ccc ELIMIT=n IOLIMIT=n
VOLSCAN		CLIMIT=ccc|ccc-ccc ELIMIT=n HLIMIT=hh|hh-hh LOOP=n NOCECYL PRINTDS READCMD=RCKD|RMCKD SUMMARY

Required Parameters

CECYL
If CECYL is specified, only the CE cylinder of the device is scanned.

RANDOM
The RANDOM parameter specifies that random track testing is to be done. When RANDOM is specified the CE tracks are not tested. The default is sequential track testing.

Optional Parameters

CLIMIT
The CLIMIT parameter is used to restrict volume scanning to a specific cylinder or range of cylinders. ccc is a three digit hexadecimal number. Valid values are:

DEVICE TYPE	ccc LIMITS
3330-1	000 - 19A
3330-11	000 - 32E
3350	000 - 22F (400 for CE Cylinder)
3380	000 - 375
2305-2	000 - 05F

The default is to scan all cylinders. CLIMIT can not be used if CECYL is specified.

ELIMIT
The ELIMIT parameter specifies the maximum number of unrecoverable I/O errors allowed. If this number is exceeded, the VOLSCAN function terminates scanning of the track and continues with the next track. If VOLSCAN RANDOM is executing, VOLSCAN terminates. n is a decimal number from 0 to 999. 0 allows an infinite number of errors. The default value for n is 10.

HLIMIT
The HLIMIT parameter is used to restrict volume scanning to a specific head or range of heads. hh is a two digit hexadecimal number. Valid values are:

DEVICE TYPE	hh LIMITS
3330-1	00 - 12
3330-11	00 - 12
3350	00 - 1D
3380	00 - 0E
2305-2	00 - 07

The default is to scan all heads.

IOLIMIT
The IOLIMIT parameter specifies the maximum number of I/O operations to be executed. n is a decimal number from 1 to 99999999. The default value for n is 1000.

LOOP
The LOOP parameter specifies the maximum number of times that an I/O operation terminating with an error is to be retried. The failing CCW chain will be retried until either the loop count is reached or the CCW chain is executed successfully. n is a decimal number from 0 to 100. The default for n is 1.

NOCECYL
If NOCECYL is specified, scanning of the CE cylinder tracks is bypassed. This parameters is ignored if the test device is not a 3350 or 3380 in native mode.

If NOCECYL is not specified, only the data cylinders/heads (as specified by CLIMIT and HLIMIT) are scanned.

PRINTDS
The PRINTDS parameter specifies that defect skip information is to be printed for each track scanned.

READCMD=RMCKD|RCKD
The READCMD parameter specifies which read command to use to read the data records on each track. 'RMCKD' specifies that the Read Multiple Count Key Data (5E) command is to be used. 'RCKD' specifies that the Read Count Key Data (1E) command is to be used. The default is 'RMCKD' for 3330, 3350, and 3380 type devices and 'RCKD' for 2305-2 type devices.

SUMMARY
The SUMMARY parameter specifies that a summary message is to be sent to the operator's console at the completion of the VOLSCAN run. The default is no message to the operator's console. XXXXXXXXXXXXXXXXX VOLSCAN uses the Read Multiple Count Key Data command for 3330, 3350 and 3380 type devices but can be forced to use the Read Count Key Data command. The Read Count Key Data command is always used for 2305-2 type devices. VOLSCAN can be limited to specific cylinders or heads or both. Volume scanning can be done either sequentially or randomly.

Error messages are printed for all errors. Alternate track assignments are printed for all defective tracks which have alternate tracks assigned.

Operation Considerations

- The VOLSCAN function requires a DD card type 1, 2, 3 or 4.
- When scanning a non full volume device (4305 in 3380 mode, VM/370 mini-disk, etc.), VOLSCAN should be limited to the extent of the mini-disk by using the CLIMIT parameter. If it is not limited, VOLSCAN will terminate when the end of the mini-disk is reached.
- Error logging is under the control of the LOG/NOLOG parameter of the OPTION function. When OPTION LOG is in effect, correctable errors are not detected, reported on, or counted by the VOLSCAN function.

Operation Examples

The following examples show how to execute the VOLSCAN function using the basic OS/VS JCL, the OS/VS JCL procedure in batch mode and the basic DOS/VSE JCL.

Basic OS/VS Example

This example uses the basic OS/VS JCL to execute the VOLSCAN function on a DASD volume with volume serial STC001, limiting the VOLSCAN to cylinders 100 through 1FF.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC001,SPACE=(TRK,0)
5   //SYSIN    DD *
6    VOLSCAN CLIMIT=100-1FF
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC001. The SPACE=(TRK,0) defines this as a type 1 DD card (read-only functions).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the VOLSCAN function is to be executed with the CLIMIT parameter.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the VOLSCAN function on a DASD volume with volume serial STC002, performing a random volume scan.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC002,S=0,
3   //           TEST=VOLSCANR
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC002. The S=0 indicates that a type 1 DD card (read-only functions) is to be used for this device.

3. This card is a continuation of the EXEC card and indicates that the VOLSCANR control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

Basic DOS/VSE Example

This example uses the basic DOS/VSE JCL to execute the VOLSCAN function on a DASD volume at address 120, limiting the scan to head 00 on all cylinders.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'120'
3   // DLBL SYSUT1,'STCPOST',0,SD
4   // EXTENT SYS001,,1,0,16620,1
5   // EXEC STCPOST,SIZE=AUTO
6    VOLSCAN HLIMIT=00
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 120.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of STCPOST.

4. The EXTENT card defines the location of the dataset as starting at track 16620 (cylinder 22A head 00) for one track.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the VOLSCAN function is to be executed with the HLIMIT parameter.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

WRDISK

The WRDISK function exercises one to eight DASD devices (volumes). The devices can be mixed types (3330-1, 3330-11, 3350, 3380, and 2305-2).

Function	Required Parameters	Optional Parameters
WRDISK		COMPARE DUMP ELIMIT=n IOLIMIT=n LOOP=n SEQUENTIAL SUMMARY

Required Parameters

There are no required parameters.

Optional Parameters

COMPARE
The COMPARE parameter specifies that the data read is to be compared with the data written. Any differences are reported. The default is no data comparison. See Appendix F for a description of the format of the data dumped.

DUMP
The DUMP parameter specifies that any track on which an unrecoverable I/O error occurs is to be dumped. See Appendix F for a description of the format of the data dumped.

ELIMIT=n
The ELIMIT parameter specifies the maximum number of unrecoverable I/O errors allowed on each device. If this number is exceeded, the device will be dropped from testing, but testing will continue on all the other devices. n is a decimal number from 0 to 999. 0 allows an infinite number of errors. The default value for n is 10.

IOLIMIT=n
The IOLIMIT parameter specifies the maximum number of I/O operations to be executed on each device. n is a decimal number from 1 to 99999999. The default value for n is 10000 or 100 times the number of tracks to be tested (whichever is smaller).

LOOP=n
The LOOP parameter specifies the maximum number of times that an I/O operation terminating with an error is to be retried. The failing CCW chain will be retried until either the loop count is reached or the CCW chain is executed successfully. n is a decimal number from 0 to 100. The default for n is 1.

SEQUENTIAL
The SEQUENTIAL parameter specifies that testing is to be done on one track at a time regardless of the number of tracks available for testing. The default is simultaneous testing of five tracks at a time (if enough tracks are available).

SUMMARY
The SUMMARY parameter specifies that a summary message is to be sent to the operator's console at the completion of testing on each device tested by WRDISK. The default is no message to the operator's console.

Operation Considerations

WRDISK performs the following sequence of operations on each track tested:

1. write a random number of random length records with random data,

2. read all the records written in 1),

3. update the key and data fields of randomly selected records with different random data, and

4. read all the records written in 1) and 3).

If the number of tracks to be tested on a device is equal to or greater than the number of tracks in one cylinder for that device (19 tracks for 3330-1/3330-11, 30 tracks for 3350, 15 tracks for 3380, 8 tracks for 2305-2), this sequence is performed on a group of five tracks at the same time. Thus, each track under test will be at a different point in the sequence resulting in highly random seek, read, and write activity. If the number of tracks to be tested is less than the number of tracks in one cylinder, this sequence of events is performed sequentially on each track, one track at a time. If desired, sequential track testing can be forced.

