SH20-1044-3

Program Product

Customer Information Control System (CICS) Terminal Operator's Guide

Program Nos. 5736-XX6 (DOS-ENTRY)
5736-XX7 (DOS-STANDARD)
5734-XX7 (OS-STANDARD V2)

The IBM Customer Information Control System (CISC) is a transaction-oriented, multiapplication data base/data communication interface between a System/360 or System/370 operating system and user-written application programs. Applicable to most online systems, CICS provides many of the facilities necessary for standard terminal applications: message switching, inquiry, data collection, order entry, and conversational data entry.

CICS is available in three systems – two for DOS users and one for OS users. Because the two CICS/DOS systems are compatible with each other and with the CICS/OS system, it is possible to start with a small data base/data communication configuration and move up through DOS into OS.

This manual provides information of interest to persons involved with terminal operation. These persons include: terminal operators, terminal supervisors, master terminal operators, application programmers, system programmers, and system administrators.

IBM

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This edition is a major revision obsoleting SH20-1044-1 and SH20-1044-2.

This edition applies to Version 1, Modification Level 1, of the CICS/DOS-ENTRY (5736-XX6) and CICS/DOS-STANDARD (5736-XX7) program products and to Version 2, Modification Level 3, of the CICS/OS-STANDARD (5734-XX7) program products; it also applies to all subsequent versions and modifications unless otherwise indicated in new editions or Technical Newsletters.

Changes are continually made to the information herein; before using the publication in connection with the operation of IBM system, consult the latest System/360 and System/370 SRL Newsletter (GN20-0360) for the editions that are applicable and current.

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PREFACE

This publication describes the use of terminals with three IBM program products: CICS/DOS-ENTRY, CICS/DOS-STANDARD, and CICS/OS-STANDARD V2. It provides single terminal operators, supervisory terminal operators, master terminal operators, application programmers, system programmers, system analysts, and system administrators with information concerning terminal operation considerations, terminal service functions, and messages sent to a terminal by CICS.

This publication is not intended to describe the actual operation of a specific device. For that information see the appropriate terminal operator's manual.

The words "transaction" and "task" have the same connotation in CICS and are used interchangeably throughout this publication; the processing of a transaction may involve the execution of one or more "programs".

For further information concerning CICS, see the following IBM publications:

General Information Manual (GH20-1028)
Application Programmer's Reference Manual (SH20-1047)
System Programmer's Reference Manual (SH20-1043)
Operations Guide (CICS/DOS) (SH20-1034)
Operations Guide (CICS/OS) (SH20-1048)
Logic Manual (CICS/DOS-ENTRY) (LY20-0712)
Logic Manual (CICS/DOS-STANDARD) (LY20-0713)
Logic Manual (CICS/OS-STANDARD V2) (LY20-0714)

All references to CICS/OS and CICS/OS-STANDARD in this publication are references to the CICS/OS-STANDARD V2 system.

CONTENTS

INTRODUCTION

USE OF TERMINALS IN CICS

Terminal operation in the CICS system environment is mainly characterized by the use of transactions. Transactions are initiated by entering an identification statement which specifies a valid transaction code. Any operator of a terminal may communicate with a transaction using several different methods. These are: single transaction entry, conversational entry, and data collection.

A single function entry is one which invokes a transaction that requires no interaction with the terminal operator. The conversational entry transaction may require several interactions with the terminal operator. Data cclliection entry is one that may require little interaction with the terminal operator, but may require many entries by the operator fcr each response from the system.

TERMINAL OPERATOR

A terminal operator enters predefined transactions at a terminal to initiate certain desired functions. These functions may consist of inquiries to the ccntents of his data base, update or add to the informaticn contained in his data base, or possibly perform calculations and return the results. Most of these transactions are user-defined. In these transaction cases, the user has the responsibility of educating each terminal operator concerning any special procedures defined by the user for the execution of the system. Included should be the procedures to be fcllowed when the system abnormally terminates or when "end of day" occurs.

CICS provides certain transactions which may be invoked by the terminal operator. The system service functions of these transactions are explained in a later section.

