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**Systems**

**DOS/VS OLTEP**

Release 29

**IBM**

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This edition with Technical Newsletter GN28-2566 applies to Release 29 of the IBM Disk Operating System and to all subsequent releases until otherwise indicated in new editions or Technical Newsletters. Changes are continually made to the specifications herein; before using this publication in connection with the operation of IBM systems, consult the latest IBM System/360 and System/370 Bibliography, GA22-6822, for the editions that are applicable and current.

This edition includes support for message compatibility, data protection on new devices, and CDS equate support.

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## Preface

This publication is in a modular format and consists of the following modules:

- MODULE 1: INTRODUCTION. Describes OLTEP functions, structure, and relationship to the system.
- MODULE 2: OPERATING PROCEDURES. Contains the information necessary to run OLTEP.
- MODULE 3: RETAIN/370. Explains the function of the RETAIN/370 interface and provides the necessary operating procedures. This feature of OLTEP is restricted to the IBM Customer Engineer's use only.
- MODULE 4: OLTEP MESSAGES. Lists the OLTEP messages. Included is an explanation of the messages and the operator actions that apply.
- MODULE 5: GLOSSARY. Terms used in this manual.

The modular format enables you to remove individual modules and insert them into another publication. For example, you may want to remove Module 4: OLTEP Messages and put it into DOS/VS Messages, GC33-5379.

A tab in the upper right-hand corner of the first page of each module identifies the module by number. Each module has a Module Outline and a Module Index.

The total publication has a General Contents and a General Index. These refer you to the individual module numbers.

Figure numbers throughout the publication are in the form: Figure 1-3, where 1 is the module number and 3 is the figure number in that module.

The On-Line Test Executive Program is designed for the IBM Customer Engineer. However, the customer can use it to help isolate system failures or to periodically check I/O devices.

A working knowledge of DCS system concepts is a prerequisite to using this publication. Detailed operating procedures and a general background for running jobs under the disk operating system are provided in the DOS/VS Operating Procedures, GC33-5378. System Generation information is provided in DOS/VS System Generation, GC33-5377.



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# Module 1: OLTEP Introduction

## Modular Outline

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## OLTEP Function

IBM provides a set of device test programs that run under control of the Disk Operating System. These test programs and the online test executive program comprise the online test system. The On-Line Test Executive Program (OLTEP) is an interface between the system and the test programs and communicates with the operator during the running of tests (Figure 1-1).

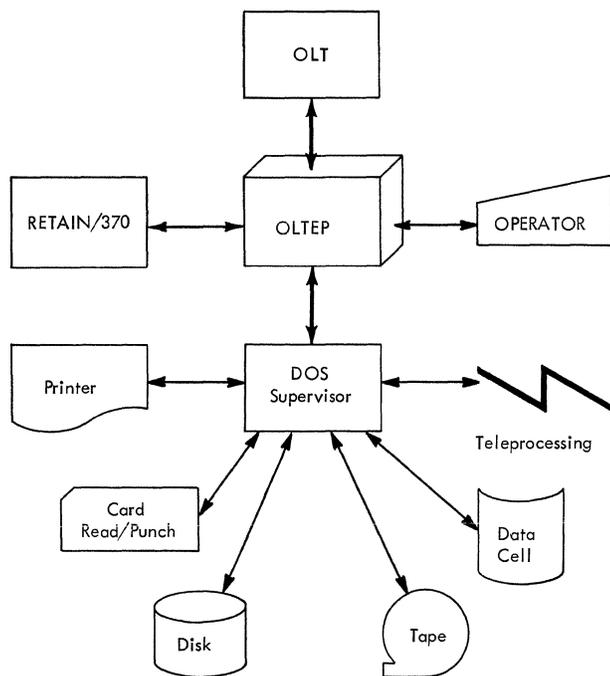


Figure 1-1. OLTEP-System Relationship

Some uses of DOS OLTEP are:

- Diagnosing I/O errors.
- Verifying I/O device repairs and engineering changes.
- Checking I/O devices.

Some features of DOS OLTEP are:

- Multiple device testing.
- Data security.
- Data protection.
- No re-IPL time required.
- Prompting.
- Recognize ASCII labels; restore ASCII labels.
- Accessing of error recording information.
- Line connection routine for remote terminal testing.
- SOSP support.
- RETAIN/370
- Trace option -- will provide a trace of OLTEP modules entered from the OLT.

- Equate -- Allows use of existing CDS for devices with the same configuration but different addresses.

Systems with multiprogramming capabilities have the added advantage of performing productive work while running the online tests.

OLTEP operates much like other problem programs in the disk operating system. It is cataloged into the ccre image library and called by standard jcb control statements. When OLTEP is called, it notifies the operator that it is active and it communicates with him during testing. OLTEP can run in a batch-only system or as a background program in a multiprogramming environment but must be executed in a real partition. It requires a minimum 14K of real storage in the BG Partition and the supervisor must include OLTEP support.

You can test an I/O unit with minimum interference to other programs running on the system. Testing an I/O device ordinarily does not interfere with system input and output. Any unit being tested (except for direct access devices) must not be assigned to the foreground partitions. Direct access devices, however, may be shared.

An OLTEP user language defines and controls the test. With this language you select the devices to test, the test sections to run, and the options to exercise. You enter this information via the console device or in the form of a control statement in the jcb input stream. This information is referred to as the test-run definition, which is common to OLTEP components for all operating systems.

You can test multiple devices of the same type with no operator interventions other than those required for data protection and data security. OLTEP loads and executes the test sections one at a time until all the tests for one device are completed. The test sections then repeat for the next device if one was requested and is available. Testing continues in this manner until all units in the test-run definition are tested.

During testing under control of OLTEP, the system error recovery procedures are bypassed for the device being tested. OLTEP has built-in data integrity safeguards so that no data is destroyed (except on a DASD volume labeled CEPACK) without operator permission.

## OLTEP Structure

The OLTEP component requires a minimum of 14K in the background real partition and at least 18K if Retain/370 is active. (See Module 3, Figure 3-2.) Because the sum of the OLTEP and On-Line Test (OLT) functions exceed this allotted space, transient modules are loaded and executed as needed. To do this, the 14K partition is subdivided into three areas (Figure 1-2).

One area of at least 4K is reserved for the OLT. The remaining 10K contains the OLTEP resident and transient areas. The resident area (nucleus) consists of tables, pointers, and coding that must reside in storage during the execution of OLTEP. The transient area is reserved for modules that have limited use and need not be resident. One or more transient modules can be in main storage at a given time. These supporting modules, when needed, overlay previously loaded modules in the transient area.

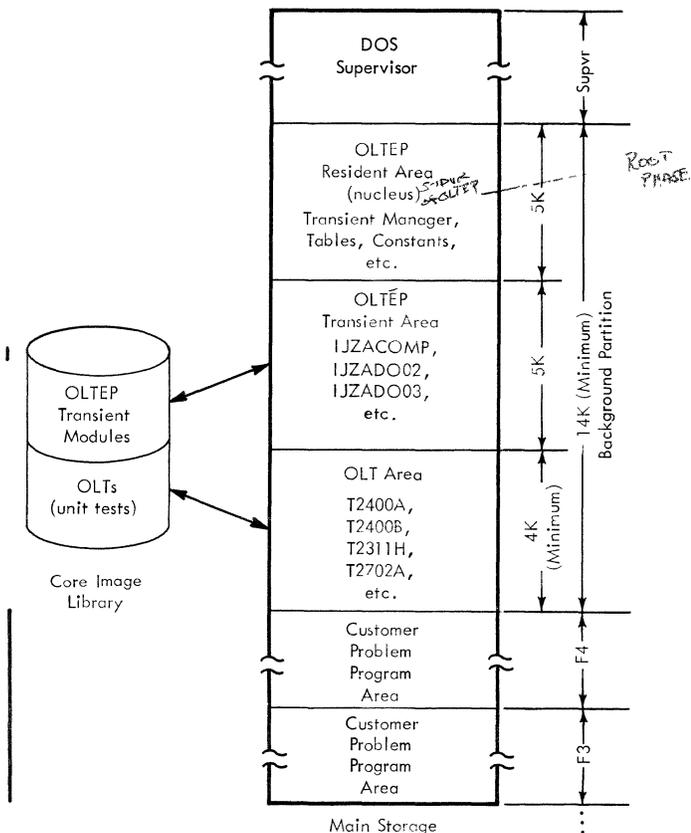


Figure 1-2. OLTEP Structure (Without RETAIN/370)

## Online Tests (OLTs)

The IBM Customer Engineer supplies the OLTs on magnetic tape or cards. You must catalog the desired tests into the core image library before they can be executed by OLTEP. See Generating an OLTEP Library for the cataloging procedures.

OLTs are called into main storage for execution by the scheduler portion of the OLTEP nucleus. Tests normally do not exceed 4K. However, those that do exceed 4K are loaded if the allotted background partition is large enough. If the partition is not large enough, an error message is issued and the OLT is bypassed.

OLTEP provides a facility that allows the OLT to be divided into a root segment and associated test modules. Although the root segment must remain in main storage for the duration of a particular test, the supporting test modules are loaded from the core image library by OLTEP as they are needed.

Information about individual tests appears in the writeup that accompanies them.

**Note 1:** Device tests that are run for tape are for the physical device itself, rather than for any control unit to which a device may be attached.

**Note 2:** Most OLTs are designed to test channel attached devices. Unless the OLT writeup specifies support of native attachments testing should be limited to channel attached devices. OLTs run on natively attached devices can cause misleading error messages unless the OLT has been designed for such testing.

## Operator Communication

OLTEP gives the operator maximum control in running the tests. If you have a console device assigned to the system, and do not choose to enter the test-run definition by card, a communications interval is established. Once the communications interval is initiated, OLTEP issues a message requesting the operator to enter the test-run definition. At this time the operator can enter or change the testing procedure, request prompting, request a dump, terminate OLTEP, specify equate or start Retain/370 (see Module 3). The four methods of initiating a communications interval are:

1. The initial communications interval automatically occurs when OLTEP is first called in. At this time the initial test-run definition is entered.
2. You can invoke an interrupt communications interval when the CIT is running by pressing the Interrupt key on the console.
3. The first error communications interval occurs when an error is encountered during a test. The operator can suppress it by entering NFE (No First Error) as an option in the test-run definition.
4. The test completion communications interval automatically occurs when the specified testing procedure ends.

## Data Protection

OLTEP assumes much of the responsibility for the protection of customer data. The data-protection modules within OLTEP protect customer files and storage during the online tests. The objectives of the data-protection modules in the order of their priority are to:

1. Protect customer data.
2. Allow effective testing within constraints of data protection.
3. Minimize manual interventions.

All requests for device testing are channeled through the data-protection modules. The following sections show the data-protection measures invoked for specific device types.

### All Devices

OLTEP performs a device-ready check on all devices to satisfy the Ready requirement for the tests and to allow execution of the data-protection checks. If the device is not ready, OLTEP issues a message containing the Channel Status Word (CSW) and sense information. The operator is then given options to control further testing of the device.

**Note:** For a detailed description of the messages and replies, see OLTEP Messages in this publication.

## Tape Devices

OLTEP makes three checks before testing a tape device:

1. **Standard Label:** OLTEP checks for a standard label to insure a test volume is mounted. If a standard label is not recognized, OLTEP checks for a standard label in ASCII mode. If a standard label is not recognized at this time, a message is issued stating that a nonstandard labeled tape is mounted. The operator then has the option to bypass the test, retry the test after mounting a different tape, or to proceed testing with the tape that is mounted.

**Note:** If no bit pattern is read (tape is new or clean), OLTEP will read to the end of the reel, rewind, and retry. To avoid this, some bit pattern must be written on new or clean tapes.

2. **Security:** OLTEP checks the security byte in the VOL 1 label. If security protected, a message is issued stating the volume cannot be used as a scratch. The operator can bypass the test or retry the test after mounting a different tape.
3. **Expiration Date:** The expiration date is checked to determine if it has expired. If it hasn't, a message is issued indicating that volume has unexpired date. Options are then available to bypass the test, retry the test after mounting another tape, or to proceed testing with that tape.

When testing of a tape device is completed or discontinued, and a standard label has been successfully read before testing, OLTEP rewinds the tape and writes a standard label. The following records are written:

VOL1	Volume S/N	70 bytes of zeros
------	------------	-------------------

HDR1	76 bytes of zeros
------	-------------------

OLTEP does not attempt to write a label if a standard label was not read at the beginning of the test.

### Unit Record and TP Devices

The device-ready check is the only data-protection task performed on unit record and TP devices.

## Direct Access Storage Devices

The device-ready check is the initial data protection task performed on all direct access devices. If the device is ready, OLTEP determines the type of DASD being tested, and performs the data-protection tasks for that device type.

### IBM DASD Other Than 2321

OLTEP performs checks to determine if the volume can be tested in non file protect mode, file protect mode, or is not to be accessed at all by the OLT.

Non-file Protect Mode results if the volume has been identified as a Customer Engineer (CE) volume, and is not shared with another partition.

File Protect Mode (FPM) results if: (1) the volume has been identified as a CE volume and is shared, or, (2) it is not a CE volume, but has a standard label and is not security protected, or, (3) the volume does not have a standard label and the operator has replied 'P' for PROCEED to the E139D message.