WRDISK uses a set sector command in all CCW chains to verify that the device properly executes this command. It is not used to min-

imize rotational delay. The sector values are (in hexadecimal) 00 for operation 1), 1F for operation 2), a random number between 00 and 7F for operation 3), and 61 for operation 4).

Testing continues on each device until either the IOLIMIT specified is reached or until the number of permanent errors on that device exceeds the ELIMIT specified. The WRDISK function does not test the CE tracks.

- The WRDISK function requires a DD card type 2, 3 or 4 for each device that is to be tested.
- If more than one device is to be tested, the devices to be tested must be defined as DD names SYSUT1 through SYSUT8. If a DD name other than SYSUT1 is specified on an OPTION function control card prior to executing WRDISK, only the test device defined by that DD name will be tested even if DD names SYSUT1 through SYSUT8 are also defined.
- The SUMMARY parameter is ignored for a test device if the IOLIMIT specified or defaulted for the device is less than 1500 or if the number of tracks in the test dataset on that device is less than the number of tracks in one cylinder for that test device.
- Error logging is under the control of the LOG/NOLOG parameter of the OPTION function. When OPTION LOG is in effect, correctable errors are not detected, reported on, or counted by the WRDISK function.
- When the WRDISK function is executed under DOS, an attempt is made to test all the logical units SYS001 through SYS008. If less than eight devices are to be tested, the remaining unused logical units must be unassigned.

Operation Examples

The following examples show how to execute the WRDISK function using the basic OS/VS JCL, the OS/VS JCL procedure in batch mode and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the WRDISK function on four DASD volumes with volume serials STC100, STC101, STC102, and STC104.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC101,SPACE=(CYL,10)
```

```
4   //SYSUT2   DD UNIT=DISK,VOL=SER=STC102,SPACE=(TRK,300)
4   //SYSUT3   DD UNIT=DISK,VOL=SER=STC103,SPACE=(CYL,5)
4   //SYSUT4   DD UNIT=DISK,VOL=SER=STC104,SPACE=(CYL,20)
5   //SYSIN    DD *
6    WRDISK
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 through SYSUT4 DD cards define the four test devices as disk volumes with volume serials of STC101, STC102, STC103, and STC104. The SPACE= specifies that these are type 2 DD cards (write functions on a temporary dataset).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the WRDISK function is to be executed without any parameters.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the WRDISK function on a single DASD volume with volume serial STC202. Sequential track testing is to be performed.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC202,S=5,
3   //           TEST=WRDISKS
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC202. The S=5 indicates that a type 2 DD card (write functions on a temporary dataset) is to be used for this device.

3. This card is a continuation of the EXEC card and indicates that the WRDISKS control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the WRDISK function on three DASD volumes at addresses 121, 228, and 235. The data read is to be compared to the data written and WRDISK is to terminate testing on any device on which 5 permanent errors occur.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'121'
3   // DLBL SYSUT1,'WRDISK1',0,SD
4   // EXTENT SYS001,,1,0,16620,30
2   // ASSGN SYS002,X'228'
3   // DLBL SYSUT2,'WRDISK2',0,SD
4   // EXTENT SYS002,,1,0,2400,150
2   // ASSGN SYS003,X'235'
3   // DLBL SYSUT3,'WRDISK3',0,SD
4   // EXTENT SYS003,,1,0,3990,300
5   // EXEC STCPOST,SIZE=AUTO
6    WRDISK COMPARE ELIMIT=5
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. These ASSGN cards define the test devices as the units at addresses 121, 228, and 235.

3. The DLBL cards define the test device files as sequential disk files with file names of SYSUT1, SYSUT2, and SYSUT3, and file ids of WRDISK1, WRDISK2, and WRDISK3.

4. The EXTENT cards define the location of the datasets.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the WRDISK function is to be executed with the COMPARE and ELIMIT parameters.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

WRTAPE

The WRTAPE function exercises one to eight tape devices.

Function	Required Parameters	Optional Parameters
WRTAPE		BLKSIZE=n|n-n COMPARE DENSITY=800|1600|6250 NPASS=n TESTSEQ=n

Required Parameters

There are no required parameters.

Optional Parameters

BLKSIZE=n|n-n
The BLKSIZE parameter specifies the size (n) or range of sizes (n-n) of records to be written. n is a decimal number between 28 and 65534. The defaults for the BLKSIZE parameter are:

BLKSIZE=28-16383 for DENSITY=800
BLKSIZE=28-32767 for DENSITY=1600
BLKSIZE=28-65534 for DENSITY=6250

COMPARE
The COMPARE parameter specifies that a complete comparison of the data read with the data written is to be done. The default is to check only the record number and record length of the record read.

DENSITY=800|1600|6250
The DENSITY parameter specifies which density is to be used to write the tapes. 1600 specifies 1600 BPI (PE). 6250 specifies 6250 BPI (GCR). 800 specifies 800 BPI (NRZI). The default value is 6250.

NPASS=n
The NPASS parameter specifies the number of write and/or read passes to be done on each test device. n is a decimal number from 1 to 99999. The default value for n is:

3 for TESTSEQ=1
5 for TESTSEQ=2
1 for TESTSEQ=3
2 for TESTSEQ=4

TESTSEQ=n
The TESTSEQ parameter specifies which sequence of operations is to be performed. n is a decimal number from 1 to 4. The default value for n is 1 (test sequence 1).

Operation Considerations

WRTAPE writes and reads full reels of data. The data consists of random length (from 28 to 65534 bytes) records. Every 512th record is a tape mark. The first eight bytes and the last eight bytes of each record contains the record number and the record length. A twelve byte random data pattern is repeated as necessary to fill the remaining bytes in the record.

WRTAPE performs one of the following sequences of operations on each device tested:

Test Sequence 1 - write a full reel of data, rewind the volume, read forward the full reel of data and read backward the full reel of data twice,

Test Sequence 2 - write a full reel of data, rewind the volume, read forward the full reel of data, read backward the full reel of data, unload the volume, request that the volume be exchanged among the test devices, read forward the full reel of data and read backward the full reel of data,

Test Sequence 3 - write a full reel of data, or

Test Sequence 4 - read a full reel of data.

The test sequence performed is controlled by the TESTSEQ parameter. The number of full reel operations (passes) executed is controlled by the NPASS parameter.

Error recovery is performed for data checks and overruns. All other errors are considered permanent and testing is terminated on that test device. Write error recovery consists of back space block, erase gap, and write. Up to fifteen retries are attempted for each write error before the error is considered permanent and testing terminated on that test device. Read error recovery consists of reposition and read in the same direction without cleaner actions. Up to forty retries are attempted for each read error before the error is considered permanent and testing terminated on that test device.

Error reporting is done for all temporary and permanent errors. At the end of each write or read pass, a pass summary is printed. At the completion of the execution of the WRTAPE function, a summary for each test drive and tape volume pair is printed.

The tapes to be used by WRTAPE can not have IBM or ANSI standard labels.

- The WRTAPE function requires a DD card type 5 for each device that is to be tested.

- If more than one device is to be tested, the devices to be tested must be defined as DD names SYSUT1 through SYSUT8. If a DD name other than SYSUT1 is specified on an OPTION function control card prior to executing WRTAPE, only the test device defined by that DD name will be tested even if DD names SYSUT1 through SYSUT8 are also defined.

- The NPASS parameter number must be large enough to insure that the complete test sequence specified is executed. For example, one complete execution of test sequence 2 is counted as five passes (write, read forward, read backward, read forward, and read backward). If NPASS were less than five, the entire test sequence would not be executed.

- When the WRTAPE function is executed under DOS, an attempt is made to test all the logical units SYS001 through SYS008. If less than eight devices are to be tested, the remaining unused logical units must be unassigned. In addition, TLBL statements are not required and will be ignored if specified.