The terminal operator must be aware of those transaction codes he is allowed to enter and the required format for the transactions. He should also be aware of any messages that might be generated by the transactions he invokes, as well as any corrective action that must be taken in case of error conditions. In addition to these messages, the terminal operator should be aware of any other messages that CICS might transmit to his terminal. Sometimes it is necessary for a terminal operator tc be aware of the terminal identifications of other terminals with which he may have to communicate.

SUPERVISORY TERMINAL OPERATOR

A supervisory terminal operator has the responsibility of keeping operational all terminals under his supervision. This is accomplished through the use of certain CICS provided transactions, which are defined later in this manual.

Generally, all terminal operation considerations applicable to the single terminal operator are alsc applicable to the operator of a supervisory terminal. In addition, the supervisory terminal operator should be aware of those functions he can perform that are not available to the single terminals under his supervision.

The supervisory terminal operator should know the identification of all terminals and operators under his supervision. He should also be aware of the status of each terminal and understand the procedure necessary to change the status of each terminal.

MASTER TERMINAL OPERATOR

All terminal operation considerations applicable to the other terminal operators are also applicable to the operator of the master terminal. In addition, the master terminal operator must be familiar with all procedures associated exclusively with the master terminal.

The master terminal operator must have a general awareness of the terminals and operators that are capable of accessing CICS at any given time. As in the case of the supervisory terminal operator, he should know the current status of each terminal in the event he needs to change that status.

Since the master terminal operator is normally the only one allowed to change various system operating parameters, he must know what effect such changes might have on system performance. Thus, the master terminal operator must have a good understanding of CICS operation.

TERMINAL SERVICE FUNCTIONS

The process of changing the terminal status is invoked by the entry of the appropriate transaction identification, depending upon the terminal designation as single, supervisory, or master.

The service status of a line or a control unit can be changed at the master terminal by entering any terminal identification on the line or control unit. If a terminal designated as a master terminal should become inoperative, the master terminal operator may sign on another terminal to establish a new master terminal.

The types of terminal processing status are:

1. TRANSACTION, indicates a terminal which can initiate transactions and receive messages on request.
2. TRANSCEIVE, indicates a terminal to which messages can be sent automatically.
3. RECEIVE, indicates a receive-only terminal (no input).
4. INPUT, indicates a terminal that can send messages to CICS but cannot receive messages from CICS.

The types of terminal service status are:

1. OUT OF SERVICE, indicates that no reading or writing for the terminal is possible.
2. IN SERVICE, indicates that the terminal is operational.

The types of line and control unit status are:

1. OUT OF SERVICE, indicates no reading or writing for any terminal on that line or control unit.
2. IN SERVICE, indicates an operational line or control unit.

A terminal with an OUT OF SERVICE or IN SERVICE status retains the appropriate processing status of TRANSCEIVE, RECEIVE, or TRANSACTION at the same time. Thus, a terminal which has both a TRANSACTION and IN SERVICE status may be placed OUT OF SERVICE without losing the TRANSACTION designation. When the terminal is again placed IN SERVICE, the former processing status of TRANSACTION is retained. The status of the terminals is originally established with the creation of the Terminal Control Table.

Note: A display station should not have messages arbitrarily sent to it. It is possible to overlay an existing message at the display station before the existing message has served its full purpose. Therefore, the user must use TRANSCEIVE and RECEIVE with caution on video devices.

The operator at a single terminal can alter the status of his own terminal. An operator at a master terminal can alter the status of any or all terminals. In neither case is a Terminal List Table required.

TERMINAL OPERATOR

The operator of a terminal, other than a supervisory or master terminal, must have certain information to perform his prescribed duties. For example, the operator must know the exact information to be entered from his terminal to sign on the system. This information

includes the necessary password and identification as specified in the Sign-on Table. The transaction identification CSOT must be entered immediately following the sign on transaction to identify a single terminal.

Once signed on, the terminal operator must be aware of those transaction codes he is allowed to enter and he should also be aware of any error messages that might be generated by the transactions he invokes, as well as any corrective action that must be taken. In addition to the error messages, the terminal operator should be aware of any other messages that CICS might transmit to his terminal. Sometimes it is necessary for a terminal operator to be aware of the terminal identifications of other terminals with which he may have to communicate. He should certainly know the terminal identification of his supervisory and/or master terminal.