Unaccessible (by the OLT) volume, identified as not a CE volume and: (1) has a standard label but is security protected or, (2) has not a standard label and operator responds 'B' for BYPASS to the E139D message.

This presents three levels of protection or testing:

1. Volume Security Byte is ON -- no testing can proceed on this pack.
2. Non-CE PACK, Volume Security Byte is OFF or CE PACK is shared -- Testing proceeds in FPM. (Testing can proceed in non-FPM with operator permission 'See SPACE ALLOCATION paragraph below.))
3. CE PACK (Non-shared) -- Testing proceeds in non-FPM.

Note: System protection of system secure data sets is bypassed and system secure data sets may be destroyed if the volume is not security protected. (See SPACE ALLOCATION paragraph below.)

### IBM 2321

If the device to be tested is an IBM 2321, OLTEP ensures that the CE volume is mounted in bin 0, then turns control over to the test section. If OLTEP finds that the volume mounted in bin 0 is not a CE volume, no testing can be performed. OLTEP then gives the operator the option to bypass the test, or to retry the test after mounting a CE volume.

## Space Allocation

Before Write testing is performed on a direct access volume other than a CE volume, and the device is not shared, the OLTEP issues a message asking if volume data can be destroyed. If the reply is YES testing proceeds in non-FPM. Otherwise, testing proceeds in FPM.

Note: If testing is in non-FPM, the test section may reformat the volume. Reformatted volumes are not recognized as usable by the operating system.

## File Protect Mode (FPM)

File protect mode allows testing of a direct access device without destroying volume data. While in FPM, OLTEP scans the channel program for any Write commands that violate data security or protection. OLTEP can perform only a limited test when operating in this mode.

## Non-File Protect Mode (Non-FPM)

When operating in non-FPM, OLTEP allows the test to perform Write and Read Data operations on the device. Cylinders in the CE volume are allotted for this function. The same cylinders are used on both CE volumes and scratch volumes.

## Accessing of Error Recording Data

OLTEP can retrieve records from an environmental recording data set for use by the OLT. OLTEP has the ability to access any one of the following data sets:

1. DCS System Recorder File (SYSREC).
2. DCS History Tape.
3. CS History Tape.

History tapes are created by the Error Recording Environmental Procedures (EREP).

Upon receiving a request from the OLT for this information, OLTEP asks the operator to identify what media the data set resides on. If the operator responds to access the SYSREC file, OLTEP will perform all the necessary functions to access the file. If the EREP history tape is to be used, OLTEP requests the operator to mount the tape on a free device and enter the device address. You must assign this device to the background partition, but do not include it in the test-run definition.

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## Module 2: OLTEP Operating Procedures

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## System Preparation

The following system generation macro parameters apply to OLTEP:

FOPT OLTEP=YES      Default.  
FOPT OLTEP=NO      If OLTEP support is not desired.  
FOPT OC=YES      (1) Forced when OLTEP=YES is specified.  
                    (2) Allows you to force a communications interval using the console interrupt.  
FOPT RETAIN=YES    This option permits the use of the RETAIN/370 function of OLTEP.  
FOPT RETAIN=NO    Default.  
                    YES  
FOPT IT= BG      Will improve the performance of OLTEP in a multiprogramming environment.

You must catalog OLTEP, Configuration Data Sets, and Online Test Section into the core image library before you can run the tests. Procedures to catalog OLTEP are in DOS System Generation, GC33-5008. Procedures for creating a link-editable file containing the desired Configuration Data Sets and Online Test Sections can be found in SOSP Operator's Guide (D99-SOSPB-04).

### Timer and TOD Clock

If TOD=YES is specified in the SYSGEN, the timer must remain enabled during the running of OLTEP, and the TOD clock must be set and operational. If Timer or TOD clock becomes non-operational, OLTEP may enter an enabled WAIT state or hang in a loop waiting for the Timer or TOD clock to step. If this condition occurs, cancel the CITEP JOB and insure that the Timer and TOD clock are operational before attempting to restart OLTEP.

### Generating the OLT/CDS Library

The Customer Engineer must order a diagnostic tape from PID. The tape contains:

- The OLTs.
- OLISEP, a stand alone version of CITEP.
- The Stand-Alone Service Program (SCSP) that is used to create a job stream to

catalog the OLTs and CDSs into the core image library.

Note: SOSP can also be executed as though it were an OLT under OLTEP. If SCSP is required to be run, the CE should be consulted. SOSP Release 4.1 or higher is required.

This material can be obtained on a disk pack if there are no tape devices on the system.

The EDITDCS program of the Stand-Alone Service Program is used to create OLT and CDS input for the DOS Linkage Editor. This input can be created on disk or tape.

The job control statements required to link the OLTs and CDSs into the core image library are as follows:

(1) Tape Input  
    // JOB XXXXXXXX  
    assign work files for Linkage Editor if necessary  
    // assign SYSIN,X'CUU'  
    where CUU is tape address  
    EOE  
  
(2) Disk Input  
    // JOB XXXXXXXX  
    assign work files for Linkage Editor if necessary  
    // DLBL IJSYSIN,'EDITPACK'  
    assign SYSIN,'CUU'  
    where CUU is disk address  
    EOE

The OLTs and CDSs are required to run tests under OLTEP. The CE will create the library using the specified procedure. This procedure is also used to add new OLTs and/or CDSs when devices are added to the system.

### Unreferenced Symbols

A DCS link edit of the OLT Library may produce unreferenced symbols. These symbols are used to control the OLT Library and should be ignored.

### Device Preparation

Certain device setup procedures are necessary before testing to insure protection and security of customer data. The following sections show the requirements for individual device types.

#### All Devices

All devices should be in the Ready status with no manual intervention required.

## Tape Devices

Mount a standard labeled scratch tape, either EBCDIC or ASCII. If you do not mount a standard label tape, you are given options to bypass the test, mount another tape and try again, or to proceed testing with the tape that is mounted.

**Note:** If OLTEP recognizes a standard label at the start of the test, it writes one at test completion.

## Direct Devices: IBM DASD Other than 2321

If a Customer Engineer Volume is not available, you should mount a volume with serial number CEPACK on the device to be tested. Testing is restricted to File Protect Mode unless you reply R 04, 'YES' to the 04E120D message (CAN VOL DATA ON XXX BE DESTROYED? Reply YES or NO), and the device is not shared. Testing then proceeds in non-file protect mode.

**Note:** File protect mode allows only limited testing. No Write operations are performed. Some sections require a Customer Engineer Volume. See OLT documentation for this requirement.

## Direct Access Devices: IBM 2321

You must mount a CE cell in bin 0, subcell 19. If you do not mount the cell, the device cannot be tested.

## Terminal Devices: Local 3270

A special BTAM facility allows OLTEP to test devices of a locally attached 3270 display system without requiring the BTAM application program controlling it to terminate. This facility requires a procedure from the system console prior to beginning OLTEP. This procedure is described under the Local 3270 Display System description in the section 'LOCAL DEVICE-DEPENDENT CONSIDERATIONS' in BASIC TELECOMMUNICATIONS ACCESS METHOD GC30-5001.

## System Operation With Console Input

During initiation, OLTEP determines if card input is selected. If it has not been selected, all communication with the CE is through SYSLOG (see section "System Operation With No Console" if SYSLOG is not assigned to console). If card input was not specified, the initial communications interval is invoked, and the following messages are issued:

E102I OLTS RUNNING

E134I WARNING-DASD  
VOLUME LABELED CEPACK  
NOT PROTECTED FROM WRITE.

E107I OPTIONS ARE (list of default options)

01E105D ENTER DEV/TEST/OPT

You can now enter the device(s) to test, the test(s) to run, and the option(s) to apply. This is the test-run definition. The selected test is then read from the core image library and executed.

Other ways that you can initiate a communications interval are:

- The first error communications interval occurs if an error is detected while testing. You can suppress it by entering NFE as an option in the test-run definition.

**Note:** First error option is ignored if the no print (NPR) option and either the error loop (EI) or test loop (TL) option is specified.

- You can initiate an interrupt communications interval by pressing the Interrupt key on the console when the CIT is running.
- A test completion communications interval occurs automatically when the specified testing procedure ends.

At communications intervals, you can initiate these actions:

- All intervals --  
Run another test. Any or all test entries can be changed. If a field is omitted, the entry specified in the previous test-run definition is used.  
Dump the real background partition by entering R 01, 'DUMP'.  
Request prompting. See Prompting.  
Terminate OLTEP by entering R 01, 'CANCEL'.  
Request Equate CDS facility by entering R 01, 'EQU' (See Device Equates).  
Initiate Retain/370 by entering R 01, 'REI'. (See module 3.)  
Cancel Retain/370 by entering R 01, 'STOPREI'. (See module 3.)
- Test Completion --  
Repeat the test by entering R 01, '///'. (Not valid at initial communication

interval.) The device, test, and option fields specified in the previous test-run definition are used.

- First error or external interrupt -- Continue test at point of interruption by entering R 01,'///', or R01,'//option change/"/>.

Initiate dynamic CE communications by entering R 01, 'TALK'.

All messages to and from the console device are printed on the SYSLST device.

### System Operation With Card Input

When card input is selected, communication intervals other than first error or

interrupt will read from SYSIPT. The first error and interrupt communication intervals remain the same and will appear on SYSLOG. If the last card is not CANCEL a communication interval will be given on the console. The allowable replies are the same as specified in the previous section.

### System Operation With No Console

If SYSLOG is not assigned to a console, input is automatically taken from SYSIPT. No request will be presented on SYSLOG and OLTEP will terminate when all cards have been read. If operator communication is required by the OLT or by OLTEP, the OLT will be bypassed or OLTEP will be canceled.

## Calling OLTEP

### All Systems

Figure 2-1 shows the job control statements necessary for the execution of OLTEP.

STATEMENT	Comments
// JOB XXXX	Mandatory.
// ASSGN SYSnmm,X'cuu'	One ASSGN statement is necessary for each device tested or accessed by a test. None is required if the device was permanently assigned.
// UPSI 01	This statement is necessary if a console device is available but the test-run definition is to be entered via the input job stream.
// EXEC IJZADOLT, REAL,[SIZE=NK]	Mandatory, OLTEP will run only in real. Size = parameter must be minimum of 14K or 18K if RETAIN is invoked. This will allow a 4K CIT to execute. If OLIS larger than 4K are to be run, the SIZE = parameter must specify a size equal to 10K plus the size of the OLT. The size specified must be multiple of 2K.
dev/test/opt/	This statement is included if the test-run definitions are entered via the input job stream.
/*	Mandatory.
/&	Mandatory.

Figure 2-1. Job Control Statements

The format of the ASSGN statement is:

```
// ASSGN SYSnmm,X'cuu'
```

SYSnmm = symbolic unit name (SYS000-SYS221)

c = channel number

uu = unit address

Note: If SYSLOG is not a console, card input must be used.

## Running the Tests

The reply to the '01E105D ENTER DEV/TEST/OPT/' message, the test-run definition, consists of three fields:

1. Device Address Field (DEV). This field contains the physical address or symbolic name of the device(s) to be tested. Symbolic names are supported for the purpose of designating a remote TP unit as the test device.
2. Test Field (TEST). This field contains the name of the tests to be run and may be divided into three subfields: test type, section, and routine.
3. Option Field (OPT). This field specifies options affecting both the test itself and the printed output of the test.

Each of the three fields is followed by a slash. The initial test-run definition, whether entered on card or via the console, must include information in the device and test fields. If you do not specify options, default options are supplied by OLTEP.

The correct reply format is:

```
R 01,'dev/test/opt/'  
DEV/TEST/OPT/ (for card input)
```

An example of a reply showing physical device addresses is:

```
R 01,'0181-0183/2400A/NFE,TL(10)/'
```

In this example, devices 181, 182, and 183 are tested by test section T2400A. The first error communications option is suppressed, and the Test Loop (TL) option is selected. The test runs 10 times.

Note: A symbolic name (for example, NYC01) can be used in a test definition to enter a remote TP device. When a group of devices is to be entered symbolically, each must be indicated as a separate entry (for example, NYC01, NYC02, NYC03).

At subsequent communications intervals, you can omit any or all of the fields. If you omit a field, the entry in the last test-run definition in which the field was present is used. If you omit both the device and test fields, the same test(s) are performed on the same device(s). However, if they are both omitted at a first error communications interval or interrupt communications interval, the test is reentered at the point where the error or interrupt occurred.

In all cases, three slashes must always be entered.

## Example

Previous test-run-definition entry  
R 01,'0181/2400A/TL(5)/'

Current test-run-definition entry  
R 01,'/2400C-E//'

In this example, we use the device selection and test option specified in the previous test run. However, routines C through E of the T2400 test are run this time instead of section A.

## Choosing the Devices

The device address field contains either the physical address or symbolic name (for remote TP devices) of the device to be tested. The two types of addresses that can be contained in the device address field are defined as follows:

1. Physical addresses -- contains either three or four digits. For example, you can enter device 181 as 181 or 0181. You must separate multiple entries in this field with commas and you can use the hyphen to indicate inclusive devices.
2. Symbolic names -- contain from one to eight characters and must begin with a character A thru Z, \$, #, or @. (Example: NYC01). A symbolic name may be one to eight characters long. Symbolic naming of a multiple or group entry can be done only by including each separate entry of the multiple or group separated by a comma.