Operation Examples

The following examples show how to execute the WRTAPE function using the basic OS/VS JCL, the OS/VS JCL procedure in batch mode and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the WRTAPE function on two tape devices at address 280, and 281. Test sequence 2 is to be performed.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=280,VOL=SER=DRIVE1,LABEL=(,BLP)
4   //SYSUT2   DD UNIT=281,VOL=SER=DRIVE2,LABEL=(,BLP)
5   //SYSIN    DD *
6    WRTAPE TESTSEQ=2
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 and SYSUT2 DD cards define the two test devices as tape devices at addresses 280, and 281. The LABEL=(,BLP), specifies that these are type 5 DD cards (tape functions).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the WRTAPE function is to be executed with the TESTSEQ parameter.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the WRTAPE function on a single tape drive at address 387. Test sequence 1 will be performed for a total of ten passes.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=387,V=STCTST,
3   //             TEST=WRTAPE
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a tape unit at address 387 with volume serial STCTST. Not specifying S= indicates that a type 5 DD card (tape functions) is to be used for this device.

3. This card is a continuation of the EXEC card and indicates that the WRTAPE control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

Basic DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the WRTAPE function on five tape drives at addresses 120 through 124. Test sequence 3 is to be performed once.

```
1   // JOB POSTTEST
```

```
2    // ASSGN SYS001,X'120'
2    // ASSGN SYS002,X'121'
2    // ASSGN SYS003,X'122'
2    // ASSGN SYS004,X'123'
2    // ASSGN SYS005,X'124'
3    // EXEC STCPOST,SIZE=AUTO
4     WRTAPE TESTSEQ=3 NPASS=1
5    /*
6    /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. These ASSGN cards define the test devices as the units at addresses 120 through 124.

3. The EXEC card requests that the program STCPOST be executed.

4. This STCPOST control card indicates that the WRTAPE function is to be executed with the TESTSEQ, and NPASS parameters.

5. This card indicates the end of the control card input.

6. This card indicates the end of the job JCL deck.

WRTREAD

The WRTREAD function exercises a single DASD device (volume).

Function	Required Parameters	Optional Parameters
WRTREAD		BLKSIZE=n CECYL|NOCECYL COMPARE DATA=xx DUMP ELIMIT=n HLIMIT=hh|hh-hh IOLIMIT=n LOOP=n SEQUENTIAL SUMMARY

Required Parameters

There are no required parameters.

Optional Parameters

BLKSIZE=n
The BLKSIZE parameter specifies that fixed length records of length n are to be written. If the blocksize specified is greater than the maximum allowed for the test device, the blocksize is set to the maximum for the device. n is a decimal number between 1 and 99999. The default is random length records. Test sequence 5 is bypassed if BLKSIZE is specified.

CECYL|NOCECYL
If CECYL is specified, WRTREAD performs all testing on the CE tracks of the test device (3350 or 3380 only). The test device may be defined by a DD type 1, 2, 3, or 4. The dataset allocated by a DD type 2, 3, or 4 is not used.

If NOCECYL is specified, the device must be defined by a DD type 2, 3, or 4. All testing is performed within the allocated dataset.

If neither CECYL or NOCECYL are specified, and DD type 1 is used to define the test device, CECYL is defaulted. If neither CECYL or NOCECYL are specified, and DD type 2, 3, or 4 is used, all testing is performed within the allocated dataset.

COMPARE
The COMPARE parameter specifies that the data read is to be compared with the data written. Any differences are reported. The default is no data comparison. See Appendix F for a description of the format of the data dumped.

DATA=xx
The DATA parameter specifies the fixed data pattern that is to be written. The specified pattern is repeated as necessary to fill the record being written. xx is 1 to 32 hexadecimal characters. If an odd number of characters is specified, a zero is appended to make an even number of characters. The default is to write random data patterns. Test sequence 5 is bypassed if DATA is specified.

DUMP
The DUMP parameter specifies that any track on which an unrecoverable I/O error occurs is to be dumped. See Appendix F for a description of the format of the data dumped.

ELIMIT=n
The ELIMIT parameter specifies the maximum number of unrecoverable I/O errors allowed. If this number is exceeded, the WRTREAD function terminates immediately. n is a decimal number from 0 to 999. 0 allows an infinite number of errors. The default value for n is 10.

HLIMIT=hh|hh-hh
The HLIMIT parameter is used to restrict volume scanning to a specific head or range of heads. hh is a two digit hexadecimal number. Valid values are:

DEVICE TYPE	hh LIMITS
3330-1	00 - 12
3330-11	00 - 12
3350	00 - 1D
3380	00 - 0E
2305-2	00 - 07

The head number specified must be within the test dataset for each cylinder that any portion of the test dataset resides on. For example, if the test dataset is from cyl 9 head 3 to cyl 20 head 10, only the heads between 3 and 10 may be specified by the HLIMIT parameter.

The default is to test all heads in the allocated dataset.

IOLIMIT=n
The IOLIMIT parameter specifies the maximum number of I/O operations to be executed. n is a decimal number from 1 to 99999999. The default value for n is 10000 or 100 times the number of tracks to be tested (whichever is smaller).

LOOP=n
The LOOP parameter specifies the maximum number of times that an I/O operation terminating with an error is to be retried. The failing CCW chain will be retried until either the loop count is reached or the CCW chain is executed successfully. n is a decimal number from 0 to 100. The default for n is 1.

SEQUENTIAL
The SEQUENTIAL parameter specifies that testing is to be done on one track at a time regardless of the number of tracks available for testing. The default is simultaneous testing of five tracks at a time (if enough tracks are available).

SUMMARY
The SUMMARY parameter specifies that a summary message is to be sent to the operator's console at the completion of the WRTREAD run. The default is no message to the operator's console.

Operation Considerations

- WRTREAD performs the following sequence of operations on each track tested:

  1. write a random number of random length records with random data,

  2. read all the records written in 1),

  3. update the key (if any) and data fields of randomly selected records with different random data, and

  4. read all the records written in 1) and 3), and

- Before testing the CE cylinder, WRTREAD will ensure that the Home Address and Record Zero records of each track of the CE cylinder are valid. If any track of the CE cylinder contains an invalid record, the invalid track(s) will be formatted before testing begins.

- If the number of tracks to be tested is equal to or greater than the number of tracks in one cylinder (19 tracks for

3330-1/3330-11, 30 tracks for 3350, 15 tracks for 3380, 8 tracks for 2305-2), this sequence is performed on a group of five tracks at the same time. Thus, each track under test will be at a different point in the sequence, resulting in highly random seek, read, and write activity. If the number of tracks to be tested is less than the number of tracks in one cylinder, this sequence of events is performed sequentially on each track, one track at a time. If desired, sequential track testing can be forced.

- The BLKSIZE and DATA parameters can be used to change random length/random data to fixed length/random data, random length/fixed data, or fixed length/fixed data. Random length data records have random length key fields. Fixed length data records have no key fields.

- WRTREAD uses a set sector command in all CCW chains to verify that the device properly executes this command. It is not used to minimize rotational delay. The sector values are (in hexadecimal) 00 for operation 1), 1F for operation 2), a random number between 00 and 7F for operation 3), and 61 for operation 4).

- The WRTREAD function requires a DD card type 1, 2, 3 or 4. When a type 1 DD card is used, all testing is performed on the CE cylinder.

- The DATA and BLKSIZE parameters are related as follows:

DATA	BLKSIZE	ACTION
not specified	not specified	write random length records of random data, test sequence 5 is executed.
specified	not specified	write random length records of fixed data
not specified	specified	write fixed length records of random data
specified	specified	write fixed length records of fixed data

- The SUMMARY parameter is ignored if the HLIMIT parameter is specified, if the IOLIMIT specified or defaulted is less than 1500, or if the number of tracks in the test dataset is less than the number of tracks in one cylinder for the test device.

- Error logging is under the control of the LOG/NOLOG parameter of the OPTION function. When OPTION LOG is in effect, correctable errors are not detected, reported on, or counted by the WRTREAD function.

Operation Examples

The following examples show how to execute the WRTREAD function using the basic OS/VS JCL, the OS/VS JCL procedure in batch mode, and the basic DOS/VSE JCL.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the WRTREAD function on a DASD volume with volume serial STC003 using 10 cylinders, with data comparison and dumping of tracks with errors.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=DISK,VOL=SER=STC003,SPACE=(CYL,10)
5   //SYSIN    DD *
6    WRTREAD DUMP COMPARE
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a disk volume with volume serial STC003. The SPACE=(CYL,10) defines this as a type 2 DD card (write functions on a temporary dataset).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the WRTREAD function is to be executed with the DUMP and COMPARE parameters.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the WRTREAD function on a DASD volume with volume serial

STC004, performing sequential testing on an existing dataset named STC.WRITE.READ.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC004,D1=OLD,
3   //              D2=KEEP,DS='STC.WRITE.READ',TEST=WRTREADS
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC004. The D1=OLD indicates that the dataset is an existing dataset.

3. This card is a continuation of the EXEC card. The D2=KEEP indicates that the dataset is to be kept after the job ends. The DS='STC.WRITE.READ' indicates that a type 3 DD card (existing dataset named STC.WRITE.READ) is to be used for this device. The TEST=WRTREADS indicates that the WRTREADS control card set of the Control Card Editor prompt facility is to be used.

4. This card indicates the end of the job JCL deck.

BASIC DOS/VSE JCL Example

This example uses the basic DOS/VSE JCL to execute the WRTREAD function on a DASD volume at address 135. The test dataset starts at cylinder 100 head 00 and is 30 tracks in size. A fixed data pattern is to be written and only 500 I/O operations are to be performed.