The user has the responsibility to educate each terminal operator concerning any special procedures defined by the user for the execution of the system. Included should be the procedures to be followed when the CICS system terminates.

INITIATING TRANSACTIONS

A CICS transaction is normally initiated from a terminal by the operator entering a valid identification statement which specifies a transaction code. For CICS provided transactions such as CSMT, the operator of a 3270 must clear the screen before entering the transaction code. This may be true of user transactions, depending upon their design. CICS transaction codes are always four characters in length and must start in the first position of an entry. Depending upon the transaction, additional data may be presented along with the transaction code, as follows:

```
AAAA      JOHN DOE, 12489
```

In this example, a CICS transaction identified as AAAA is initiated to process the data submitted with the transaction codes. At the completion of transaction AAAA, the user might choose to transmit a completion message back to the terminal, such as:

```
PROCESSING COMPLETE
```

Another type of transaction may require that the terminal operator answer a series of specific questions. For example:

```
Operator keys:  STAT
CICS responds:  **WHAT IS STUDENT ID?
Operator keys:  12345
CICS responds:  **WHAT INFORMATION IS REQUIRED?
Operator keys:  GPA
CICS responds:  **GRADE POINT AVG=3.67
CICS:           **END OF TRANSACTION
```

Some transactions may require little or no interaction between CICS and the terminal operator. The following example is typical of this type of transaction:

```
Operator keys:  UPDT
CICS responds:  **BEGIN DATA INPUT, KEY 'END' WHEN
                FINISHED
Operator keys:  123 A
Operator keys:  456 B
Operator keys:  789 C
Operator keys:  363 A
Operator keys:  END
CICS responds:  **TRANSACTION COMPLETE
```

2741 TERMINAL PROCEDURE

To initiate communication with CICS using 2741 Terminals proceed as follows:

Dial Lines - With the terminal power switch off and the mode switch set to communicate, dial CICS. After connection is established, turn the power on and enter the terminal identification. Thereafter, the mode and power switches must remain as set, otherwise invalid data may be transmitted or an unwanted disconnect can occur. To terminate communication, type either "DISC" or "CSSF GOODNIGHT."

Leased Lines - Turn power on and set mode switch to communicate. Thereafter, switches must remain as set otherwise invalid data may be transmitted. Any transaction in progress must be ended before switching to local mode for offline use. When the terminal is brought back online (in communicate mode), the initial transaction entry may produce an invalid transaction identification. If this occurs, rekey the transaction identification.

2260 COMPATIBILITY FOR THE 3270

2260 compatibility support for the 3270 Information Display System allows the user to run his currently operational 2260 based transactions from a 3270. If compatibility is being used, the operator must be made aware of which transactions are 2260 based transactions. When working with these type transactions the operator must be aware of the considerations that follow.

Start Of Message Indicator (SMI)

When communicating with a 2260-based transaction, the SMI character is used to indicate the beginning of the input message. On the 2260, the start symbol (▶) is displayed as the SMI character. On the 3270 the start symbol will normally be represented by the following characters:

USA	¢
U.K.	$
French	¢ or c
German	o

However, the user installation may have defined a different character

for use as the start symbol when assembling the Terminal Control Program. If this is the case the terminal operator must be made aware of what character is being used.

If an SMI character is not placed on the screen by the user's 2260 data stream, the operator must then key an SMI character somewhere on the screen before entering data. Failure to do so results in the "START SYMBOL MISSING" message being transmitted to the terminal.

New Line Symbol (NL)

For CICS 2260 compatibility, the new line (NL) function is simulated by first pressing the field mark key followed by the NL key. A field mark key should not be used for any other purpose.

On a message received at the terminal, the field mark character representing a new line symbol will be displayed as a semicolon.

2260 Tab Feature

The tab feature of the 2260 is simulated on the 3270. However, if the 2260 tab feature is being used the operator should be aware that the tab stop character (colon) does not appear on the 3270 screen. When the tab key is pressed the cursor will be positioned in the same manner as on the 2260. Also, a tab stop character cannot be entered from the keyboard.

Entering Transactions

The terminal operator can initiate either 2260 compatibility or 3270-based transactions by entering the appropriate four-character CICS transaction code. Any Start of Message Indicator (SMI) character in the input data stream is recognized by CICS; the succeeding four characters are interpreted as a CICS transaction code. CICS then initiates the specified transaction. If the specified transaction is a 2260 compatibility transaction, CICS automatically formats the 3270 screen. The transaction code must be contained on one line.