The symbolic or physical device field can accommodate up to 16 devices and is terminated by a slash. Figure 2-2 shows examples of device selection.

Restrictions: If an input device is required by the test section for Data Input Support or retrieval of environmental recording information, you must not enter that device in the device-address field.

You must not enter physical addresses and symbolic names in the same device field entry. You must also not enter the same physical address or the same symbolic name more than once per entry.

If POWER is active, the device entry should not include any unit record devices assigned to SYSIPT, SYSRER, SYSPCH, or SYSIST. Testing of these devices will be bypassed if they are specified.

DEV Entry	DEVICE(s) Selected
0185/	185
NYC01/	(Defined in symbolic CDS)
0185-0187/	185, 186, and 187
NYC01, NYC02, NYC03/	(Defined in symbolic CDS)
0185, 0187-0189/	185, 187, 188, and 189
0181, 0282, 0283/	181, 282, and 283
/	Use device(s) assigned in previous test. (Note)
.NDR	No device required. (This must be a single entry.)
Note: The device address must be reentered if the device was bypassed in the previous run, or was invalid in the initial entry.	

Figure 2-2. Example of Device Selection

## Choosing the Test

The test field specifies the test(s) to run on the selected device(s). The field is terminated by a slash (/), and is composed of the following subfields. Figure 2-3 shows examples.

- **Test Type (required).** Specifies the type of I/O device to test. You can specify only one test type in a single test-run definition. If you want to run a test more than once, use the Test Loop (TL) option.

The test type includes the prefix:

- N - IBM Printer tests.
- R - IBM 2540 Reader tests.
- P - IBM 2540 Punch tests.
- T - All other tests.

If the prefix is omitted, T is assumed. No other prefix entry is valid.

- **Section (optional).** Individual sections of the test are indicated by an alphabetic character(s) within the range A-ZZZ. The maximum number of sections that can be run during any one test-run definition is 26. You must separate test section entries with a comma or hyphen (indicating inclusive sections). Multiple section entries are run in the sequence entered, duplicate entries cause a section to be repeated. If you specify a test section that cannot be found, an error message is issued, and testing continues with the next test section if one was requested. Consult the CIT writeup to determine what test sections are available.

If you omit the test section identification sections A through Z are attempted. If the test does not have sections A through Z, an error message is issued for each section that is missing. Those test sections that are present run normally.

- **Routine (optional).** OLTEP permits routine selection only when you specify a single test section. There is a maximum of 255 routine selections allowed, and they are specified by number. You can enter them in any sequence, but they will run in numeric order. You must separate these entries with a comma or hyphen. The routine numbers are found in the writeup that accompanies the OLT.

TEST ENTRY	TEST(S) SELECTED
T2311/	Run all T2311 tests within the range A-Z. (Ncte 1)
SOSPB/	Selects Stand-Alone Online Test Support Processor Program
T2311A,C/	Run secticns A and C of test T2311.
T2311A-C,E,G/	Run secticns A,B,C,E, and G of test T2311.
T2311A,4/	Run rcutine 4 of section A, test T2311. (Ncte 2)
T2311A,4-7,2/	Run rcutines 2,4,5,6, and 7 of section A, test T2311. (Ncte 2)
P2540A,C/	Run secticns A and C of test P2540.
/	Use the same test(s) as specified in the previous test. (Cannot use initially).
<b>Note 1:</b> OLTEP attempts sections A through Z. A message is issued fcr each section that does not exist. Those which do exist are executed.	
<b>Note 2:</b> If a routine(s) is specified, only one section can be specified in that entry.	

Figure 2-3. Examples of Test Selection

## Choosing the Options

The option field identifies the options to use during the test run. Entries in this field are separated by commas. You can enter the options, with the exception of EXT=, in any order. The EXT=option, when used, must be the last entry. A default option is used in place of any omitted entry in the initial test-run definition. On succeeding test runs, omitted entries use the options selected in the previous

run. Figure 2-4 shows the available options with their default values.

## Example of OLTEP Operation

Figure 2-5 illustrates OLTEP operation in the background partition of a multiprogram environment. A console device is available, and console interrupts are permitted. The operator responses are underlined.

OPTION	ENTRY	DESCRIPTION	OPTION	ENTRY	DESCRIPTION
Testing Loop	<u>TL</u> (n) <u>NTL</u>	Recycle the test. If you specify a value (n), OLTEP runs the test the number of times indicated. If you do not specify a value, the test cycles 10 times. The maximum value allowed is 32,767 decimal. (See Note 1.)	First Error Communications	<u>FE</u> <u>NFE</u>	Forces a communications interval when the first error is encountered (see Note 3). A message is printed indicating the test being run and the device being tested. This is followed by the 01E105D message that allows you to: <ul style="list-style-type: none"> <li>• Change the device and/or test fields.</li> <li>• Continue the test by entering R 01,'///' or R 01,'/(Option change)/'.</li> <li>• Enter any OLTEP verb.</li> <li>• Cancel OLTEP by entering R 01,'CANCEL'.</li> </ul> <p>There cannot be a first error communication if a console device isn't available.</p>
Error Loop	<u>EL</u> (n) <u>EL</u> (1) <u>NEL</u>	Authorizes any error loop coded in the OLT to be executed the specified number of times. If you specify a value (n), the test loops the number of times indicated. If you do not specify a value, the test loops the number of times indicated in the preface of the OLT. If you specify the character I, a flag is set which indicates to the OLT, that it must loop indefinitely on the error. You can terminate the loop by specifying NEL following a request for communications. (See Note 1.)	Manual Intervention	<u>MI</u> <u>NMI</u>	Informs the OLT section to run all manual intervention routines within the test request. (Manual Intervention and RE are mutually exclusive options.)
Print	<u>PR</u> <u>NPR</u>	Print messages from the OLT. If you enter NPR, all messages originated by the OLT and normally designated for SYSLST are suppressed. (See Note 2.)	Remote	<u>RE</u> <u>NRE</u>	RETAIN/370 only. If RE is specified, OLTEP is controlled by the remote specialist, who enters NRE to return control to the on-site customer engineer.
Error Print	<u>EP</u> <u>NEP</u>	Print diagnostic error messages from the OLT. The FE option overrides NEP when a first error is encountered (once per section). (See Note 3.)	Trace	<u>TR</u> <u>NTR</u>	Trace all functions called by OLT. (See Note 4.)
Control Print	<u>CP</u> <u>NCP</u>	Print OLT start and termination messages on SYSLST and SYSLOG.	EXT=	<u>EXT=</u>	Information following this option is passed to the OLT section by way of a 56-byte buffer. This information must be the last entry in the option field, and can contain any character but a slash.  EXAMPLE:  R01,'181/2400C/TL,EXT=BLOCK 4FFPRINT/'  BLOCK 4FFPRINT goes into a buffer area within OLTEP, and then passes on to the OLT section.
Parallel Print	<u>PP</u> (n) <u>NPP</u>	Use the console device, in addition to SYSLST for OLT messages. Four levels of print are available on the parallel printer by entering one of these numbers at (n).  0 HEADER only. 1 HEADER, DESCRIPTION, and COMMENTS. 2 HEADER and RESULTS. 3 HEADER, DESCRIPTION, COMMENTS, and RESULTS.			

The default options are underlined.

Note 1: The FE option overrides the TL and EL options, unless NPR is also in effect. However if you enter R 01,'///' or R 01,'/(option change)/' at a first error communications interval, the TL and EL options, if specified, are in effect.

Note 2: NPR without EL and/or TL is ignored.

Note 3: Error print and FE are ignored if no print and either EL or TL are specified.

Note 4: Routine-to-routine linkage is not traced. Do not attempt to use Trace function when SYSLST is assigned to the test device.

Figure 2-4. Table of Options

```

BG assgn sys001,x'181'
BG assgn sys002,x'182'
BG //exec 1jzadolt,real,[size=NK] (Minimum 14K)
BG E102I OLTS RUNNING
BG E134I WARNING - DASD VOLUME LABELED CEPACK NOT PROTECTED FROM WRITE
BG E107I OPTIONS ARE NTL,NEL,NPP,FE,NMI,EP,CP,PR,NRE,NTR
BG 01E105D ENTER -- DEV/TEST/OPT/
BG r 01,'181/2400a//'
BG E119I NON-STANDARD TAPE LABEL 0181
BG 04E139D REPLY B TO BYPASS, R TO RETRY, P TO PROCEED (MAY DESTROY DATA)
BG r 04,'p'
BG E158I S T2400A $ UNIT 0181
BG E129I FIRST ERROR COMMUNICATION T2400A 001 UNIT 0181
BG E107I OPTIONS ARE NTL,NEL,NPP,FE,NMI,EP,CP,PR,NRE,NTR
BG 01E105D ENTER -- DEV/TEST/OPT/
BG r 01,'182//nfe,t1(2)/'
BG E158I *T T2400A $ UNIT 0181
BG E158I S T2400A $ UNIT 0182
BG E158I T T2400A $ UNIT 0182
BG E158I S T2400A $ UNIT 0182
BG E107I OPTIONS ARE TL,NEL,NPP,NFE,NMI,EP,CP,PR,NRE,NTR
BG 01E105D ENTER -- DEV/TEST/OPT/
BG R 01,'/2400c,e/ntl/'
BG E158I *T T2400A $ UNIT 0182
BG E158I S T2400C $ UNIT 0182
BG E158I T T2400C $ UNIT 0182
BG E158I S T2400E $ UNIT 0182
BG E158I T T2400E $ UNIT 0182
BG E107I OPTIONS ARE NTL,NEL,NPP,FE,NMI,EP,CP,PR,NRE,NTR
BG 01E105D ENTER -- DEV/TEST/OPT/
BG r 01,'cancel'
BG 1I00A READY FOR COMMUNICATIONS

```

OLTEP is loaded into the background partition.

Initial communications interval.

OLTEP finds a nonstandard labeled tape mounted on the test device.

Error encountered.

First error communications interval.

Console Interrupt key pressed.

Interrupt communications interval.

Test completion communications interval.

Figure 2-5. Example of OLTEP Operation

## Prompting

If you make a syntactical error when entering the test-run definition, one of the following messages is issued:

E106I INPUT DATA DOES NOT CONTAIN 3  
SLASHES  
OR  
E251I DUPLICATE ENTRIES IN DEVICE FIELD  
OR  
E252I SYMBOLIC NAMES AND UNIT ADDRESSES  
MIXED IN DEVICE FIELD  
OR  
E108I INVALID ENTRY IN DEV FLD--XXXXXXXX  
OR  
E112I INVALID ENTRY IN TEST  
FLD--XXXXXXXX  
OR  
E115I INVALID ENTRY IN OPT FLD--XXX

The XXXXXXXX in messages E108I and E112I indicate the portion of the entry that contains the error and can be up to eight characters in length. The XXX in message E115I is the entry in error and can be from 1 to 10 characters in length.

OLTEP then issues the next three messages:

E161I FOR HELP, ENTER PROMPT XXXX TO  
SUBSEQUENT DEV/TEST/OPT/ MESSAGE

E107I OPTIONS ARE XXX, XXX, ETC.

01E105D ENTER DEV/TEST/OPT/

At this time you can reenter the test-run definition, or request prompting by entering one of the following:

R 01,'PROMPT DEV' - Examples of the  
device field.  
R 01,'PROMPT TEST' - Examples of the  
test field.  
R 01,'PROMPT OPT' - Examples of the  
option field.  
R 01,'PROMPT ALL' - Examples of all  
three fields.  
R 01,'PROMPT' - Examples of all  
three fields.

If you enter R 01,'PROMPT DEV', the following examples print on the console:

E147I EXAMPLES OF DEVICE FIELD

0181/	TEST DEVICE 181
0185-0187/	TEST DEVICES 185, 186, AND 187
CHICAGO1	TEST SYMBOLICALLY NAMED DEVICE, CHICAGO1
285-286, 184	TEST DEVICES 285, 286, AND 184
.NDR/	NO DEVICE REQUIRED FOR TEST

/ (SLASH  
AICNE)  
E107I TEST PREVIOUSLY  
SELECTED DEVICES  
OPTIONS ARE XXX,  
XXX, ETC.

01E105D ENTER DEV/TEST/OPT/

You can now reenter the test-run definition.

You can invoke prompting at any time the '01E105D ENTER DEV/TEST/OPT/' message is issued.

## Device Equates

When it is necessary to test a device for which there is no CDS, the equate function may be used if there is a CDS for another device address which has an identical configuration (i.e., the only difference is the device address). This function is designed for the situation where a block of devices is on a switched channel. The equate function allows only one CDS to be generated for each device rather than a CDS for each possible device address.

To invoke the Equate function, respond with R 01,'01EQU' to message E105D. If a test section is active, the section will be abnormally terminated. In any case the message 04E394D is issued to ask for equates. More than one equate can be entered per line, but they must be separated by a slash. The equates may be entered in three different formats. In each format, the device address may be specified as three or four digits. Examples of the formats are:

- (1) 280=180  
The CDS for 180 will be used whenever 280 is specified as the test device.
- (2) 272, 182, 490=191  
The CDS for 191 will be used for devices 272, 182, and 490.
- (3) 190-195=290  
The CDS for 290 will be used for devices 190, 191, 192, 193, 194, and 195.