```
1   // JOB POSTTEST
2   // ASSGN SYS001,X'135'
3   // DLBL SYSUT1,'STCPOST WRTREAD',0,SD
4   // EXTENT SYS001,,1,0,7680,30
5   // EXEC STCPOST,SIZE=AUTO
6    WRTREAD DATA=FFFF IOLIMIT=500
7   /*
8   /&
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The ASSGN card defines the test device as the unit at address 135.

3. The DLBL card defines the test device file as a sequential disk file with file name of SYSUT1 and file id of STCPOST WRTREAD.

4. The EXTENT card defines the location of the dataset as starting at track 7680 (cylinder 100 head 00) for 30 tracks.

5. The EXEC card requests that the program STCPOST be executed.

6. This STCPOST control card indicates that the WRTREAD function is to be executed with the DATA and IOLIMIT parameters.

7. This card indicates the end of the control card input.

8. This card indicates the end of the job JCL deck.

WR4305

The WR4305 function exercises the StorageTek 4305 Solid State Disk subsystem.

Function	Required Parameters	Optional Parameters
WR4305		BLKSIZE=n COMPARE DATA=xx|CCHHR DUMP|ECCDUMP ELIMIT=n IOLIMIT=n LOOP=n RANDOMREAD=T|R READONLY SEQUENTIAL SUMMARY

Required Parameters

There are no required parameters.

Optional Parameters

BLKSIZE=n
Specifies that fixed length records of length n are to be written. If the blocksize specified is greater than the maximum allowed, the blocksize is set to the maximum allowed. n is a decimal number between 1 and 99999. The default is random length records.

COMPARE
Specifies comparison of the data read to the data written. Any differences are reported. The default is no data comparison.

DATA=xx|CCHHR
Defines the fixed data pattern that is to be written. The specified pattern is repeated as necessary to fill the record being written. xx is 1 to 32 hexadecimal characters. If an odd number of characters is specified, a zero is appended to make an even number of characters. 'CCHHR' specifies that the fixed data pattern to be used is the cchr for the record being written. The default is to write random data patterns.

DUMP|ECCDUMP
Specifies to dump any track on which an unrecoverable I/O error occurs. If DUMP is specified, a standard dump of the track is produced. If ECCDUMP is specified, the contents of the array are dumped. ECCDUMP is supported only on RAM machines with microcode EC level 62533 or higher. See Appendix B for a description of the data formats of DUMP and message STC793 for the format for ECCDUMP.

ELIMIT=n
Defines the maximum number of unrecoverable I/O errors allowed. n is a decimal number from 0 to 999. 0 allows an infinite number of errors. The default value for n is 10. If this number is exceeded, the WR4305 function terminates immediately.

IOLIMIT=n
Defines the maximum number of I/O operations to be executed. n is a decimal number from 1 to 99999999. The default value for n is the smaller of: 10000, or 100 times the number of tracks to be tested.

LOOP=n
Defines the maximum number of retries for an I/O operation that terminates with an error. The failing CCW chain is retried until: either the loop count is reached, or the CCW chain is executed successfully. n is a decimal number from 0 to 100. The default for n is 1.

RANDOMREAD=T|R
Specifies that random read operations are to be done. 'T' specifies that read operations are to be done on randomly selected tracks. 'R' specifies that read operations are to be done on randomly selected records. The default is no random reading.

READONLY
Specifies that only read operations are to be done. RANDOMREAD is required if the READONLY parameter is specified. The default is write and read operations.

SEQUENTIAL
Specifies that testing is to be done on one track at a time, regardless of the number of tracks available for testing. The default is simultaneous testing of five tracks at a time (if enough tracks are available).

SUMMARY
The SUMMARY parameter is not used by WR4305. It may be specified without causing a control card error to be com-

patabile with the WRTREAD function control card parameters. This parameter has no effect on the operation of WR4305.

Operation Considerations

WR4305 executes in one of three modes:

1. Execute the following sequence of operations on each track tested:

   a) If the track has been previously tested, read all the records on the track. If not, skip to b).

   b) Write a random number of random length records with random data.

   c) Read all the records written in b).

   d) Update the key (if any) and data fields of randomly selected records.

   e) Read all the records written in b) and d).

2. Execute the sequence in '1' once on each track sequentially and then read random records or random tracks.

3. Read random records or random tracks.

The mode of operation executed is determined by the RANDOMREAD and READONLY parameters.

If the number of tracks to be tested is greater than or equal to 16, the sequence of operations for mode 1 is performed on a group of five tracks simultaneously. Thus, each track under test will be at a different point in the sequence, resulting in highly random seek, read, and write activity. If the number of tracks to be tested is less than 16, this sequence of operations is performed sequentially on each track, one track at a time. If desired, sequential track testing can be forced.

The BLKSIZE and DATA parameters may be used to change random length/random data to: fixed length/random data, random length/fixed data, or fixed length/fixed data. Random length data records have random length key fields. Fixed length data records have no key fields.

WR4305 uses the set sector command in all CCW chains to verify that the device properly executes this command. It is not used to minimize rotational delay. The sector values are (in hexadeci-

mal): 00 for operations a) and b), 31 for operation c), a random number between 00 and 7F for operation d), and 97 for operation e).

- The WR4305 function requires a DD card type 2, 3 or 4.
- The DATA and BLKSIZE parameters are related as follows:

DATA	BLKSIZE	ACTION
not specified	not specified	write random length records of random data
specified	not specified	write random length records of fixed data
not specified	specified	write fixed length records of random data
specified	specified	write fixed length records of fixed data

- The RANDOMREAD and READONLY parameters are related as follows:

RANDOMREAD	READONLY	Mode of operation
not specified	not specified	Mode 1
specified	not specified	Mode 2
specified	specified	Mode 3

- If READONLY is specified, RANDOMREAD is also required, and the data on the tracks under test must have been written by WR4305 if COMPARE is specified.
- Error logging is under the control of the LOG/NOLOG parameter of the OPTION function. When OPTION LOG is in effect, correc-

table errors are not detected, reported, or counted by the WR4305 function.

- The WR4305 function is not available in the DOS/VSE version of STCPOST.

Operation Examples

The following examples show how to execute the WR4305 function using the basic OS/VS JCL and the STCPOST OS/VS JCL procedure in batch mode.

Basic OS/VS JCL Example

This example uses the basic OS/VS JCL to execute the WR4305 function on a 4305 volume with volume serial STC003 using 3 cylinders. Random read operations are performed on tracks, with data comparison and dumping of tracks with errors.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PGM=STCPOST
3   //SYSPRINT DD SYSOUT=A
4   //SYSUT1   DD UNIT=2305-2,VOL=SER=STC003,SPACE=(CYL,3)
5   //SYSIN    DD *
6    WR4305 ECCDUMP COMPARE RANDOMREAD=T
7   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the program STCPOST be executed.

3. The SYSPRINT DD card describes the printed output file as class A output.

4. The SYSUT1 DD card defines the test device as a 2305-2 volume with volume serial STC003. The SPACE=(CYL,3) defines this as a type 2 DD card (write functions on a temporary dataset).