To allow easy transition between 2260 compatibility and 3270-based transactions, some conventions should be followed. Two acceptable methods of transition between transactions are:

1. Clear the screen, then enter the transaction code and any data to be presented to the transaction. In this case, the operator must enter the transaction code at the first position of the screen. The transaction code has to be preceded by the SMI character, in which case the next four characters are interpreted as the transaction code.

2. For a terminal in compatibility mode, enter the SMI character, the transaction code, and data. If the transaction to be initiated is a compatibilty transaction, all data from the SMI character to the cursor position is treated as a 2260 compatibility data stream and is mapped into 2260 format.

Note: When operating in compatibility mode, care must be taken to avoid placing the cursor in a protected area. If this happens and the operator attempts to enter data, the keyboard will become inoperable. Avoid this situation by using either tab, backspace tab or new line key. If the keyboard becomes inoperable, depress the reset key.

TERMINALS ON SWITCHED LINES (DIAL-UP)

The operator of a terminal connected to the system via a switched (dial-up) line must be aware of some situations in which CICS is dependent upon the operator. If the line connection is established by the terminal operator (that is, operator dials to establish line connection), the terminal must be identified to CICS by the operator. To accomplish this, the operator must enter the four character terminal identification assigned to that terminal immediately after line connection has been established. If the identification is valid, the system responds with a ready message. Normal operation may proceed at this time. If identification is invalid, an error message is returned and the terminal is disconnected. The READY message does not occur on programmable bisynchronous devices.

Note: The ANSWRBK operand of the DFHTCT TYPE=LINE macro instruction specifies conditions under which the terminal operator does not enter the terminal identification. These conditions are summarized below:

ANSWRBK	Terminal	Condition
AUTOMATIC	Teletype (Model 33/35)	Use of the Answerback drum for terminal identification.
NULL	7770	A CICS system option provides automatic connection without terminal identification. If for some reason CICS cannot accomplish the connection, an error message will be returned after the first data entry and the terminal will be disconnected.
EXIDVER	3735	Mandatory-terminal identification performed automatically by terminal.

To disconnect the terminal from the line the terminal operator should enter the four character keyword DISC. This keyword is valid only if there is no transaction currently in progress for that terminal.

The DISC keyword has no meaning to the operator of a 3735 Programmable Buffered terminal. The disconnect function is normally performed automatically by CICS or the 3735 hardware.

Note: None of the system service program operating procedures discussed in the following sections are applicable to the 3735 Programmable Buffer Terminal operator. These programs cannot be run by the 3735 operator unless special Form Description Programs (FDP's) have been written for the 3735 to handle the communication with these transactions. If this is the case of the directions for running these FDP's should be obtained from the 3735 programmer.

TERMINAL SIGN ON/SIGN OFF

The optional sign on/sign off function is used when a terminal operator signs on or off the system. When the sign on/sign off procedure (described below) is properly executed by the operator, the following system functions are accomplished:

- Establishes an operator priority value for all transactions initiated from his terminal.
- Places the terminal in Receive mode once sign off is accomplished.
- Provides the operator with the security keys to access the functions needed.

Sign-On Procedure

A terminal is designated a supervisory terminal or master terminal through the use of a security key. The sign-on procedure establishes a security key which allows the operator to invoke the appropriate programs. All transactions subsequent to the sign-on procedure are subject to a security check.

A sign on transaction is initiated by entering at the terminal (starting at line position 1) the following:

```
CSSN PS=password,NAME=name of operator
```

Upon normal completion of sign on, the following message is returned:

SIGN ON IS COMPLETE

This sign on associates the operator with the particular terminal thereby establishing a security key for all transactions entered from his terminal. The password and operator name that are entered must exactly match the entries in the Sign-on Table. If the password has fewer than four characters, blanks must be entered after the password for a total of four characters. The sign-on transaction may also be initiated by a numeric-only terminal such as a Touch-Tone* telephone using a 7770 Audio Response Unit Model 3 by entering (starting at line position one) the following:

9999ppppCC0000... where: pppp is a four-digit password and 000000... is a one- to twenty-digit number used to identify the terminal operator, such as operator serial number.