A maximum of sixteen equates may be active at one time. To delete an entry from the table, equate the device to be deleted to itself (i.e., 180=180). To clear all entries, enter 'CLR' in response to message 04E394D. An example of the response to the 04E394D message would be:

R 04,'CIR/280=290/191-194=370/272,275=390'

This would clear the present equates, then equate the devices that are specified. Message 04E394D will then be issued again, allowing more equates to be entered. When no more equates are to be entered, the verb 'END' must be entered. 'END' may be entered by itself or on the same line as an equate (i.e., 180=208/END). END causes the active equates to be printed on the console for operator verification. Equates remain active until 'CLR' is entered or they are individually deleted (i.e., equated to themselves) or OLTEP is canceled.

After 'EQU' has been invoked, a device entry is mandatory to the next 01E105D message.

### Special Operating Considerations

When running printer tests, assign SYSIST IGN or assign SYSIST to other than the test device. See also Running OLTEP With Power in this section.

Some OLTs require special operating considerations. These tests are identified by a dollar sign (\$) after the section field of the start and terminate messages.

example: S T2400A \$ UNIT 0182 DDDDDDDD  
T T2400A \$ UNIT 0182 DDDDDDDD

The following apply only to these tests:

- A first error communications interval cannot occur if either the Error Loop (EL) or No Error Print (NEP) options are specified.
- You may not specify a value with the EL option. If you enter the EL option and an error occurs, the test loops on the error indefinitely. There are two ways to terminate the error loop:
  1. Force a communications interval with the External Interrupt key. This is effective only if interrupts are permitted, and the error loop is large enough to sense for them.
  2. Cancel the background partition using the system commands.
- Direct access volumes cannot be reformatted if the test volume does not have a volume serial number of CEPACK. In this case, testing is restricted to file protect mode.

- The following messages cannot occur:

04E120D  
E198I  
E100I

### Quiesce Mode

Some functions requested by the OLT require that all jobs in the foreground partition be temporarily stopped. If TP is not active on the system, CLTEP issues a message asking if the foreground partitions can be quiesced. If you reply R 04,'NO', CLTEP informs the test section that the requested function is not available. If you reply R 04,'YES', CLTEP issues a message requesting that the foreground jobs be stopped. You must now give the operator commands to stop all jobs in the foreground partitions. CLTEP returns control to the test section after it ensures the foreground partitions are quiesced. If you reply R 04,'YES', but do not quiesce the foreground partitions, OLTEP cannot continue. If TP is active on the system, the test section is informed that the requested function is not available.

You can find the procedure to quiesce the system in the writeup for message E222I.

### Line Connection Routine

In order to execute on line tests for remote teleprocessing devices, OLTEP provides the capability for establishing a line connection between the Transmission Control Unit (TCU) and the remote terminal under test by means of a Line Connection Routine. CLTEP determines the sequence of I/C commands (channel Program) needed to establish a line connection from information contained in the Configuration Data Set for the remote terminal under test.

In some instances, in order to obtain a line connection, you may be required to complete the line connection of a teleprocessing device by dialing. The procedure to be followed is found in the writeup for messages E405I and E406I.

### Reply Codes

All DCS CLTEP two-way messages require response with the appropriate routing code. Failure to insert the proper routing code will result in message E175I being printed. A two-way message requiring a reply can be identified by the message number followed by the letter 'D'. When this occurs, the operator/CE should reply with:

R XX,'reply text'

Where, the XX is the routing code. The appropriate routing code for a two-way message immediately precedes the message ID.

**Example A:**

For 01E105D ENTER DEV/TEST/OPT, the routing code is 01.

**Example B:**

For 04E199D INCORRECT REPLY, the routing code is 04.

Note: When in a two-way message the operator is asked to reply with EOB (end of block), the reply should be R XX, ''. The quotes (") with no intervening text or blanks signifies end of block to OLTEP.

## Running OLTEP With Power

The following procedures are recommendations for running OLTEP with POWER:

1. To test devices running OLTEP under POWER with the exception of SYSIST, SYSPCH, SYSRDR or SYSIN devices. In order to see diagnostic messages immediately use the PP(3) option in the option field of the DEV/TEST/CPT/ statement. This option causes all messages to the printer to also be printed on the console.
2. To test SYSIST, SYSPCH, SYSRDR or SYSIN devices, use the following job stream:

```
// JOB OLTEP
// ASSGN SYS006,X'00C' (need if
// SYSRDR=X'00C')
// ASSGN SYSPCH,UA
// ASSGN SYSIPT,UA
// ASSGN SYSIST,IGN
// ASSGN SYSRDR,UA
/£
```

The unassigning of the units in the above job stream will depend on which unit is to be tested. If the reader is to be tested and it is spooled by POWER, the unassigning of SYSRDR should be the last statement. If SYSRDR has been unassigned as above, no more cards will be read from the reader till the assignment is reset. Therefore, the following should be keyed in through the ccnscl:

```
// EXEC IJZADOIT,REAL,{SIZE=nnk,
// where 14K is minimum}
r 01,'00C/TEST/OPT,PP(3)/' (Perform
// OLTEP test)
r 01,'CANCEL' (end OLTEP)
// RESET SYSRDR (resume reading
// cards from reader)
```

Note: The DUMP verb and TR option will not work because of the above SYSIST assignment of IGN.

3. To test unit record devices being used by POWER use the following job stream:  
// JCB OLTEP  
// PAUSE STOP BG AND ENTER 'Pxxyyy'  
(where XX=EG,F1,F2,F3,F4 and  
yyy=FUN,PRT,RCR).  
//  
// EXEC IJZADOIT,REAL  
/£

P (stop) commands are necessary to terminate present operation of the device and are accepted by the Attention Routine (AR). Multiple P (stop) commands may be necessary if multiple devices are being tested. To re-start the background enter the command START BG to the next AR.

Use // ASSGN statements to unassign devices as in Item 2.

Note: Item 2 and 3 can be combined in most cases when POWER uses the same device as EG SYSIST, SYSPCH, SYSRDR.

## Module 3: OLTEP RETAIN/370

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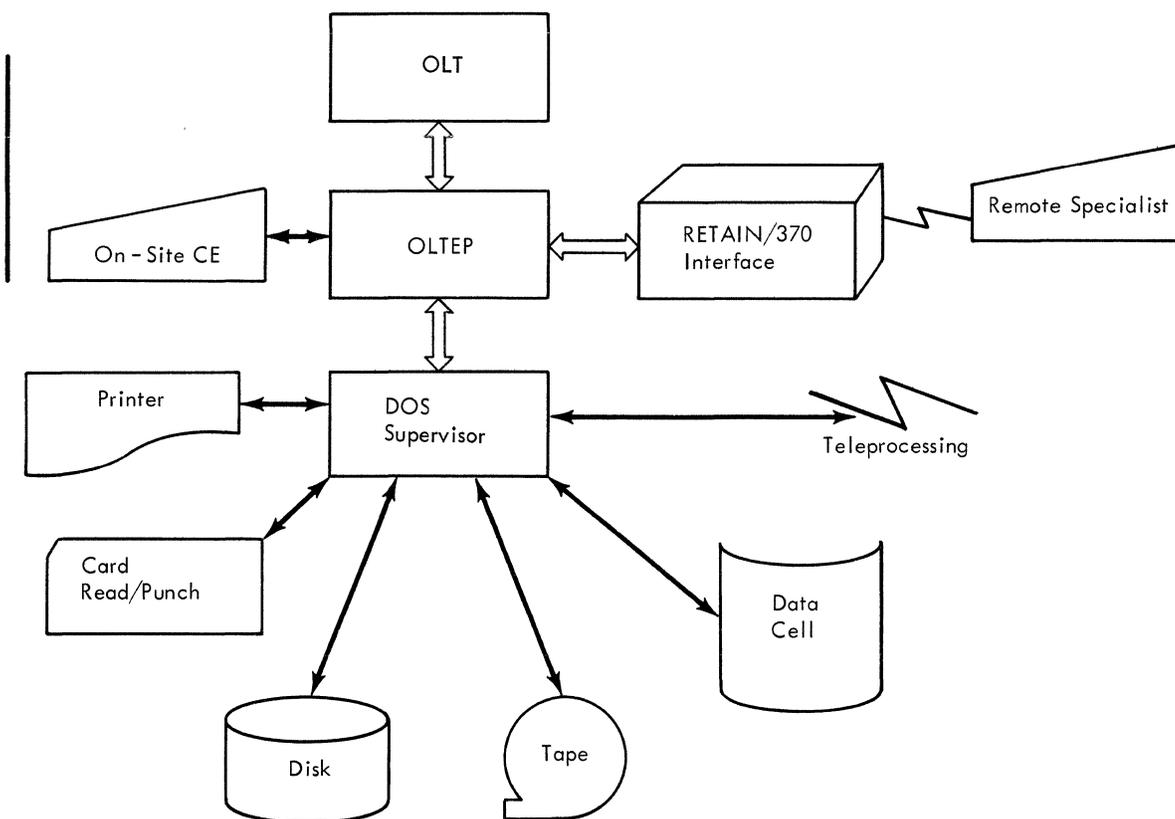


Figure 3-1 OLTEP System Relationship With RETAIN/370 Active

## Function

The Remote Technical Assistance Information Network for System/370 (RETAIN/370) is an optional function of OLTEP that enables a remote specialist to control and/or monitor the online test and to analyze the results. It provides a three-way communications link between the on-site IBM Customer Engineer, a remote specialist, and OLTEP (Figure 3-1).

This OLTEP function can benefit the IBM Customer Engineer in analyzing system failures. It gives him the assistance of a highly trained and experienced specialist who may not be available on short notice at a customer location.

## RETAIN/370 Requirements

You must meet the following requirements before you can include RETAIN/370 in the system as part of OLTEP.

## Machine Configuration

- System/370 Model 145 or 155.
- IBM 2955 Teleprocessing Control Unit with an IEM MODEM housed internally (RPQ 858389).
- Terminal Adapter, Type I or II (feature 4640) with a base speed of 600 bps (feature 9582).
- A voice grade dial-up line with a data access arrangement device must be supplied by the telephone company.
- A 3210-3215 or program compatible console must be assigned to the SYSLOG device.
- An optional 3-channel manually operated switch can be installed to enable multiple systems to be tested by the remote specialist (RPQ 858388).

## Software Requirements

### System Generation

If RETAIN/370 support is desired, FOPT RETAIN=YES must be specified at system generation time. The default is FOPT RETAIN=NO.

### Main Storage Requirements

The RETAIN/370 Interface (REI) requires an additional 4K in the background partition. Therefore, you must allocate a real background partition of at least 18K if RETAIN/370 is to become active. Figure 3-2 shows main storage allocation for OLTEP and the RETAIN/370 Interface. When OLTEP is initiated, the size equal parameter on the executive statement must be a minimum of 18K.

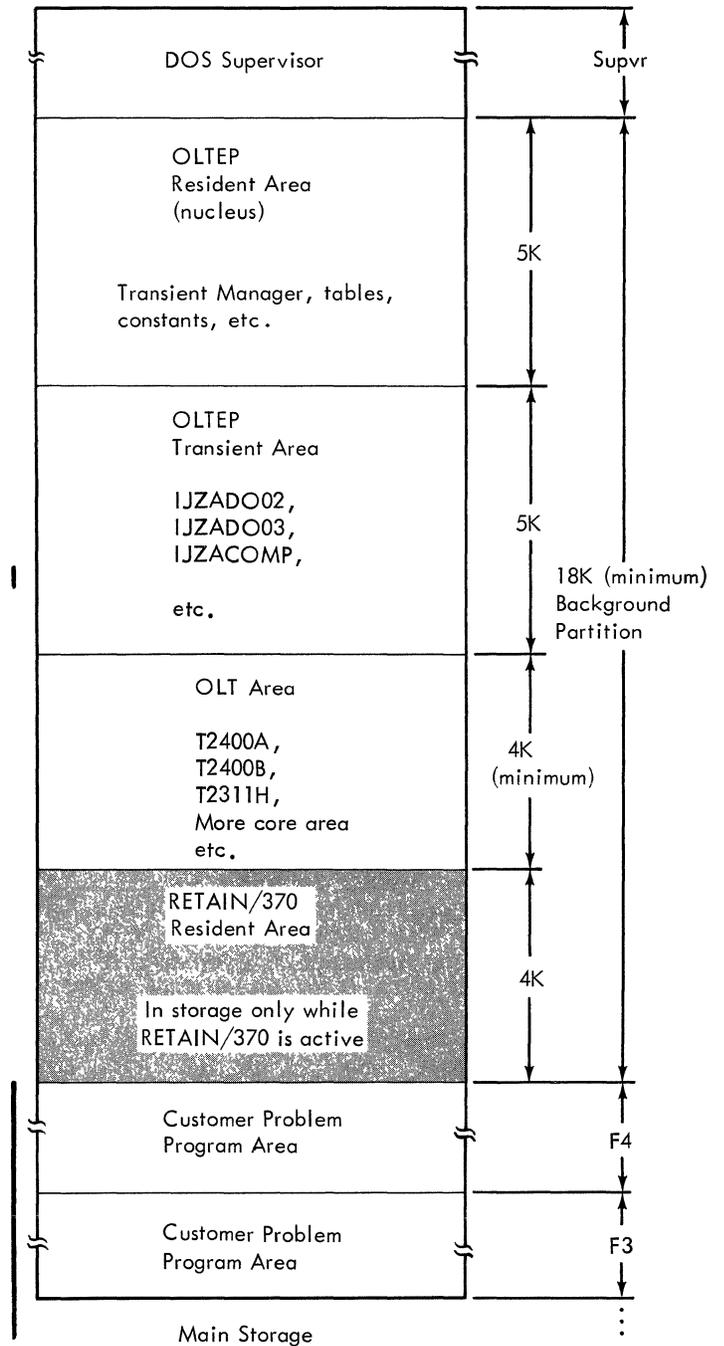


Figure 3-2. OLTEP Storage Allocation With RETAIN/370 Active

## Operation

The on-site CE initializes OLTEP in the normal manner using the following JCI:

```
// JOB OLTEP
// ASSGN SYS005,X'cuu' (Assigns the IBM
  2955 TCU to SYS005)
// ASSGN SYSnnn,X'cuu' (Assigns the device
  to be tested)
// EXEC IJZADOLT,REAL,[SIZE=NK] (Minimum
18K)
/*
/£
```

The on-site CE now enters R 01, 'REI' in response to the 01E105D message (ENTER DEV/TEST/OPT/). This causes the RETAIN/370 resident module to be loaded into main storage and become active. Once active, RETAIN/370 performs the following initialization:

1. Checks for an IBM 2955 device assignment in the Physical Unit Block (PUB).
2. Interacts with the operator to establish a teleprocessing connection with the remote analysis center.
3. Sets internal flags in the supervisor to indicate RETAIN/370 is active.