5. The SYSIN DD card describes the control card input file.

6. This STCPOST control card indicates that the WR4305 function is to be executed with the RANDOMREAD, ECCDUMP and COMPARE parameters.

7. This card indicates the end of the job JCL deck.

Batch Mode OS/VS JCL Example

This example uses the OS/VS JCL procedure in batch mode to execute the WR4305 function on a 4305 volume with volume serial STC004. Sequential testing on an existing dataset named STC.WRITE.READ is performed.

```
1   //POSTTEST JOB  acct-info,name,...
2   //STEP1    EXEC PROC=STCPOST,U=DISK,V=STC004,D1=OLD,
3   //           D2=KEEP,DS='STC.WRITE.READ',TEST=WR4305S
4   //
```

Following is a description of each card in the example job.

1. The JOB card is installation dependent.

2. The EXEC card requests that the STCPOST procedure be executed. The test device is defined as a disk unit with volume serial STC004. The D1=OLD indicates that the dataset is an old dataset.

3. This card is a continuation of the EXEC card. The D2=KEEP indicates that the dataset is to be kept after the job ends. DS='STC.WRITE.READ' indicates that a type 3 DD card (existing dataset named STC.WRITE.READ) is to be used for this device. The TEST=WR4305S indicates that the WR4305S control card set of the prompt facility of the control card editor is to be used.

4. This card indicates the end of the job JCL deck.

APPENDIX A

ERROR REPORTING AND LOGGING

STCPOST does not normally allow device errors encountered during program execution to be logged in the system error file by the operating system. Logging of errors is controlled by the OPTION function parameters LOG and NOLOG. The value NOLOG is the default.

Before specifying the LOG parameter, ensure that any errors that might be logged by STCPOST do not have an adverse effect on other programs that analyze the system error file data.

The setting of the NOLOG/LOG parameter may have an effect on the operation of a function. Some functions force the NOLOG parameter regardless of the NOLOG/LOG setting in effect. See the individual function descriptions for the effect of NOLOG/LOG.

STCPOST, subject to the setting of the NOLOG/LOG parameter, reports all errors that occur, In most cases the entire failing CCW chain, the full 24 bytes of sense data and other information is reported in the program output print file. See the STCPOST MESSAGES AND CODES manual FE-012 for the format of the "This is an STCPOST standard error message."

STCPOST considers any occurrence of Unit Check to be a problem with the device being tested. As a result, STCPOST reports errors such as OVERRUN as a device problem. In most cases, OVERRUNs are the result of system configuration problems. In order to determine if an error reported by STCPOST is a real device problem, a careful analysis of the error information is required.

On some systems, STCPOST reports occurrences of environmental or logging-mode sense data as a device error. The following should be considered when this occurs:

1. If sense bytes 0 and 1 are both zero (byte 1 bit 3 is ignored), the error is due to environmental data present (even when sense byte 2 is not displayed).

2. An 8000/8880 control unit presents environmental sense data for <u>any</u> drive in its subsystem, regardless of the current I/O operation. This means that STCPOST may report environmental sense data for a drive other than the one that is being tested. For example, CPU A is running STCPOST on Drive

0 and CPU B is doing an I/O operation to Drive 1 of the same control unit. The usage counter information for Drive 1 overflows and the next I/O operation received by the control unit is from STCPOST in CPU A for Drive 0. Because the control unit has a buffered log that is full, it is presented to CPU A at this time. The result is that STCPOST, on CPU A, reports the buffered log data for Drive 1 - data that was generated because of CPU B I/O activity.

3. If sense byte 2, bit 3, is on and sense byte 7 indicates '60', an 8000/8880 control unit is presenting buffered log data (usage counter information) that may or may not indicate that errors are occurring in the subsystem (such as retry data checks).

4. If sense byte 2, bit 3, is on and sense byte 7 does not indicate '60', an 8000 control unit is presenting logging mode data for an error in the previous operation that was corrected by using command retry. The previous I/O operation could have been to some other device in the subsystem.

5. If sense byte 2, bit 0, is one, a 4000 control unit may indicate that its buffered log is full. The buffered log may be full due to usage entries or error entries or both.

Message STC004 is issued at the termination of each STCPOST function. This message contains the EXCP (Execute Channel Program) count (the number of I/O operations which the STCPOST function requested) and the number of times an I/O operation resulted in Unit Check because the control unit had environmental data to off-load.

Environmental data is:

1. For a 33XX type device it is Format 3, Format 6 and logging mode sense data.

2. For a 2305-2 type device it is buffered log data.

If the tested device is a 33XX type device and the OPTION NOLOG is in effect, message STC004 contains a list of the environmental sense data received. A maximum of 32 occurrences are printed.

If the tested device is a 2305-2 type device and the OPTION NOLOG is in effect, message STC004 contains the number of times Buffered Log Full occurred. The buffered log data is recorded in the system error file by the operating system.

If OPTION LOG is in effect STCPOST cannot detect the occurrence of correctable (temporary) errors or environmental data, and mes-

sage STC004 indicates zero occurrences of environmental sense data.

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APPENDIX B

CONTROL CARD PROMPTER CARD IMAGES

Each control card image is one to sixteen cards.

The parameter type column identifies the type of parameter(s) the card contains:

blank = no parameter (use card as shown)
'-' = parameter with a default value
'+' = parameter without a default value

The control card image for each control card set is listed below.

ASSIGNDA:

```
ASSIGNDS AUTOMATIC,-
 TRACK=CCC.HH                +
```

ASSIGNDI:

```
ASSIGNDS INSPECT,-
 NPASS=3,-                   -
 HLIMIT=HH                   +
```

ASSIGNDM:

```
ASSIGNDS,-
 SKIP=HHHH.HHHH.HHHH,-       +
 TRACK=CCC.HH                +
```

CONFIG:

```
CONFIG
```

CONFIGALL:

```
CONFIG ALL
```

CUTRACE:

```
CUTRACE,-
 CUTYPE=8000                 -
```

DIAG:

```
DIAGNOSTIC,-
 TEST=ALL,-                  -
 SUMMARY,-                   -
 EP,-                        -
 NOMI,-                      -
 EL=0,-                      -
 REPEAT=1                    -
```

```
DIAGOPER:
                DIAGNOSTIC OPERATOR

FRIEND:
                FRIEND

FORMAT:
                FORMAT,-
                 DEVICE=AAA                 +

MODECHG:
                MODECHG,-
                 DEVICE=AAA                 +

TRKDUMP:
                TRKDUMP,-
                 TRACK=CCC.HH,-             +
                 PRINT=SUMMARY,-            -
                 NUMBER=1,-                 -
                 DATAFMT=R,-                -
                 SCDUMP,-                   -
                 ELIMIT=100                 -

UNASSIGN:
                UNASSIGN,-
                 TRACK=CCC.HH,-             +
                 FORCE                      -

VOLSCAN:
                VOLSCAN SUMMARY

VOLSCANP:
                VOLSCAN,-
                 SUMMARY,-                  -
                 CECYL,-                    -
                 PRINTDS,-                  -
                 READCMD=RMCKD,-            -
                 CLIMIT=CCC-CCC,-           +
                 HLIMIT=HH-HH,-             +
                 LOOP=10                    -

VOLSCANR:
                VOLSCAN RANDOM,-
                 CLIMIT=CCC-CCC,-           +
                 IOLIMIT=20000              -
```

```
WRDISK:
                WRDISK SUMMARY

WRDISKP:
                WRDISK,-
                 SUMMARY,-                      -
                 SEQUENTIAL,-                   -
                 IOLIMIT=20000,-                -
                 COMPARE,-                      -
                 DUMP,-                         -
                 ELIMIT=10,-                    -
                 LOOP=10                        -

WRDISKS:
                WRDISK SUMMARY,-
                 SEQUENTIAL

WRTAPE:
                WRTAPE,-
                 TESTSEQ=1,-                    -
                 NPASS=10,-                     -
                 DENSITY=6250,-                 -
                 COMPARE                        -

WRTREAD:
                WRTREAD SUMMARY

WRTREADP:
                WRTREAD,-
                 SUMMARY,-                      -
                 CECYL,-                        -
                 SEQUENTIAL,-                   -
                 IOLIMIT=20000,-                -
                 BLKSIZE=99999,-                -
                 DATA=XX,-                      +
                 HLIMIT=HH-HH,-                 +
                 COMPARE,-                      -
                 DUMP,-                         -
                 ELIMIT=10,-                    -
                 LOOP=10                        -

WRTREADS:
                WRTREAD SUMMARY,-
                 SEQUENTIAL
```

```
WR4305:
                WR4305

WR4305P:
                WR4305,-
                 SEQUENTIAL,-                -
                 IOLIMIT=20000,-             -
                 BLKSIZE=99999,-             -
                 DATA=XX,-                   +
                 COMPARE,-                   -
                 DUMP,-                      -
                 ELIMIT=10,-                 -
                 LOOP=10                     -

WR4305S:
                WR4305,-
                 SEQUENTIAL
```