Note: If sign on is required for 2760 operation, the user-defined sign on procedure must be accomplished on the associated 2740 keyboard. Also, if sign on is required on a 1030, it can only be entered through operator badge input on the CARD Reader. If the terminal communicates with a 7770, the ready message is returned by CICS.

Sign-Off Procedure

The sign-off transaction that signs off the operator but not the terminal is initiated by entering (starting at line position one) at the terminal:

CSSF

This can also be accomplished from a numeric only terminal by entering at line position one:

8888

Upon completion of this sign-off transaction, the following message is returned:

SIGN OFF IS COMPLETE

The other type of sign-off transaction that could be used is:

CSSF GOODNIGHT

This can also be accomplished from a numeric only terminal by entering:

88888888

Again, upon completion of either sign off, the following message is returned:

SIGN OFF IS COMPLETE

This sign off transaction (CSSF GOODNIGHT) accomplishes the following within the CICS System:

*Trademark of the American Telephone & Telegraph Co.

1. Disestablishes association with operator priority and security key.
2. Sign off terminal as well as operator, allowing CICS to ignore that particular terminal for input. If the terminal is in TRANSEIVE or put into RECEIVE status, any auto-initiated output messages continue to be sent.
3. Enhances security.
4. Provides a statistics record written to CSSL.

The following message is sent to destination CSML by the Sign-off program:

```
DFHSF001 xxx yyyyy zzz
```

where: xxx = operator identification from Sign-on Table
yyyyy = number of transactions processed
zzz = number of transaction errors

ATP BATCH PROCESSING

One or more transactions and any associated data may be submitted from a terminal in batch mode by requesting the services of the Asynchronous Transaction Input Processor through a CRDP transaction ID. Unlike transactions submitted in conversational mode, transactions within a batch are not processed until Input Processor detects a delimiter statement.

When a batch delimiter statement is encountered, the terminal is freed for other use and the transactions within a batch are processed sequentially. Any output for the terminal will not be sent until the terminal operator requests it.

Example:

```
CRDR NAME=BATCH1,DELIM=$$$$
TRNA
  data
  data
$$$$
TRNB
  data
TRNC
TRNA
  data
$$$$
$$$$
CRDR NAME=BATCH2,EXIT=A3
TRND data,data
TRND data,data
TRND data
TRNA
  data
  data
/*
```

Note: If a transaction in this batch were to abnormally terminate, subsequent data would be skipped. A single occurrence of an explicitly defined delimiter will stop the skipping and permit normal processing to resume.

Output from batches can be requested by submitting a request for the services of the Asynchronous Transaction Output Processor through use of a CWTR command statement.

For example,

```
CWTR NAME=(BATCH1,BATCH2)
```

The Output Processor will transmit the output (if any) of the specified batches to the selected destination. It is possible to automatically receive output upon completion of a batch by submitting a CWTR statement along with the input.

For example:

```
CRDR
TRNA data
TRNB
  data
TRNC
  data
CWTR
/*
```

Requesting CRDR Services

Transaction ID	Operands
CRDR	NAME=batch name, DELIM=delimiter indicator, EXIT=program identifier, PASSWD=password

Note: Terminals must be able to transmit the character "=" in order to use CRDR services.

CRDR: Transaction identification which causes CICS to accept batched transactions.

NAME: Specifies the one- to eight-character symbolic name to be associated with this particular batch. This name is used to identify the batch for the CWTR statement. If omitted, the batch is automatically named by CICS and the name is passed back to the terminal operator within the DFH1950 terminal message. (Refer to "Requesting CWTR Services".)

DELIM: Specifies the one- to four-character symbolic delimiter for the batch. CICS continues reading from the terminal until it encounters two successive occurrences of this statement. If no delimiter is specified, the default is '/*', and a single occurrence of this default delimiter will terminate reading the batch.

EXIT: Specifies the one- or two-character identifier of a user-provided exit program which is to be used to edit the input data before it is queued (stored).

PASSWD: Specifies the one to eight character password that prevents unauthorized access or knowledge of the associated batch. If a password

is specified on the CRDR statement, the same password must be used on the CWTR statement when requesting batch services.