If this initialization is not successful, an error message occurs giving the reason for the failure. If it is successful, the 01E105D message is again issued. The on-site CE now enters the initial test-run definition. (Note that the RETAIN device must not be entered in the device field as a test device if RETAIN is active). If he enters RE as an option, OLTEP accepts subsequent entries from the remote specialist.

The remote specialist can control the testing procedure by making entries in the test and option fields of the test-run definition. He can also request a dump, prompting, or terminate the RETAIN/370 interface. If he requests a dump, it is printed on the on-site CE's SYSLST device.

No Device Required (.NDR) is the only entry the remote specialist is allowed to make in the device field. To change a device address, he must return control to the on-site CE by entering NRE in the option field. The on-site CE then makes the change to the device field and returns control to the remote specialist by entering RE as an option.

Note: Entry of .NDR by remote specialist prohibits him from doing any further testing on the device(s) originally allocated to him by the on-site CE.

## Message Handling

All messages to the on-site CE's SYSLST device also print on the remote specialist's console. The data-protection messages, such as those that require manual intervention, can only be answered by the on-site CE.

When RETAIN/370 is active, a reply code of 03 is available for communication between the on-site CE and the remote specialist. You can enter this reply at any communications interval without affecting the testing procedure. The format of this reply is:

```
R 03,'message to other operator'
```

## RETAIN/370 Termination

Either the on-site CE or the remote specialist can terminate the RETAIN/370 interface by entering R 01, 'STOPREI' in response to a 01E105D message. It also terminates if a permanent teleprocessing error is encountered. In either case, only the RETAIN/370 interface is terminated.

The on-site CE can terminate OLTEP after the RETAIN/370 interface is terminated. He does this in the normal manner by entering R 01, 'CANCEL' in response to the 01E105D message.

## Example of RETAIN/370 Operation

You can use this example as a guide in running OLTEP while using the RETAIN/370 feature.

```
On-Site CE  Activate IBM 2955 using meter
              key.
              Initialize OLTEP using the
              following JCI:
              // JOB OLTEP
              // ASSGN SYS005,X'020'
              // ASSGN SYS001,X'181'
                (test device)
              // ASSGN SYS002,X'182'
                (test device)
              // EXEC IJZADOLT,REAL,[SIZE=NK]
                (minimum 18K)
              /*
              /£
```

<u>OLTEP</u>	OLTEP is loaded.  E102I OLTS RUNNING E134I WARNING DASD VOLUME LABELED CEPACK NOT PROTECTED FROM WRITE E107I OPTIONS ARE NTL, NEI, NPR, FE, NMI, EP, CP, PR, NRE, NIR 01E105D ENTER DEV/TEST/OPT/	<u>CLTEP</u>	The same tests are repeated, and control returns to the on-site CE.  01E105D ENTER DEV/TEST/OPT/
<u>On-Site CE</u>	Call the remote specialist from the data phone, and go to data mode when he gives the signal.  R 01,'REI'	<u>Cn-Site CE</u>	R 01,'182//RE/'
<u>OLTEP</u>	The RETAIN/370 interface is loaded and the initialization routines are performed.  01E105D ENTER DEV/TEST/OPT/	<u>CLTEP</u>	The same tests are performed on device 182, and the RE option causes control to return to the remote specialist.  01E105D ENTER DEV/TEST/OPT/
<u>On-Site CE</u>	R 01,'181/2400A/RE/'	<u>Remote Specialist</u>	R 01,'/2400//'
<u>CLTEP</u>	Test section T2400A is performed on device 181. Subsequent input is accepted from the remote specialist.  01E105D ENTER DEV/TEST/OPT/	<u>CLTEP</u>	Test sections T2400A through T2400Z are now run on device 182.  01E105D ENTER DEV/TEST/OPT/
<u>Remote Specialist</u>	R 01,'/2400B-E//'	<u>Remote Specialist</u>	It is determined that further testing is not necessary, and RETAIN/370 is terminated.  R 01,'STOPREI'
<u>OLTEP</u>	Test sections T2400B through T2400E are run on the same device.  01E105D ENTER DEV/TEST/OPT/	<u>CLTEP</u>	The RETAIN/370 interface terminates, and control returns to the on-site CE.  01E105D ENTER DEV/TEST/OPT/
<u>Remote Specialist</u>	At this time it is determined that the same tests are to be run on device 182.  R 03,'enter device 182'  R 01,'//NRE/'	<u>Cn-Site CE</u>	Testing can be continued or CLTEP terminated by entering R 01,'CANCEL'.



**Module 4: OLTEP Messages**

## DOS OLTEP Messages

The following messages, issued by OLTEP, appear on both the message output device (SYSLSST) and the console device (SYSLOG). The OLT messages are not listed here, but you can find them in the writeup that comes with the individual test. OLT data prints on the SYSLSST device only, unless you specify the parallel printer (PP) option.

Note: SYSLSST must be assigned to a printer, a tape, or IGN.

The message format is:

EG rrEnnt 'message text'

where

EG Appears only when OLTEP is running in a multiprogramming environment. The EG indicates that the message pertains to the background partition in which OLTEP operates.

rr Is the reply code to use when responding to messages that require an immediate reply (D type). The codes are:

- 01 - For the 01E105D message.
- 03 - RETAIN/370 only. Used for communication between the on-site CE and remote specialist.
- 04 - For all other OLTEP and OLT messages.

E Indicates that the Executive program (OLTEP) is issuing the message.

nnn Is the three-digit message number.

- t Is the message type code where,
- I Indicates an informational message that requires no reply.
  - D Indicates a decision message requiring an immediate reply.

An example of a reply is:  
BG R 04, 'YES'

where BG is printed by the system if operating in a multiprogramming environment, and R 04, 'YES' is entered by the operator.

The following messages can occur during execution of DOS OLTEP:

E100I (information from the OLT)  
Cause: This message contains information that is passed from the test section to the operator.

System Action: Testing continues.

Operator Action: Not applicable.

Cause: The test section requests information from the operator.

System Action: Not applicable.

Operator Action: Enter the requested information. You may need to refer to the writeup that accompanies the OLT.

04E101D (request from OLT)  
Cause: The test section requests information from the operator.

System Action: Not applicable.

Operator Action: Enter the requested information. You may need to refer to the writeup that accompanies the OLT.

E102I OITS RUNNING  
Cause: The OLTEP program was loaded.  
System Action: Processing continues.

Operator Action: Not applicable.

01E105D ENTER-DEFV/TEST/OPT  
Cause: This is a request for you to define the testing procedure, that is, specify the device(s) to test, test(s) to run, and options to exercise. It also gives you the opportunity to cancel OLTEP, DUMP the background partition, or request prompting, REI, or EQUATE.

System Action: Not applicable.

Operator Action: Reply with the requested information. If entering a test-run definition, each of the three fields must be delimited by a slash (/) and must conform to the syntactical rules in Running the Tests. This message occurs at the initial communication interval to allow you to define the testing procedure and at subsequent communication intervals to provide for changing the testing procedure.

field entries are required. Any option not specified causes the default for that option to apply.

At later communication intervals, only those items that are to change require entries. A device field or test field consisting of only a slash causes the previous entry in that field to apply. The device address must be reentered if the device was bypassed in the previous run. Any option not specified causes the previously specified option to apply.

At any communication interval, a response of R 01, 'CANCEL' terminates OLTEP. A response of R 01, 'DUMP' causes the background partition to be printed.

The R 01, 'PROMPT XXX' reply (DEV, TEST, or OPT) causes OLTEP to print an example of the field specified. An R 01, 'PROMPT ALL' or R 01, 'PROMPT' reply causes examples of all three fields to be printed.

For RETAIN/370, a reply of R 01, 'REI' to message 01E105D by the on-site CE after OLTEP has been loaded will cause the RETAIN/370 interface to be loaded and initialization routines to be performed. If it is determined that further testing is not required, and RETAIN/370 is to be terminated, a reply of R 01, 'STOPREI' to message 01E105D will cause RETAIN/370 interface to be terminated and control returned to the on-site CE.

A reply message R 01, 'TALK' by the CE in response to message 01E105D will initiate dynamic CE communications with the OLT if the OLT does in fact support such communications.

A reply message of R 01, 'EQU' in response to message 01E105D will, if an OLT is active, cause it to be terminated. Then message 04E394D will be issued to allow the operator to enter equates. At the next communication interval a device file entry is mandatory.

E106I INPUT DATA DOES NOT CONTAIN 3 SLASHES

Cause: Your reply to message 01E105D, or the test-run definition card, contained more or less than the required three slashes.

This is probably a user error.

System Action: The 01E105D message follows if a console is available. If no console is available, OLTEP terminates.

Operator Action: Check for embedded blanks in the test-run definition. If the test-run definition is being entered by card, correct the card and reinitiate OLTEP. If the problem recurs when the input is known to be correct, do the following:

- Initiate a console request and respond 'CANCEL' to the 'READY FOR COMMUNICATIONS' message. This causes a DUMP.
- Have the console and DUMP listings available.

E107I OPTICNS ARE XXX,XXX, etc.

Cause: Indicates the test options that are in effect at the time the message is issued. It occurs immediately before a 01E105D or E250I message.

System Action: Not applicable.

Operator Action: Not applicable.

E108I INVALID ENTRY IN DEV FILE- XXXXXXXXX

Cause: An error was detected in the device field of your reply to the 01E105D message or test-run definition card. The XXXXXXXX indicate the portion of the field that contains the error. Possible errors include: invalid delimiter or device address, field omitted, invalid range of devices, or range exceeds 16 devices.

This is probably a user error.

System Action: This message is followed by the E161I and 01E105D or if card input, the next card is read.

Operator Action: Make a correct entry. If the problem recurs when input is known to be correct, do the following:

- Initiate a console request and respond 'CANCEL' to the 'READY FOR COMMUNICATIONS' message. This causes a DUMP.
- Have console and DUMP listings available.

E110I TESTABLE DEVICES MAY NOT EXCEED  
16

Cause: You have selected more than sixteen devices. Only the first 16 are tested. The remaining device entries are skipped.

This is probably a user error.

System Action: Not applicable.

Operator Action: If you desire to test more devices, specify them in your reply to the next 01E105D message.

E111I NO DEVICES AVAILABLE FOR TEST

Cause: None of the devices entered can be used as a test device. A device cannot be used as a test device if it is:

- (1) Not assigned to the background; or
- (2) Symbolically named and has no CDS; or
- (3) A unit record device assigned to SYSIPT, SYSRDR, SYSLST, or SYSPCH, and PCWER is active.

This message will be preceded by message E127I, E234I, or E235I.

System Action: The 01E105D message follows.

Operator Action: Refer to E127I or E234I or E235I message descriptions as applicable.

E112I INVALID ENTRY IN TEST FLD-XXXXXXXX

Cause: An error was detected in the test field of your reply to the 01E105D message or in the test-run definition card. The XXXXXXXX field contains the error and can be up to 8 characters. The error may be one of the following: invalid delimiter, field omitted, invalid test type (does not contain all digits), invalid test section (name not alphabetic), invalid range of test sections, invalid specification of test section routine (more than one test section specified), invalid test section routine, invalid range of test section routines, or invalid test ID prefix.

System Action: The E161I and 01E105D messages follow. OLTEP is terminated if no console is available. If card input next card is read.

Operator Action: If the test-run definition is entered on card, correct the test field and reinitiate OLTEP. If the problem recurs when input is known to be correct, do the following:

- Initiate a console request and respond 'CANCEL' to the 'READY FOR COMMUNICATIONS' message. This causes a DUMP.
- Have console and DUMP listings available.