APPENDIX C

STCPOST 3.0A JCL PROCEDURES

```
./         ADD NAME=STCPOST
//*****          -----  STCPOST OS JCL PROCEDURE  -----
//*
//***** USE THIS PROCEDURE WITH THE STCPOST VERSION 3.0A.
//*
//***** USING THIS PROCEDURE:
//*
//*      (1) IF THE TEST= PARAMETER IS USED IT MUST SPECIFY EITHER
//*          THE NAME OF A CONTROL CARD PROMPT FACILITY CONTROL CARD
//*          SET, THE NUMBER OF A USER DEFINED DEFAULT CONTROL CARD SET
//*          OR *. THE CONTROL CARD EDITOR WILL SUPPLY THE SPECIFIED
//*          CONTROL CARD SET.  IN THIS MODE NO CHANGES TO THE CONTROL
//*          CARDS CAN BE MADE AT THE OPERATOR'S CONSOLE.
//*
//*      (2) IF THE TEST= PARAMETER IS NOT USED THE CONTROL CARD
//*          EDITOR WILL ALLOW THE CONTROL CARDS TO BE DEFINED AT
//*          THE OPERATOR'S CONSOLE.
//*
//*      (3) THIS PROCEDURE CAN BE USED IN EITHER BATCH JOB JCL OR
//*          WITH THE START COMMAND AT THE OPERATOR'S CONSOLE.
//*
//*      (4) WHEN THIS PROCEDURE IS USED ONLY ONE TEST DEVICE CAN BE
//*          DEFINED USING THE SYSUT1 DD CARD.
//*
//*      (5) WHEN THIS PROCEDURE IS USED CONTROL CARDS ARE NOT READ
//*          FROM THE CONTROL CARD INPUT FILE (THE SYSIN DD CARD).
//*
//***** THE BATCH JOB JCL IS:
//*
//*        //JOBNAME JOB ACCT-INFO,NAME,...
//*        //RUNPOST EXEC PROC=STCPOST,...      (SEE BELOW)
//*        //
//*
//***** THE OPERATOR START COMMAND IS:
//*
//*        S STCPOST.PN,...        (FOR OS/VS1, SEE BELOW)
//*        S STCPOST,...           (FOR OS/VS2, SEE BELOW)
//*
//***** THE ADDITIONAL PARAMETERS ON THE BATCH JCL EXEC CARD OR ON
//*     THE OPERATOR START COMMAND IDENTIFY THE TEST DEVICE:
//*
//**  FOR A DD CARD TYPE O -- FOR MODECHG, FORMAT OR RECREATEVL --
//*      THIS PROCEDURE CAN NOT BE USED.  USE THE STCPOSTO
```

```
//*      PROCEDURE.
//*
//**  FOR A DD CARD TYPE 1 -- READ-ONLY FUNCTIONS --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=DISK,V=VOLSER,S=0
//*
//*      S STCPOST,U=DISK,V=VOLSER,S=0
//*
//**  FOR A DD CARD TYPE 2 -- A TEMPORARY DATA SET --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=DISK,V=VOLSER,S=N    (N>0)
//*
//*      S STCPOST,U=DISK,V=VOLSER,S=N                    (N>0)
//*
//**  FOR A DD CARD TYPE 3 -- AN OLD DATA SET --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=DISK,V=VOLSER,
//*      //             D1=OLD,DS='STC.WRITE.READ',D2=KEEP
//*
//*      S STCPOST,U=DISK,V=VOLSER,D1=OLD,DS='STC.WRITE.READ',D2=KEEP
//*
//**  FOR A DD CARD TYPE 4 --  AN OLD DATA SET --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=DISK,V=VOLSER,
//*      //             D1=OLD,DS='STC.DEFECT.TRACK',D2=KEEP
//*
//*      S STCPOST,U=DISK,V=VOLSER,D1=OLD,DS='STC.DEFECT.TRACK',D2=KEEP
//*
//**  FOR A DD CARD TYPE 5 -- A TAPE DEVICE --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=AAA,V=VOLSER
//*
//*      S STCPOST,U=AAA,V=VOLSER
//*
//**  FOR A DD CARD TYPE 5 -- A PRINTER DEVICE --
//*
//*      //RUNPOST EXEC PROC=STCPOST,U=AAA
//*
//*      S STCPOST,U=AAA
//*
//**  FOR A DD CARD TYPE 6 -- FOR DISPLAY --
//*      THIS PROCEDURE CAN NOT BE USED.  USE THE STCPOSTD
//*      PROCEDURE.
//*
//***** THE FOLLOWING PARAMETER DEFINES THE CONTROL CARD SET TO USE.
//*
//STCPOST PROC TEST=,           NAME OF CONTROL CARD SET
//*
//***** THE FOLLOWING PARAMETERS DEFINE THE TEST DEVICE,
//***** TEST VOLUME AND TEST DATA SET --
//*
```

```
//       U=3350,                  UNIT TYPE TO BE TESTED.
//       V=VVVVVV,                VOLSER TO BE TESTED.
//       DS='&&POST',             DATASET NAME-- 'STC.WRITE.READ' OR
//*                                 'STC.DEFECT.TRACK'
//       D1=NEW,                  DISPOSITION OF TEST DATASET
//*                                 AT START OF JOB.
//       D2=DELETE,               DISPOSITION OF TEST DATASET
//*                                 AT END OF JOB.
//       T=CYL,                   TYPE OF DASD SPACE ALLOCATION TO USE.
//       S=1,                     AMOUNT OF DASD SPACE--
//*                                 NUMBER OF TRK IF 'T=TRK',
//*                                 NUMBER OF CYL IF 'T=CYL',
//*                                 AMOUNT AND LOCATION OF TRKS IF
//*                                 'T=ABSTR', S='AMT,LOC'.
//       LBL=NL,                  TYPE OF LABEL ON TAPE VOLUME IF TEST
//*                                 DEVICE IS A TAPE DRIVE.  DO NOT USE
//*                                 'LBL=SL'.
//*
//***** OTHER PARAMETERS --
//*
//       LINKLIB='POST.LINKLIB', NAME OF LINK LIBRARY.
//       CCLIB='POST.CONTROL',   NAME OF CONTROL CARD DATASET.
//       CCDEF='POST.DEFAULT',   NAME OF CONTROL CARD DEFAULT DATASET.
//       PRT=A                   SYSOUT CLASS FOR PRINTER OUTPUT.
//*
//***** EXECUTE STCPOST.
//RUNPOST EXEC PGM=STCPOST,PARM='055SYSPRINTSYSIN   &TEST',REGION=256K
//STEPLIB  DD  DSN=&LINKLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=&PRT
//SYSUDUMP DD  SYSOUT=&PRT
//SYSCCLIB DD  DSN=&CCLIB,DISP=SHR
//SYSCCDEF DD  DSN=&CCDEF,DISP=SHR
//SYSIN    DD  DUMMY,DCB=BLKSIZE=80
//SYSUT1   DD  UNIT=&U,VOL=SER=&V,DSN=&DS,DISP=(&D1,&D2),