All parameters must be submitted in the same message with the CRDR characters.

Hold/Delete Batches

Two additional services are provided with the final (or only) delimiter statement: HOLD and DELETE

Processing the input of the batch is usually initiated as soon as the input of the batch is complete. If this processing is to be delayed, the input can be completed but held, by following the batch delimiter with a space and the word HOLD. For example:

```
CRDR
TRNA data
...
/* HOLD
```

If during submission of a batch, the operator realizes the batch should not be processed the delimiter(s) can be entered. The last (or only) delimiter should be followed by a space and the word DELETE.

If no delimiter has been specified, in the CRDR message, the HOLD or DELETE command starts one space after the default delimiter, /*. If a delimiter has been specified, the HOLD or DELETE command starts one space after the second user-specified delimiter. For example:

```
CRDR DELIM=ABCD
TRNA data
...
ABCD
ABCD DELETE
```

Requesting CWTR Services

Transaction ID	Operands
CWTR	NAME=(batchname,batchname,) TERMID=(terminal ID,terminal ID,) SOURCE=terminal ID, COPIES=n, EXIT=program identifier, PASSWD=password, SAVE,DELETE,RELEASE,STATUS,

Note: Terminals must be able to transmit the character "=" in order to use CWTR services.

CWTR: Transaction identification which causes the batch output from CICS to be sent to the terminal.

NAME: Specifies one or more names of batches to be transmitted to the specified destination. If omitted, all batches submitted by this terminal, (which are ready) are processed. If only one batch name is entered, parentheses are not required.

TERMID: Specifies the terminal identification to which output of specified batches is to be sent. If omitted, the output of all batches will be sent to this terminal. If only one terminal ID is entered, parentheses are not required.

SOURCE: If a batch that originated at another terminal is requested, that terminal's ID must be specified in this field. If SOURCE=ALL is specified, all batches represented in the system are eligible for action. For example: CWTR STATUS,SOURCE=ALL,PASSWD=ALPHA obtains the status of all batches not password protected as well as those that are protected by the password ALPHA.

COPIES: Specifies the number of copies, less than 256, of the specified output to be generated. If omitted, one is assumed.

EXIT: Specifies the one- or two-character identifier of an optional user-provided exit routine which is to be used to edit output data before transmission to the terminal.

PASSWD: If any of the batches requested are password protected, the password must be entered in this field.

SAVE: The batch(es) named are not be deleted until an explicit request to do so is made.

DELETE: The batch(es) named are deleted from the system.

RELEASE: The batch(es) named are released from HOLD status.

STATUS: The status of all batches for this terminal (or those named) are transmitted to the terminal.

Note: All parameters must be submitted in the same message with the CWTR characters.

MODIFY TERMINAL STATUS

The terminal operator can alter the processing status of his own terminal by entering the transaction code CSOT; however, he cannot place his terminal either IN SERVICE or OUT OF SERVICE.

Any request by a master terminal, a supervisory terminal, or an operator terminal can be canceled by entering (anywhere in any of the data entries):

```
ENTER:     CANCEL
RECEIVE:   CANCEL REQUESTED BY TERMINAL OPERATOR
```

Note: This command is not effective for the system terminal test, discussed elsewhere in this section.

TERMINAL TEST FUNCTION (CSFE)

The Terminal Test Function is designed to help the IBM Field Engineer to diagnose hardware problems. It is applicable to all terminals supported by CICS except for the 2780, 3735, output only printers (e.g. 3270 Printers), and terminals communicating with a 7770 Audio Response

Unit. This function is initiated by entering the transaction identification CSFE. The inputs to CSFE are as follows:

Input	Response
PRINT	All characters printable at that terminal, are transmitted.
END	Terminates CSFE.
Anything else	The input message is returned to terminal.

The following is an example of the terminal test transaction. The underlined portions have been entered from the terminal.

```
csfe
ENTER PRINT FOR CHARACTER SET
ENTER END TO TERMINATE
ALL OTHER DATA WILL BE ECHOED
all is well

ALL IS WELLprint
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789
= ;:%' *()_+& @!$" , .?/
repeat
REPEATend
TRANSACTION COMPLETE
```

SUPERVISORY TERMINAL OPERATOR

MODIFY STATUS OF SUPERVISED TERMINALS

A supervisory terminal can change the status of a single terminal, a list of terminals, a class of terminals, or all the terminals it supervises. The transaction identification CSST must be entered to identify a terminal as a supervisory terminal.