04E113D CAN CTL PGM ON MULTI-ADDR DEV XXXX  
BE DESTROYED REPLY YES/NO

Cause: The device XXXX is to be selected for test. Its type and class indicate it is programmable and that it probably responds to a set of unit addresses. If the test section is allowed to proceed (reply of YES), the control program in the device may be destroyed. The operator may have to reset the device after testing. A reply of NO will cause testing to be bypassed on that device.

System Action: Not applicable.

Operator Action: REPLY YES to test the device or NO to not test it.

E115I INVALID ENTRY IN OPT FLD-XXXX

Cause: An error was detected in the option field of your reply to the 01E105D message or in the test-run definition card. The XXX field indicates the entry in error. This message also occurs if the RE option is entered when RETAIN/370 is not active.

This is probably a user error.

System Action: The E161I and 01E105D messages follow. OLTEP is terminated if no console is available. If card input next card is read.

Operator Action: If the test-run definition is entered on card, correct the option field and reinitiate OLTEP. If the problem recurs when input is known to be correct, do the following:

- Initiate a console request and respond 'CANCEL' to the 'READY FOR COMMUNICATIONS' message. This causes a DUMP.
- Have console and DUMP listings available.

E117I SECTION XXXXXXXX NOT FOUND  
Cause: The test section indicated by XXXXXXXX cannot be found.  
System Action: Testing proceeds with the next text section.  
Operator Action: Check for an invalid entry in the test field or catalog required OLT.

E118I UNREADABLE TAPE LABEL XXXX  
Cause: A unit check was received on trying to read the tape label. The XXXX field is the device address.  
System Action: The E137I and 04E139D messages follow.  
Operator Action: Reply to the 04E139D message that follows.

E119I NON-STANDARD TAPE LABEL XXX  
Cause: The tape that is mounted on device XXXX does not have a standard label.  
System Action: The E139D message follows.  
Operator Action: Reply to the E139D message that follows.

04E120D CAN VOL DATA ON XXXX BE DESTROYED. REPLY YES OR NO  
Cause: The device test section requested space on DASD for write operations. XXXX is the device address.  
System Action: Not applicable.  
Operator action: Reply R 04, 'YES' or R 04, 'NO'.  
Note: If you reply R 04, 'YES', the pack must be reformatted before it can be used by the system.

E122I VOL ON XXXX SECURITY PROTECTED

E122I VOL ON XXXX UNEXPIRED DATE  
Cause: For the first form, byte 11 of the tape or disk Volume Label is not hex 'F0', '00', or '40' (or for ASCII tape label, not hex '30', '00', or '20'.) For the second form, the expiration date on a tape volume is greater than the date in the communication region.

System Action: The E139D message will follow.  
Operator Response: Not applicable.

E124I CEPACK NO ON XXXX [VVOLID = XXXXXX]  
Cause: Either the VOL 1 label is not present or the serial number is not CEPACK on a decountable disk.  
System Action: The 04E139D message follows.  
Operator Action: Reply to the 04E139D message that follows.

E125I UNREADABLE LABEL ON XXXX  
Cause: A unit check was received while attempting to read the label on a decountable disk device. XXXX is the device address.  
This is probably a user error.  
System Action: The E137I and 04E139D messages follow.  
Operator Action: Not applicable.

E126I BIN 0 OF XXXX DOES NOT INDICATE CE CELL  
Cause: The CE bit in subcell 18 (2321) is off, or CE bit in subcell 19 is on. XXXX is the device address.  
System Action: The E137I and 04E139D messages follow.  
Operator Action: Not applicable.

E127I NC CDS FOR XXXXXXXX  
Cause: The requested test device (XXXXXXXX) CDS (Configuration Data Set) cannot be found in the ccre image library.  
Note: (XXXXXXXX=four digit unit address or 1-8 character symbolic name).  
System Action: Testing of the device is bypassed. Message E231I follows if the device was entered as a physical device address rather than a symbolic name.  
Operator Action: Check for an invalid device address or use equate function or create a CDS for the requested device.

E129I FIRST ERROR COMM XXXXXXXX YYYY UNIT  
ZZZZ DDDDDDD

Cause: This message identifies the first error communication interval. The XXXXXXXX is the test section being executed, the YYYY field is the routine in which the error occurred, the ZZZZ field is the address of the test device, and DDDDDDD is the 1-8 character symbolic name (if applicable).

System Action: The 01E105D message follows.

Operator Action: Reply to the 01E105D message that follows. If your reply does not include a device or test change, the test continues from where the error was detected.

E130I INTERVENTION REQ XXXX

Cause: The data-protection routine has determined that intervention is required on the device whose address is XXXX.

System Action: The E137I and 04E139D messages follow.

Operator Action: Take corrective action and reply to the 04E139D message that follows.

E131I SENSE TO XXXX FAILED

Cause: Unsuccessful sense to subcell 18 or 19, bin 0 of a 2321. XXXX is the device address.

This is probably a hardware error.

System Action: The E137I and 04E139D messages follow.

Operator Action: Not applicable.

E132I CE BIT WILL NOT BE RESET -- XXXX

Cause: A sense to subcell 19, bin 0 of a 2321 indicates the CE bit is on when it should be off. XXXX is the device address.

This is probably a hardware error.

System Action: The E137I and 04E139D messages follow.

Operator Action: Not applicable.

E134I WARNING - DASD VOLUME LABELED  
CEPACK NOT PROTECTED FROM WRITE

Cause: The OLTEP program was loaded.

System Action: Processing continues.

Operator Action: Before responding to the 01E105D message with a disk address of a user pack, ensure that it does not have a volume identification of CEPACK. Test sections may destroy data on DASDs with a volume identification of CEPACK without issuing subsequent messages.

137I CSW - XXYYYYYYYYYYYYY SNS  
XXXXXXXXXXXX

Cause: The XX...X and YY...Y fields are the sense and CSW data received. The high-order byte of the CSW is replaced with xx, because it is not accurate.

Sense length printed will vary with device type. Any trailing bytes containing hex 'FF' will not be printed.

Sense data will be printed only on occurrence of unit check.

System Action: The 04E139D or E226I message follows.

Operator Action: Not applicable.

E138I DEV XXXX NOT OPERATIONAL, CC=3

Cause: TIO or Sense to test device by data protection resulted in condition code 3.

System Action: Message 04E139D is issued.

Operator Action: Check to see that the device address exists on the system and that the device is on line.

04E139D REPLY B TO BYPASS, R TO RETRY, P TO  
PROCEED (MAY DESTROY DATA)

Cause: This message follows the data-protection messages when data-protection measures have not been met, or if the attempt to restore a tape label was unsuccessful. The PROCEED option is omitted if the message occurs when restoring a tape label, testing a 2321 device, or a security-protected volume is

recognized. The part in parentheses appears for tape devices only.

System Action: Not applicable.

Operator Action: Reply one of the following:

- R 04,'B'- Bypass testing of the device. The 01E105D message follows.
- R 04,'R'- Retry the test. If the device was not ready, make it ready; if a CE volume is needed, mount it before replying.
- R 04,'P'- Proceed testing on the device [direct access device testing proceeds in file protect mode (FPM)].

04E145D IS XXXX OFF LINE TO ALL SHARING SYSTEMS? REPLY YES OR NO

Cause: This message appears when the DASD device is capable of being shared between CPU's. It wants to know if the device is being shared at the present time.

System Action: Not applicable.

Operator Response: To allow the allocation request to be satisfied, enter R 04,'YES'. To inhibit allocation, enter R 04,'NO'. After a NO reply, OLTEP will continue testing in file protect mode and will not allow any writing on the device.

E147I EXAMPLES OF DEVICE FIELD

```

0181/          TEST DEVICE 181
0185-0187/     TEST DEVICES 185,186,
                + 187
CHICAGO1       TEST SYMBOLIC TP
                DEVICE, CHICAGO1
285-286,       TEST DEVICES 285,
184/           286, and 184
.NDR/          NO DEVICE REQUIRED
                FOR TEST
/ (SLASH       TEST PREVIOUSLY
ALONE)         SELECTED DEVICES
  
```

Cause: These examples of device selection appear when you reply to the 01E105D message with R 01,'PROMPT DEV', R 01,'PROMPT ALL', or R 01,'PROMPT'.

System Action: The 01E105D message follows.

Operator Action: Not applicable.

E148I EXAMPLES OF TEST FIELD

```

2400/          TAPE TESTS
2400A/         SEC. A OF TAPE TEST
                2400
2400C,2/       RTN 2, SEC. C, TEST
                2400
2400A-C,E,G/   SEC. A,E,C,E, + G OF
                TEST 2400
R2540AA/       SEC. AA OF READER
                TEST 2540
/ (SLASH       RUN PREVIOUSLY
ALCNE)         SELECTED TESTS
  
```

Cause: These examples of test selection appear when you reply to the 01E105D message with R 01,'PROMPT TEST', R 01,'PROMPT ALL', or R 01,'PROMPT'.

System Action: The 01E105D message follows.

Operator Action: Not applicable.

E149I TABLE OF OPTIONS

E149I	OPTICN	TO REQUEST	TO OMIT	BY
		OPTION	OPTION	DEFAULT
E149I	TESTING	TL	NTL	NTL
	LCCP	TL(VALUE)	VALUE=1-	32767
E149I	ERRCR	EL	NEL	NEL
	LCCP	EL(VALUE)	VALUE=1-	32767
E149I	ERRCR	EP	NEP	EP
	PRINT			
E149I	CCNTRCL	CP	NCP	CP
	PRINT			
E149I	PARAL-	PP	NPP	NPP
	IEL	PP(LEVEL)	LEVEL=1-	3
	PRINT			
E149I	PRINT	PR	NPR	PR
E149I	FIRST	FE	NFE	FE
	ERRCR-			
	CCMMUN-			
	ICATION			
E149I	MANUAL	MI	NMI	NMI
	INTER-			
	VENTICN			
E149I	REMCTE	RE	NRE	nre
	FE			
	CCNTRCL			
	TRACE	TR	NTR	NTR
E149I	EXTERNAL	LATA	EXT=	
E149I	EXAMPLES	OF	OPTION	FIELD
E149I	FF,NMI,RE/			
E149I	EF,TL(50),FE,EXT=A,E/			

Cause: This table appears when you reply to the 01E105D message with R 01,'PROMPT OPT', R 01,'PROMPT AII', or R 01,'PROMPT'.

System Action: The 01E105D message follows.

Operator Action: Not applicable.

Note: If you reply to the 01E105D message with R 01,'PROMPT AII' or R 01,'PROMPT', all three messages (E147I, E148I, and E149I) appear.

E155I TEST SECTIONS MAY NOT EXCEED 26,  
WILL TEST XXX-XXX

Cause: The number of unit test sections you requested exceeded 26.

This is probably a user error.

System Action: The first 26 sections entered are processed.

Operator Action: If you desire to run more sections, enter them in your reply to the next 01E105D message.

If this message occurs when there are less than 26 test sections, check for an error in the entry, such as a dash being where a comma is meant to be. Multiple entries of the same test section are counted as part of the 26 maximum.

E157I CATASTROPHIC ERROR ON DEVICE XXXX  
DDDDDDDD

Cause: An error was detected and the OLT has indicated that further testing is not worthwhile. XXXX is the device address. DDDDDDDD is the 1-8 character symbolic name if a device was entered as a symbolic name.

This is probably a hardware error.

System Action: The 01E105D message follows.

Operator Action: Reply to the E105D message.

E158I S  
T XXXXXXXX \$ UNIT YYYY DDDDDDDD  
\*T

Cause: Execution of the test section (XX...X) started (S) or terminated (T) on unit YYYY. \* indicates that an error occurred

while running a test section or that the section did not run to completion due to a change of device or test at first error communication, catastrophic error communication, or external interrupt communication interval. DDDDDDD is the 1-8 character symbolic name if a device was entered as a symbolic name. The dollar sign (\$) appears only for special tests. See Special Operating Considerations.

If the NCP option is in effect, this message does not appear

System Action: Not applicable.

Operator Action: Not applicable.

E161I FCR HELP, ENTER PROMPT XXXX TO NEXT  
DEV/TEST/OPT/ MESSAGE

Cause: An error was made in response to the 01E105D message. The XXXX field contains DEV if the error is in the device field, TEST if the error is in the test field, or CPT if the error is in the option field. A reply of R 01,'PROMPT AII' or R 01,'PROMPT' to the 01E105D message results in printing examples of all three.

This is probably a user error.

System Action: The 01E105D message follows.

Operator Action: Not applicable.

E163I RETAIN/370 READY  
  
(RETAIN/370 only)

Cause: OLTEP has established contact with the remote specialist.

System Action: Messages E107I and 01E105D follow. If the CE does not change the device or test fields when responding to the 01E105D message, the previously entered test-run definition is rerun from the beginning.

Operator Action: Not applicable.

E164I CANNOT LINK TO RETAIN 370 -  
RETAIN = YES MUST BE SYSGENED  
SYS005 IS NOT A 2955 UNIT  
CONSOLE KEYBOARD IS NEEDED  
MINIMUM 18K NEEDED BY EG  
INITIAL REMOTE RESPONSE TIMEOUT

Cause: One of the following as specified in the variable portion of the message:

1. The supervisor being used was not generated with RETAIN = YES SYSGEN option.
2. SYS005 is not assigned or is assigned to a device other than a 2955.
3. SYSLOG is not a console keyboard. A console is needed to communicate with the remote specialist.
4. BG partition is less than 18K of real core. This is the minimum size required to support RETAIN.
5. The initialization message from the remote specialist has not been received in the 10 minutes allowed for the response.