//             SPACE=(&T,(&S)),LABEL=(,&LBL)
//*****   PEND
```

```
./         ADD NAME=STCPOSTD
//*****          -----  STCPOSTD OS JCL PROCEDURE  -----
//*
//***** USE THIS PROCEDURE WITH THE STCPOST VERSION 3.0A.
//*
//*
//*     THIS PROCEDURE IS USED TO DEFINE THE LOGREC DATASET
//*     FOR THE STCPOST DISPLAY FUNCTION. THE UNIT TYPE,
//*     VOLUME SERIAL NUMBER, AND DATASET NAME FOR THE LOGREC
//*     DATASET SHOULD BE SET AS THE DEFAULTS FOR THE U, V, AND
//*     DS PARAMATERS OF THIS PROCEDURE. THIS PROCEDURE SHOULD
//*     NOT BE USED TO EXECUTE ANY OTHER STCPOST FUNCTION.
//*
//***** USING THIS PROCEDURE:
//*
//*     (1) IF THE TEST= PARAMETER IS USED IT MUST SPECIFY EITHER
//*         THE NAME OF A CONTROL CARD PROMPT FACILITY CONTROL CARD
//*         SET, THE NUMBER OF A USER DEFINED DEFAULT CONTROL CARD SET
//*         OR *. THE CONTROL CARD EDITOR WILL SUPPLY THE SPECIFIED
//*         CONTROL CARD SET.  IN THIS MODE NO CHANGES TO THE CONTROL
//*         CARDS CAN BE MADE AT THE OPERATOR'S CONSOLE.
//*
//*     (2) IF THE TEST= PARAMETER IS NOT USED THE CONTROL CARD
//*         EDITOR WILL ALLOW THE CONTROL CARDS TO BE DEFINED AT
//*         THE OPERATOR'S CONSOLE.
//*
//*     (3) THIS PROCEDURE CAN BE USED IN EITHER BATCH JOB JCL OR
//*         WITH THE START COMMAND AT THE OPERATOR'S CONSOLE.
//*
//*     (4) WHEN THIS PROCEDURE IS USED CONTROL CARDS ARE NOT READ
//*         FROM THE CONTROL CARD INPUT FILE (THE SYSIN DD CARD).
//*
//***** THE BATCH JOB JCL IS:
//*
//*        //JOBNAME JOB ACCT-INFO,NAME,...
//*        //RUNPOST EXEC PROC=STCPOSTD,...     (SEE BELOW)
//*        //
//*
//***** THE OPERATOR START COMMAND IS:
//*
//*        S STCPOSTD.PN,...        (FOR OS/VS1, SEE BELOW)
//*        S STCPOSTD,...           (FOR OS/VS2, SEE BELOW)
//*
//***** THIS PROCEDURE IS USED WHEN EXECUTING THE STCPOST DISPLAY
//*     FUNCTION. THE SYSUT1 DD CARD IS A TYPE 6 DD CARD FOR THE
//*     SYS1.LOGREC DATASET.
//*
//***** THE FOLLOWING PARAMETER DEFINES THE CONTROL CARD SET TO USE.
//*
//STCPOSTD PROC TEST=,          NAME OF CONTROL CARD SET
//*
```

```
//***** THE FOLLOWING PARAMETERS DEFINE THE LOGREC DEVICE,
//***** LOGREC VOLUME AND LOGREC DATASET --
//*
//       U=3350,                  UNIT TYPE OF LOGREC VOLUME
//       V=VVVVVV,                VOLSER OF LOGREC VOLUME
//       DS='SYS1.LOGREC',        DATASET NAME OF LOGREC DATASET
//*
//***** OTHER PARAMETERS --
//*
//       LINKLIB='POST.LINKLIB', NAME OF LINK LIBRARY.
//       CCLIB='POST.CONTROL',   NAME OF CONTROL CARD DATASET.
//       CCDEF='POST.DEFAULT',   NAME OF CONTROL CARD DEFAULT DATASET.
//       PRT=A                   SYSOUT CLASS FOR PRINTER OUTPUT.
//*
//***** EXECUTE STCPOST.
//RUNPOSTD EXEC PGM=STCPOST,PARM='055SYSPRINTSYSIN   &TEST',REGION=256K
//STEPLIB  DD  DSN=&LINKLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=&PRT
//SYSUDUMP DD  SYSOUT=&PRT
//SYSCCLIB DD  DSN=&CCLIB,DISP=SHR
//SYSCCDEF DD  DSN=&CCDEF,DISP=SHR
//SYSIN    DD  DUMMY,DCB=BLKSIZE=80
//SYSUT1   DD  UNIT=&U,VOL=SER=&V,DSN=&DS,DISP=SHR
//*****   PEND
```

```
./         ADD NAME=STCPOSTO
//*****          -----  STCPOSTO OS JCL PROCEDURE  -----
//*
//***** USE THIS PROCEDURE WITH THE STCPOST VERSION 3.0A.
//*
//*     THIS PROCEDURE IS USED TO EXECUTE STCPOST ON OFFLINE
//*     DEVICES.  THE DEVICES THAT STCPOST IS TO EXECUTE ON
//*     MUST BE DEFINED BY THE STCPOST DEFINE FUNCTION.
//*
//***** USING THIS PROCEDURE:
//*
//*     (1) THIS PROCEDURE CAN BE USED IN EITHER BATCH JOB JCL OR
//*         WITH THE START COMMAND AT THE OPERATOR'S CONSOLE.
//*
//*     (2) WHEN THIS PROCEDURE IS USED CONTROL CARDS ARE NOT READ
//*         FROM THE CONTROL CARD INPUT FILE (THE SYSIN DD CARD).
//*
//***** THE BATCH JOB JCL IS:
//*
//*        //JOBNAME JOB ACCT-INFO,NAME,...
//*        //RUNPOST EXEC PROC=STCPOSTO,...     (SEE BELOW)
//*        //
//*
//***** THE OPERATOR START COMMAND IS:
//*
//*        S STCPOSTO.PN,...        (FOR OS/VS1, SEE BELOW)
//*        S STCPOSTO,...           (FOR OS/VS2, SEE BELOW)
//*
//***** THIS PROCEDURE IS USED WHEN EXECUTING STCPOST ON OFFLINE
//*     DEVICES.  THE DEVICES THAT STCPOST IS TO RUN ON MUST BE
//*     DEFINED BY THE STCPOST DEFINE FUNCTION.
//*
//***** THE FOLLOWING PARAMETER DEFINES THE CONTROL CARD SET TO USE.
//*     THIS PARAMETER MUST BE NULL OR A NUMBER 0 - 9.
//*
//STCPOSTO PROC TEST=,           NAME OF CONTROL CARD SET
//*
//***** PARAMETERS --
//*
//       LINKLIB='POST.LINKLIB', NAME OF LINK LIBRARY.
//       CCLIB='POST.CONTROL',   NAME OF CONTROL CARD DATASET.
//       CCDEF='POST.DEFAULT',   NAME OF CONTROL CARD DEFAULT DATASET.
//       PRT=A                   SYSOUT CLASS FOR PRINTER OUTPUT.
//*
//***** EXECUTE STCPOST.
//RUNPOSTO EXEC PGM=STCPOST,PARM='055SYSPRINTSYSIN   &TEST',REGION=256K
//STEPLIB  DD  DSN=&LINKLIB,DISP=SHR
//SYSPRINT DD  SYSOUT=&PRT
//SYSUDUMP DD  SYSOUT=&PRT
//SYSCCLIB DD  DSN=&CCLIB,DISP=SHR
//SYSCCDEF DD  DSN=&CCDEF,DISP=SHR
```

```
//SYSIN     DD  DUMMY,DCB=BLKSIZE=80
//*****    PEND
```