A Terminal List Table is required for (1) a supervisor to alter the status of any terminal under the supervisor's control and (2) a supervisor operator to alter the status of a group (class) of terminals. The interaction between the computer and the operator requires either the supervisor's two-character key or the class of terminals. The response to the computer must be the same two characters as the two-character suffix that was appended to the name of the appropriate Terminal List Table.

When a supervisory terminal puts a single terminal OUT OF SERVICE, the supervisory terminal has four options for servicing any task that may be attached to that terminal: SUSPEND, INTERCEPT, TERMINATE, or DISPLAY the task. If the supervisory terminal elects to suspend the task, the transaction remains attached to the operator terminal and may be completed when that terminal is returned to an IN SERVICE status. If the supervisory terminal intercepts the task, the transaction is attached to the supervisory terminal for completion and the operator terminal is placed OUT OF SERVICE. If the supervisory terminal terminates the task, the transaction is abnormally terminated and the terminal is placed OUT OF SERVICE. When the supervisory terminal displays the task, the task is suspended pending further action and the transaction identification is displayed on the supervisory terminal. At this point, the supervisory terminal may select one of the remaining options to complete the servicing of the task.

Note: The INTERCEPT feature is not provided in the CICS/DOS-ENTRY system.

In the CICS/DOS-ENTRY system, the transaction identification of the transaction associated with the operator terminal may not be available. If this is the case, a message to that effect is displayed. The supervisory terminal may then elect to TERMINATE, SUSPEND, or DISPLAY the transaction again.

When a supervisory terminal puts a line, a control unit, all terminals, a list of terminals, or a class of terminals OUT OF SERVICE while a task is attached, it has two options for servicing the transaction: (1) SUSPEND the transaction or (2) TERMINATE the transaction.

The identification code for a terminal is the same terminal identification that is contained in the Terminal Control Table.

MASTER TERMINAL OPERATOR

MODIFY OPERATION OF CICS

The master terminal operator can change the processing status of a single terminal or, a list of terminals, or may change the service status of a single terminal, a list of terminals, class of terminals, a line or a Remote 2848 Display Control Unit. The transaction identification CSMT must be entered to identify a terminal as a master terminal.

Services provided by the Master Terminal program allow the master terminal operator to:

1. Inquire about or change the partition exit time interval value.
2. Inquire about or change the runaway task interval value.
3. Inquire about or change the stall detection interval value.
4. Inquire about or change the storage cushion size.
5. Inquire about or change the maximum number of tasks value.
6. Inquire about or change the maximum number of batch tasks value.
7. Inquire about or change the maximum number of ATP tasks value.
8. Inquire about or change the negative poll delay for a terminal.
9. Inquire about or change the trigger level of a transient data intrapartition data set.
10. Turn the CICS Trace function on or off.
11. Inquire about or change the status of a single terminal.
12. Change the status of a list of terminals.
13. Change the status of a class of terminals.
14. Change the status of all the terminals in the system.
15. Inquire about or change the status of a line.
16. Inquire about or change the status of a control unit.
17. Inquire about or change the status of one or more data base data sets.
18. Open one or more data base data sets.
19. Open one or more transient data extrapartition data sets.
20. Open the dump data set.
21. Close one or more data base data sets.
22. Close one or more transient data extrapartition data sets.
23. Close the dump data set.
24. Switch the dump data to the alternate dump data set.
25. Inquire about the status of a program.
26. Terminate a task.
27. Terminate CICS.

Note: Some of the above Master Terminal Services require the use of the character "=". Terminals must be able to transmit this character in order to use these services.

Master Terminal operations against a terminal identification in a TCAM terminal pool (if PCOL=YES was specified in the DFHTCT TYPE=TERMINAL macro instruction) are not meaningful because CICS makes this assignment dynamically.

The requesting terminal may indicate in the original data entry the service to be performed and all the information required to perform that service. This is done by keying a space after the transaction identification followed by (1) a series of abbreviated keywords in any order, (2) a numeric value, and/or (3) a parameter list that describes either partially or fully the service to be performed. Each abbreviated keyword, numeric value, and parameter must be separated by a comma.