System Action: Messages E107 and 01E105D will follow.

Operator Action: If the message is "INITIAL REMOTE RESPONSE TIMEOUT", inform the remote specialist then re-enter 'REI' to message 01E105D to retry. For the other conditions, cancel OLTEP, correct the condition and reinitialize OLTEP and retry.

E165I ENTRY IN DEV FLD NOT ALLOWABLE BY REMOTE  
(RETAIN/370 only)

Cause: The remote specialist attempted to make a device entry in the test-run definition.

System Action: Messages E107I and 01E105D follow.

Operator Action: If a device change is desired, control must be returned to the on-site CE. To do this, enter NRE as an option in response to the 01E105D message.

E166I OLT DOES NOT SUPPORT TALK

Cause: This message appears if you have entered the verb 'TALK' in response to message E105D and the OLT does not support communication with you.

System Action: Processing continues at the point of interruption.

Operator Action: Not applicable.

E167I PERMANENT ERROR ON REI DEVICE  
(RETAIN/370 only)

Cause: A teleprocessing error occurred while performing an I/O operation on the Retain 370 data link.

System Action: The teleprocessing line is disabled and messages E137I, E169I, E107I, and 01E105D are issued. Message E169I is not issued if the error occurred while making initial contact with the remote analysis center.

Operator Action: Not applicable.

E169I RETAIN/370 TERMINATED

(RETAIN/370 only)

Cause: OLTEP terminated the line connection with the remote analysis center.

System Action: Messages E107I and 01E105D follow.

Operator Action: Not applicable.

E170I NC PREVIOUSLY SELECTED DEVICE/TEST

Cause: The operator attempted to default to previously entered device(s) or test(s) when none had been accepted.

System Action: Not applicable.

Operator Action: Make an acceptable entry in the device on test field in response to the next 01E105D message.

E174I UNABLE TO RESTORE LABEL ON DEVICE  
XXXX

Cause: The Write was unsuccessful when attempting to write a label after testing a tape device.

This is probably a user error.

System Action: The E137I and 04E139D messages follow.

Operator Action: Correct condition causing error if possible and respond to 04E139D.

01E175D SYNTAX ERROR  
04E175D SYNTAX ERROR

Cause: The reply to a two-way message was not in the expected format.

This is probably a user error.

System Action: Not applicable.

Operator Action: Reenter the reply to the message.

E176I MUTUALLY EXCLUSIVE OPTIONS HAVE BEEN SELECTED

(RETAIN/370 only)

Cause: One of the following occurred:

- The RE and MI options were both entered by the on-site CE.
- The on-site CE entered RE while the MI option was in effect.
- The remote specialist entered the MI option.

System Action: Messages E107I and 01E105D follow.

Operator Action: Enter the desired options in response to the 01E105D message that follows. It is not necessary to reenter the device and test fields. If the option field is not changed, the options specified in the previous test-run definition are used.

04E197D MOUNT XXXXXX, REPLY DEV ADDR CR NO TO BYPASS

Cause: The unit test requested that test data be read from the READD data set.

System Action: Not applicable.

Operator Action: Mount the volume on an available tape unit or card reader and enter its 3- or 4-digit address. If there is no unit available, enter R 04, 'NO'.

E198I NOT ALL ROUTINES SELECTED WERE RUN

Cause: Non-existent routines were requested or OLT terminated abnormally.

This is probably a user error.

System Action: Remaining test sections are scheduled.

Operator Action: Check for an invalid test field entry or if E158I has \* check SYSLST.

04E199D INCORRECT REPLY

Cause: The response to a 'D' type message was invalid.

This is probably a user error.

System Action: Not applicable.

Operator Action: Reenter the reply to the 'D' type message.

E201I DEVICE DESCRIPTORS DO NOT MEET XXXXXXXX REQUIREMENTS

Cause: The device and test you requested were not compatible. XXXXXXXX is the test section.

This is probably a user error.

System Action: Any remaining devices or tests are scheduled.

Operator Action: Check for an invalid entry in the test-run definition. If the test-run definition is known to be correct, the Customer Engineer should check for an incorrect configuration data set for that device.

E210I ROUTINE XXXX BYPASSED, MANUAL INTV REQUIRED

Cause: You selected a routine requiring manual intervention without selecting the MI option.

System Action: Testing continues with the next routine.

Operator Action: Rerun the test with the MI option selected.

04E221D CAN FOREGROUND BE QUIESCED, REPLY YES CR NO

Cause: The test section requested a function requiring that no new jobs be started in the foreground partitions after the current jobs reach ECJ.

System Action: An R 04, 'NO' reply causes the test section to be informed that the requested function is not available. An R 04, 'YES' reply causes message E222I to be issued.

Operator Action: Reply R 04, 'YES' if the foreground partitions can be stopped when the current jobs reach ECJ. Reply R 04, 'NO' if they cannot be stopped. If you reply R 04, 'YES', and do not quiesce the partitions, OLTEP cannot continue.

E222I STOP FOREGROUND JOBS

Cause: You replied R 04, 'YES' to the 04E221D message.

System Action: E233I is issued when the system is successfully quiesced.

Operator Action: Batched job processing. Press the Request key and respond to the 'READY FOR COMMUNICATIONS' message with 'PAUSE FX,EOJ'. (Where X is the number of each active foreground partition.) Issue the next pause command for all active foreground partitions. As each partition completes, the area with the prefix FX is printed respond with the operator command 'STOP' after each.

Single Program Initiation. Do not initiate any more foreground jobs until the test field is changed in response to the 01E105D message.

Note: OLTEP will not continue until the foreground partitions are no longer active.

E226I OLTEP TERMINATED. CONSOLE KEYBOARD UNAVAILABLE

Cause: A console device was not available for input data required by OLTEP at a communications interval.

System Action: OLTEP is terminated.

Programmer Action: Not applicable.

Operator Action: Not applicable.

E227I INST. LEVEL SUPPORT FOR XXXXXXX-01

Cause: A test section required a higher SCT level than supported by OLTEP. XXXXXXX identifies the test section.

System Action: The OLT is bypassed and the next test section is scheduled.

Operator Action: Not applicable.

E229I SECTION XXXXXXXX CANCELED FOR MODE REQUEST

Cause: Mode requirements from the OLT are not supported by OLTEP. XXXXXXX is the test section requesting the mode.

System Action: The requesting section routine is canceled.

Operator Action: Not applicable.

E230I CLTEP CANCELED - SYSLST AS DASD NOT SUPPORTED

Cause: The device assigned to SYSLST is a direct access device. CLTEP does not support disk as a SYSLST device.

System Action: CLTEP is terminated.

Operator Action: Assign SYSLST to a tape or printer and initialize CLTEP.

E231I XXXXXXXX CANNOT RUN ON YYYY

Cause: This message is preceded by a message that explains why test XXXXXXXX cannot be run on device XXXX. The preceding message is E127I or E201I.

System Action: Test XXXXXXXX is bypassed, and OLTEP attempts to run the next test on the same device if another test was specified.

Operator Action: Not applicable.

E232I CLTEP CANCELED - PG PARTITION LESS THAN 14K

Cause: The real PG partition size is less than the 14K required to run CLTEP.

System Action: OLTEP terminated.

Operator Action: Expand the background partition to at least 14K through operator communication or make SIZE= at least 14K.

E233I DC NOT INITIATE ANY FOREGROUND JOBS

Cause: The foreground partition was quiesced due to a request from the test section.

System Action: Not applicable.

Programmer Action: Not applicable.

Operator Action: Do not initiate any jobs in the foreground partitions until the current test-run definition is changed, or testing is terminated.

E234I DEVICE XXXX NOT TESTED. NO LOGICAL UNIT ASSIGNMENT

Cause: The device entered in the last test-run definition is not assigned.

System Action: The device is not tested.

Operator Action: Assign the device to be tested and re-initiate CITEP.

E235I DEVICE XXXX NOT TESTED. POWER ACTIVE

Cause: POWER may be spooling I/C to the device.

System Action: The device is not tested.

Operator Action: De-activate POWER and re-enter the device. But first, read section Running OITEP With Power.

E236I XXXX IS A TEST DEVICE - CANNOT BE USED

Cause: Device XXXX, that was entered in response to the 04E197D or 04E324D message, is a test device. It cannot be used for the READD or history data set.

System Action: The 04E197D or 04E230D message is issued again.

Operator Action: Mount the history tape or READD data set on a different device and enter its address, or enter R 04,'NO'.

E237I DEVICE XXXX HAS NO LOGICAL UNIT ASSIGNMENT

Cause: The device address entered in response to message 04E197D or 04E324D is not assigned to the background partition.

System Action: Message 04E197D or 04E324D is issued again.

Operator Action: Either cancel OLTEP, assign the device and rerun the test, or mount the data set on a device that is already assigned and enter its address.

E238I XXXXXXXX BYPASSED-CORE NOT AVAILAELE

Cause: A test section requires more main storage than there is available.

System Action: The next test section is run.

Operator Action: Check the Writeup that accompanies the test to determine the additional main storage required. Increase the size of the real background partition if you desire to run this test section.

E239I KEYBOARD UNAVAILABLE

Cause: OLTEP required two way communication and SYSLOG was not a keyboard console. The message that required a reply is printed before this message.

System Action: If a data protection message is issued, the next device is scheduled. If an CIT is active, the CLT is reset and the next test is scheduled.

Operator Action: If applicable, correct the situation which causes the message and initialize OLTEP to rerun the desired test sequence.

E241I LCST DATA - RE-ENTER MESSAGE

(RETAIN/370 only)

Cause: The remote specialist entered more than one message during a period when messages were not being processed. Only the first message was accepted.

System Action: Not applicable.

Operator Action: Wait until the first message is processed, then reenter the lost messages.

E242I EQU NOT ALLOWED FROM REMOTE (RETAIN/370 ONLY)

Cause: The remote specialist requested EQU which is allowed only by the on-site operator.

System Action: Message 01E105D is re-issued.

Operator Action: Remote Specialist should make a valid LEV/TEST/OPT/entry or respond with the NRE option to allow on site operator to enter equates.

04E243D WILL CPU SHARED DEVS BE USED BY OTHERS, REPLY YES OR NO

Cause: Control Unit Testing may yield unexpected results to any other CPU using the tested control unit. This message is preceded by message E244I, listing CPU Shared Devices on that control unit.

System Action: Not applicable.

Operator Action: Reply R 04, 'YES' if any of the listed devices will be accessed by another CPU while the present test section is active. Otherwise reply R 04, 'NO'.

E244I THE FOLLOWING CU TEST DEVS ARE:

CPU SHARED  
NOT ASSIGNED TO BG  
SYSTEM DEVS

Cause: While attempting to run a control unit test, at least one device on the test control unit was found to be a CPU sharable device, not assigned to the background, required by the system, i.e., SYSRES, SYSLOG, SYSLSI, SYSREC or SYSCLB partition. message, all lines after the first being a list of the devices affected.

System Action: If the devices are CPU sharable, message 04E243D will follow.

Operator Action: If the devices are CPU sharable, reply to the 04E243D message that follows. If the devices are not assigned to the background or are system devices, reassign those devices before attempting to re-run control unit test.

E245I OLTEP CANCELED - CANNOT RUN IN VIRTUAL MODE

Cause: OLTEP was initiated without the REAL parameter on the EXEC statement.

System Action: OLTEP is terminated.

Operator Action: Initialize CITEP in REAL.

E250I (test-run definition)

Cause: This message contains the test-run definition if it was entered via the input job stream.

System Action: Nct applicable.

Operator Acticn: Nct applicable.

E251I DUPLICATE ENTRIES IN DEVICE FIELD

Cause: The same device address was entered more than cnce in the same test run definiticn.

System Action: Nct applicable.

Operator Acticr: Re-enter the device field ccrrectly.

E252I SYMBOLIC NAMES AND UNIT ADDRESSES MIXED IN DEVICE FIELD

Cause: Self explanatory.

System Action: Nct applicable.

Operator Acticn: Re-enter the device field with all unit addresses or all syrbolic names.

E253I OLT MODULE XXXXXXXX NOT FOUND IN LIBRARY

Cause: A module requested by the active test section was not found in the core image library.

System Action: The Test Section is notified and will determine whether it can continue without the requested module.

Operator Action: If test section cannot successfully execute without the missing module then first check setup or execute DSERV to ensure that private libraries were assigned if necessary. If module is not in any library then link edit it into the appropriate core image library.

E265I OLTEP CANCELED - RUNS ONLY IN BG PARTITICN

Cause: OLTEP was executed in a fcreground partitcicn.

System Action: OLTEP is terminated.

Operator Acticn: Re-start OLTEP in the background partitcicn.

E306I INPUT DEV MUST BE A TAPE  
Cause: Device entered in response to message 04E324D was not a tape device.  
System Action: Message 04E324d is reissued.  
Operator Action: Respond to message 04E324D with the address of a tape unit where the LOGSCAN tape is mounted.