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APPENDIX D

DUMPED DATA FORMAT

DATA PRINTING FORMATS

There are two formats for all data printed by STCPOST: memory format and record format. The format is determined by the current setting of the DATAFMT parameter of the OPTION function. Some STCPOST functions also have a DATAFMT parameter. The default data format is record (DATAFMT=R). The data printed by STCPOST can include the contents of records or data areas. For example, the data transferred by each CCW in a failing CCW chain is printed by the STCPOST Standard Error message.

RECORD FORMAT

Record format is used when the current setting of the DATAFMT parameter is DATAFMT=R. In record format, four lines are required to print each 50 bytes of data: one line for the character respresentation of the data byte, one line for the zone portion (upper four bits) of the data byte, one line for the numeric portion (lower four bits) of the data byte, and one line for a scale line (similar to data display format used some utilites such as DITTO). The offset into the data is printed in decimal on the left side of the first line of each group of four lines (+00000 to +99999). The C, Z, N, and S stand for character, zone, numeric, and scale. For example, the data 'THIS IS AN EXAMPLE OF RECORD FORMAT' appears in record format as:

```
+00000 C THIS IS AN EXAMPLE OF RECORD FORMAT
       Z ECCE4CE4CD4CECDDDC4DC4DCCDDC4CDDDCE
       N 38920920150571473506609536940669413
       S 0    .    1    .    2    .    3
```

MEMORY FORMAT

Memory format is used when the current setting of the DATAFMT parameter is DATAFMT=M. In memory format, one line is required to print each 16 bytes of data. The line contains the data in hexadecimal on the left side and the character respresentation on the right side (similar to an operating system dump). The offset into the data is printed in hexadecimal on the left side of each line (+0000 to +FFFF). For example, the data 'THIS IS AN EXAMPLE OF MEMORY FORMAT' appears in a memory format dump as:

```
+0000 E3C8C9E2 40C9E240 C1D540C5 E7C1D4D7  *THIS IS AN EXAMP*
+0010 D3C540D6 C640D4C5 D4D6D9E8 40C6D6D9  *LE OF MEMORY FOR*
+0020 D4C1E3                               *MAT             *
```

DATA COMPARE ERROR FORMATS

Many STCPOST functions compare the actual data read with the data expected to be read and dump the data if a compare error occurs. A data compare error is reported as an I/O error using the STCPOST Standard Error Message. There are two formats for the data printed when a compare error occurs: memory format and record format. The format is determined by the current setting of the DATAFMT parameter of the OPTION function. Some STCPOST functions also have a DATAFMT parameter. The default data format is record (DATAFMT=R).

DATA COMPARE RECORD FORMAT

Record format is used when the current setting of the DATAFMT parameter is DATAFMT=R. In record format, four lines are required to print each 50 bytes of data: one line for the compare error flag (an asterisk), one line for the zone portion (upper four bits) of the data byte, one line for the numeric portion (lower four bits) of the data byte, and one line for a scale line (similar to record format). The offset into the data is printed in decimal on the left side of the first line of each group of four lines (+00000 to +99999). The C, Z, N, and S stand for compare, zone, numeric, and scale. An example of this format is:

```
STCxxx DATA COMPARE ERROR AT +00008 ...
       ...
       ... (Standard Error message data)
       ...
       CCW 007 0E-20-4A7D *FAILED* FIRST 100 BYTES--
       +00000 C .......R1234...R....
              Z 5DF2A20DFFFFA20D5DF2
              N E0D61F2912341F29E0D6
              S 0    .   1    .
       EXPECTED DATA--
       +00000 C .......R
              Z 5DF2A20D
              N E0D61F29
              S 0    .
       ACTUAL DATA (INCORRECT BYTES ARE FLAGGED WITH *)--
       +00000 C         ****
              Z 5DF2A20DFFFFA20D5DF2
              N E0D61F2912341F29E0D6
              S 0    .   1    .
```

DATA COMPARE MEMORY FORMAT

Memory format is used when the current setting of the DATAFMT parameter is DATAFMT=M. In memory format, one line is required to print each 16 bytes of data. The line contains the data in hexadecimal on the left side and the compare error flag (an asterisk) on the right side. The offset into the data is printed in hexadecimal on the left side of each line (+0000 to +FFFF). An example of this format is:

```
STCxxx DATA COMPARE ERROR AT +0008 ...
       ...
       ... (Standard Error message data)
       ...
       CCW 007 0E-20-4A7D *FAILED* FIRST 100 BYTES--
       +0000 5ED0FD26 A12F02D9 F1F2F3F4 A12F02D9  *.......R1234...R*
       EXPECTED DATA--
       +0000 5ED0FD26 A12F02D9                    *.......R        *
       ACTUAL DATA (INCORRECT BYTES ARE FLAGGED WITH *)--
       +0000 5ED0FD26 A12F02D9 F1F2F3F4 A12F02D9  *........****....*
```

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APPENDIX E

STCPOST FUNCTION SUMMARY

Function	Required Parameters	Optional Parameters
ASSIGN	TRACK=ccc.hh	
ASSIGNDS	AUTOMATIC TRACK=ccc.hh	
ASSIGNDS	INSPECT	HLIMIT=hh NPASS=n SUMMARY
ASSIGNDS	SKIP=dddd.dddd.dddd TRACK=ccc.hh	
CONFIG	CHannels nn...| DEVices nnnn...	CPU n
CONFIG		ALL
CUTRACE	CUTYPE=xxxx	
DEFINE		LIST
DEFINE	ADD ADDRess=aaaa DDName=SYSUTnnn DDType=n	FORCE
DIAGnostic	ALL|OPERator	OPTion option-list
DIAGnostic		DEVice device-list OPTion option-list TEST test-list

Function	Required Parameters	Optional Parameters
DISPLAY		CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list EREP FSC=fsc-list JOBNAME=jobname-list TIME=time-spec TYPE=type-list VOLUME=volume-list
DISPLAY	MONitor	CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list FSC=fsc-list INTERVAL=nnnnn JOBNAME=jobname-list TYPE=type-list VOLUME=volume-list
DISPLAY	OPERator	CPU=cpu-list DETAIL|SUMMARY DEVICE=device-list DEVTYPE=devtype-list EREP FSC=fsc-list JOBNAME=jobname-list RESET TIME=time-spec TYPE=type-list VOLUME=volume-list
FORMAT		FORCE
FORMAT	VOLID=n	DSName=xx..xx FORCE MBytes=xx NCYLS=xx OWNERID=n VTOC=(ccc,hh[,n])|(ccc.hh[,n])
MODECHG		FORCE

Function	Required Parameters	Optional Parameters
OPTION		ABEND=xxxx BALRWAIT DATACNT=nnnnn DATAFMT=R|M DDNAME=SYSUTnnn IOCHK|NOIOCHK IODELAY=n|NOIODELAY IOSTAT|NOIOSTAT LOG|NOLOG REPEAT=n|NOREPEAT RESET STC|NOTSTC SUMMARY|NOSUMMARY TITLE='title' TERMINATE|NOTERMINATE TESTRC=n TRACE|NOTRACE
RECREATEVL		FORCE
TRKDUMP	TRACK=ccc.hh	DATAFMT=R|M ELIMIT=n NUMBER=n PRINT=SUMMARY|Rn|ccchhhhrr| nnnnn SCDUMP
UNASSIGN	TRACK=ccc.hh	FORCE
VOLSCAN	CECYL	PRINTDS
VOLSCAN	RANDOM	CLIMIT=ccc|ccc-ccc ELIMIT=n IOLIMIT=n
VOLSCAN		CLIMIT=ccc|ccc-ccc ELIMIT=n HLIMIT=hh|hh-hh LOOP=n NOCECYL PRINTDS READCMD=RCKD|RMCKD SUMMARY

Function	Required Parameters	Optional Parameters
WRDISK		COMPARE DUMP ELIMIT=n IOLIMIT=n LOOP=n SEQUENTIAL SUMMARY
WRTAPE		BLKSIZE=n|n-n COMPARE DENSITY=800|1600|6250 NPASS=n TESTSEQ=n
WRTREAD		BLKSIZE=n CECYL|NOCECYL COMPARE DATA=xx DUMP ELIMIT=n HLIMIT=hh|hh-hh IOLIMIT=n LOOP=n SEQUENTIAL SUMMARY
WR4305		BLKSIZE=n COMPARE DATA=xx|CCHHR DUMP|ECCDUMP ELIMIT=n IOLIMIT=n LOOP=n RANDOMREAD=T|R READONLY SEQUENTIAL SUMMARY

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READER'S COMMENT FORM

Please check or fill in the items; adding explanations / comments in the space provided.

Which of the following terms best describes your job?

[] Field Engineer
[] Systems Analyst
[] Sales Representative
[] Operator
[] Systems Support Representative
[] Manager
[] Engineer
[] Systems Engineer
[] Student/Trainee
[] Programmer
[] Systems Programmer
[] Instructor
[] Other (explain below)

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Specific criticisms (explain below)

Clarifications on pages _____

Additions on pages _____

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Errors on pages _____

Explanations and other comments:

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