E313I TEST CANCELED, ATTEMPTED TO WRITE ON A FILE PROTECTED DEVICE  
Cause: The data integrity option FPM was in effect, and the unit test attempted to issue a write. This is probably a user error.  
System Action: Testing proceeds with any remaining test sections.  
Operator Action: Not applicable.

04E323D SHOULD RECORDER FILE BE USED, REPLY YES OR NO  
Cause: This message requests the availability of the active recorder file.  
System Action: Not applicable.  
Operator Action: Reply R04, 'YES' if the active recorder file should be accessed. Reply R04, 'NO' if the file should not be used. A NO response will result in message 04E324D to follow.

04E324D MOUNT LOGSCAN TAPE, REPLY DEV ADDR OR NO TO BYPASS  
Cause: This message alerts you to mount the LOGSCAN tape.  
System Action: Not applicable.  
Operator Action: Mount the LOGSCAN tape and enter the device address. If the tape is not available or there is no tape drive available, enter R 04, 'NO'.

E327I EXT=text  
Cause: This message contains from 1 to 56 characters of information that were entered by the operator in the options field (via EXT=text) at a DEV/IST/OPT/ communications interval.

System Action: Not applicable.  
Operator Action: Not applicable.

04E394D ENTER DEV EQUATES/END/CLR  
Cause: EQU was entered in response to message 01E105D. This facility allows the operator to equate an existing CDS for a device which has no CDS.  
System Action: Not applicable.

Operator Action: Enter the desired equates in any of the following formats:  
XXX=ZZZ  
XXX,YYY=ZZZ  
XXX-YYY=ZZZ

Where XXX and YYY are the devices to be tested, and ZZZ is the device address for the CDS to be used in testing. Multiple entries can be made and must be separated by a slash. An entry of 'CLR' will drop all existing equates. 'END' must be entered when all entries have been made. 'CLR' and 'END' may be entered on the same line as the equates but must be separated by a slash.  
Example:  
R 01, 'CLR/280"180/192-195=290/END'

E395I ACTIVE EQUATES  
Cause: END was entered in response to message 04E394D.  
System Action: All active equates are displayed for operator verification.  
Operator Action: Verify equates.

04E396D ARE EQUATES CORRECT? YES/NO  
Cause: This message follows message E395I. It is used to verify the accuracy of the equates that were entered at equate time.  
System Action: A YES response will be followed by message 01E105D. A NO response will be followed by message 04E394D to allow the operator to correct the errors in the equates.  
Operator Action: If the equates are correct as contained in the message E395I, then reply YES. If corrections or additions are required, reply NO.

E397I INVALID ENTRY XXXXXX

Cause: One of the following errors was found in response to message 04E394D:

1. Slashes entered with no entry between them.
2. Unit address entry is not 3 or 4 digits.
3. Missing delimiter.
4. Inclusive range entered which is greater than 16.
5. Mixed syntax in the same field (i.e., 180,182-186=290)

The XXXXXX field contains the error.

System Action: Message 04E394D follows.

Operator Action: Determine the error and reply correctly to the subsequent 04E394D message.



E398I EQUATED DEVICES EXCEED 16  
Cause: A device equate was attempted when there were already 16 active equates.

System Action: Message E395I is issued for verification of the active equates, followed by message 04E396D.

Operator Action: If the equates are acceptable as shown in message 04E395D, respond YES. If you desire to enter more equates, respond NO, then enter the correct equates or CLR to change the entries.

E399I EQUATED DEV ADDRESS AND \$CUTEST ARE MUTUALLY EXCLUSIVE

Cause: The test section requested the \$CUTEST function and there are equates active.

System Action: The test section is denied the request for \$CUTEST.

Operator Action: Clear the active equates by invoking a communication interval and responding 'CLR' to message 04E394D. Then rerun the test section.

E400I TP LINE CONNECTION, LINE = XXXX  
TERMINAL = XXXXXXXX

Cause: This is a header message which precedes messages involving line connection information. This header would only be printed once for any group of messages for the same device for each line connection attempted. Line number is defined by XXXX. Terminal identification is defined by XXXXXXXX, which is the terminal symbolic name. If XXXX is replaced by N/A, the information was not available at the time the message was issued.

System Action: Not applicable.

Programmer Action: Not applicable.

Operator Action: Not applicable.

E401I REQUIRED DATA NOT FOUND IN CDS FOR XXXXXXXX

Cause: The device on which a line connection was requested does not have the required CDS information. Position XXXXXXXX will define either SETMODE or DAIL, depending

on which was found missing in the CDS entry.

System Action: Indicate to OLT that line connection was not performed.

Programmer Action: Not applicable.

Operator Action: Request CDS update to be performed by CE.

E402I SYMBOLIC NAME FIELD NOT PRESENT IN CDS

Cause: Line connection has been requested for device not having a symbolic name in the CDS entry.

System Action: Line connection is not attempted and a return code is returned to the OLT.

Operator Action: Enter the correct device by symbolic name at the communication interval and rerun the test or correct the CDS.

E403I INVALID LINE CONN COMMAND SEQUENCE IN CDS

Cause: An unassigned Line Connection command sequence code has been detected in the device CDS entry.

System Action: Line Connection is not attempted. A return code is returned to the OLT.

Operator Response: Request CDS update to be performed by CE.

E404I DIAL DIGIT COUNT EXCEEDS 20

Cause: The count of the digits to be dialed given in the device CDS entry is greater than 20.

System Action: Line Connection is not attempted. A return code is returned to the OLT indicating that line connection was not successful.

Operator Response: Request CDS update to be performed by CE.

E405I OPERATOR CALL REQUIRED, TELEPHONE NUMBER NOT PROVIDED IN CDS

Cause: The required line is a switched line but does not have the auto call feature either present or defined in the CDS entry. The line may or may not have the auto answer feature.

System Action: OLTEP will wait six minutes to allow dialing.

System Action: Provide a return code indicating that line connection was not completed.

Operator Action: Manually dial the appropriate telephone number of the symbolic name device in header message or have the remote terminal operator call in. If the appropriate telephone number cannot be determined, either you must wait a minimum of six minutes for CITEP to continue or you can cancel the background partition.

Operator Action: Correct the non-operational problem to the teleprocessing line or eliminate the device as a device entry.

E406I OPERATOR CALL TERMINAL ON NUMBER XYZ

E409I SIC FINAL STATUS ERROR  
CSW=XXXXXXXXXXXXXXXXX, SNS=YY

Cause: You are required to make an intervention to complete the line connection of a teleprocessing device.

Cause: An error (unit check) has occurred in the sequence of CCW's necessary for line connection. The ending channel status word is given in XXXXXXXXXXXXXXXXXXXX. A sense command is issued after the error and the sense information is given in YY.

System Action: System will wait six minutes, allowing you to make the telephone call.

System Action: Provide return code indicating that a line connection was not performed.

Operator Action: You must manually dial the terminal using the telephone number XYZ. XYZ may be a telephone number of up to 20 digits. If your response does not occur in the allowed time, the E407I message will be issued.

Operator Action: Not applicable.

E410I FINAL STATUS NOT RECEIVED FROM I/O OPERATION

Note: While not provided, the remote terminal operator could call in using the telephone number of the line being enabled. (The on-site operator must provide the telephone number to the remote terminal operator.)

Cause: In an attempt to perform a channel program to provide line connection, a no final status connection occurred.

System Action: Provide a return code indicating that a line connection was not performed.

E407I OPERATOR CALL NOT COMPLETED WITHIN TIME LIMITS

Operator Action: Not applicable.

E412I CCW CHAIN TERMINATED ON  
XXXXXXXXXXXXXXXXXXXX

Cause: A manual telephone call was required by an operator. The call may be completed either as outgoing or incoming. The call was not completed within the allotted time.

Cause: An error (unit check) has occurred in the sequence of CCW's necessary for line connection. This message will print the failing CCW in hex digits XXXXXXXXXXXXXXXXXXXX.

System Action: Provide a return code indicating that line connection was not performed. If final status has not been received, an HIC to clear the line will be issued.

System Action: Provide a return code indicating that Line Connection was not performed.

Operator Action: Not applicable.

E413I REQUIRED CDS POINTER NOT PRESENT

Operator Action: Rerun the test and accomplish the phone call in the allotted time.

E408I SIO RETURNED A CC=3, NOT OPERATIONAL

Cause: Any request for an operation to a teleprocessing terminal must provide a pointer to the CDS information for that device. In this case the pointer was zero which is an invalid case caused by program error in the OLT.

Cause: When attempting a line connection to a teleprocessing line an SIO was issued and found that the line was not operational.

System Action: I/O operation or Line Connection is not attempted and a return code is returned to the caller.

Operator Action: Inform CE.

E414I ALL TEST TP LINES WILL BE DISABLED

Cause: Operator is notified that OLTEP is disabling all TP lines that were previously enabled.

System Action: OLTEP issues a DISABLE command to any TP line previously enabled.

Programmer Action: Not applicable.

Operator Action: Not applicable.

E450I [\*] RTN UUU, ID VV,AT WWWWWW  
[,RC XX]

Cause: The TR option is on or the OLT is using return code handling and return code was unacceptable. The fields are as follows:

1. UUU - routine number,

2. VV - function identification, (last two characters of the phase name of the OLTEP module called by the OLT.)

3. WWWWWW - contents of register 14 at time of call,

4. XX - return value given.

RC is not displayed if the function does not have a return code. The asterisk is added if this return code caused the OLT to terminate.

System Action: Not applicable.

Operator Action: Refer to OLT write-up for the reason for termination if asterisk is present.

E501I T2400W BYPASSED, INVALID TEST

Cause: T2400W was entered in the test field. This test section is no longer supported.

System Action: The test section is bypassed.

Operator Action: Not applicable.



## Glossary

For a more complete list of data processing terms, refer to the IBM Data Processing Techniques, A Data Processing Glossary, GC24-1699.

ASCII (American National Standard Code for Information Interchange): A 128-character, 7-bit code. The high-order bit in the System/360 8-bit environment is zero.

CE cell: A data cell used to test an IBM 2321. A CE cell is recognized by a sense to bin 0, subcell 19. If the CE sense bit is on, the CE cell is mounted.

CE pack: A disk pack used to test an IBM DASD other than the 2321. A CE pack is any of the following:

1. A pack with a VOL1 label of CEPACK,
2. A 3330 with the CE bit on, or
3. A 2314/2311 with F0FE on cylinder 6, track 0, record 0.

CE volume: If the device is a 2321, see CE cell; otherwise see CE pack.

CLEANUP: A routine that exists within an OLT and is designated to bring the test devices back to pre-test status when the OLT is abnormally terminated.

communications interval: A period of communication between the console operator and OLTEP. The operator is requested by OLTEP to enter the test-run definition at this time.

Configuration Data Set (CDS): A record of information about an I/O device or CPU accessed by OLTEP and the OLT.

data protection: A safeguard invoked to prevent the destruction of customer data.

data security: A safeguard invoked to prevent the accessing of volume security protected customer data.

default value: A predetermined value used in place of an omitted entry.

equates: A facility which allows the use of existing CDSs for devices which have the same configuration but different device addresses.

expiration date: A date within a tape label for data protection. The tape cannot be used as a scratch tape without

permission from the operator until this date has expired.

File Protect Mode (FPM): A mode of operation that insures maximum protection and security of customer data. While in file protect mode, the OLT is not allowed to perform write operations.

On-Line Test (OLT): A test program of the online test system. The tests reside in the core image library, and are brought into core storage by OLTEP when requested by the operator.

On-Line Test Executive Program (OLTEP): The control program of the online test system. OLTEP is the interface between the online test and the operating system.

online test system: A control program, OLTEP, and a series of tests (OLTs) designed to test I/O devices while permitting normal system processing in the foreground partitions.

privileged instruction: An instruction that can be executed only while the CPU is in the supervisor state. Protection, I/O, direct control, and any instructions that manipulate the program status words are privileged.

prompting: A request for help made by the operator when entering the test-run definition. OLTEP prints examples of the field requested by the operator.

Quiesce Mode: A mode of operation that requires the foreground partition to be stopped by the operator. The operator does this on the console by issuing the PAUSE EOJ and STCP commands when requested by OLTEP.

remote terminal: A remote terminal is one usually separated from the CPU (into which OLTEP is loaded) by a distance that is sufficient to require common carrier facilities for inter-communication. A station is considered remote if it is connected to the CPU through a Transmission Control Unit (TCU).

Stand Alone Online Test Support (SOSP) program: A utility program executed as though it were an OLT. SOSP facilitates the creation and maintenance of configuration data set and online test sections by the CE.

supervisor state: The state of CPU operation that allows execution of privileged instructions. When bit 15 of the PSW is zero, the CPU is in the supervisor state.

test-run definition: Information requested by OLTEP at the various communications intervals. This information consists of the device to be tested, the test or test routines to be executed, and the options to be exercised.

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This Technical Newsletter, a part of release 29 of the IBM Disk Operating System, provides replacement pages for the subject publication. These replacement pages remain in effect for subsequent releases unless specifically altered. Pages to be inserted and/or removed are:

Cover, Edition Notice  
11, 12  
43, 44, 44.1  
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A change to the text or to an illustration is indicated by a vertical line to the left of the change.

### Summary of Amendments

- addition of new message (page 44).
- expanded definition of CEPACK (page 50).
- minor editorial changes.

**Note:** Please file this cover letter at the back of the manual to provide a record of changes.

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