A parameter equal keyword must immediately precede the first parameter of a parameter list. The parameter list must be entered last. The system ignores all invalid keywords and parameters in the original data entry. It also ignores every numeric value and parameter list except the last ones entered. This facilitates correction of information in the original data entry. The incorrect information need simply be followed by a comma and the correct information entered (whether it be an abbreviated keyword, a numeric value, a parameter, or an entire parameter list).

Note: Care must be exercised when correcting parameters for a terminal list status change. Every valid symbolic terminal identification in the parameter list causes that terminal's status to be changed.

If, after analyzing the original or subsequent data entries, the Master Terminal program cannot determine what service has been requested, or if enough information has not been entered to perform the requested service, more information is solicited from the requesting terminal. The response to a request for more information must be an unabbreviated keyword, a numeric value, or a parameter list.

Below are three examples of how a master terminal operator might inquire about the status of the single terminal identified as L60A. The information entered by the master terminal operator has been underlined.

```
CSMT TERMNL,SINGLE,INQURY TERMID=L60A
STATUS IS
IN SERVICE
TRANSCEIVE

CSMT INQURY,TETMNI,TERMNL
SINGIE, LIST, CLASS, OR ALL SINGLE
ENTER TERMINAL ID TERMID=L60A
STATUS IS
IN SERVICE
TRANSCEIVE
```

Note: The misspelled keyword TETMNL was ignored by the Master Terminal program.

```
CSMT
WHAT SERVICE IS REQUESTED?
TERMINAL
SINGLE, LIST, CLASS, OR ALL INQUIRY
SINGLE, LIST, CLASS, OR ALL SINGLE
```

```
ENTER TERMINAL ID TERMID=L60A
STATUS IS
IN SERVICE
TRANSCEIVE
```

Note: The keyword INQURY could have been entered at any time in this last example.

The operator should be aware of the following restrictions in the use of the Master Terminal Program.

1. Only the last numeric value in the original data entry will be accepted from that data entry.

2. Only the last parameter list in the original data entry will be accepted from that data entry.

3. Only abbreviated keywords, a numeric value, and a parameter list may be entered in the original data entry.

4. Only unabbreviated keywords, a numeric value, or a parameter list may be entered in a response to a request for more information from the Master Terminal Program.

5. Only one of the following keywords may be entered for each use of the Master Terminal Program.

   ATP MAXIMUM TASKS (ATPMXT)
   BATCH MAXIMUM TASKS (BMAXT)
   CLOSE
   CONSECUTIVE DISPATCH LIMIT (CDL)
   CONTROL UNIT (CNTRL)
   CUSHION (CUSH)
   LINE
   MAXIMUM TASKS (MAXT)
   NEGATIVE POLL (NEGP)
   OPEN
   PROGRAM (PGRM)
   RUNAWAY (RNAWAY)
   SHUTDOWN (SHUTDN)
   STALL
   SWITCH
   TERMINAL (TERMNL)
   TIME
   TRACE
   TRIGGER (TRIGER)

6. Only one of the following keywords may be entered for each use of the Master Terminal Program

   SINGLE
   LIST
   CLASS
   ALL

7. Only one of the following keywords may be entered for each use of the Master Terminal Program.

   TERMINATE
   SUSPEND
   INTERCEPT
   DISPLAY

Note: If DISPLAY is entered when putting a terminal out of service, the Master Terminal Program will display the transaction

identification of the task associated with the requested terminal and will then ask for one of the other three keywords above.

8. Only one of the following keywords may be entered for each use of the Master Terminal Program.

   ON
   OFF

9. Only one of the following keywords may be entered for each use of the Master Terminal Program.

   IN SERVICE
   OUT OF SERVICE
   RECEIVE
   TRANSCEIVE
   TRANSACTION

10. Only one of the following keywords may be entered for each use of the Master Terminal Program.

    DATA BASE (DATBAS)
    DUMP
    TRANSIENT DATA (TRANSD)

11. There are certain cases in which the Master Terminal Program may not be able to terminate a task when requested to do so. If the request is to terminate a task without putting the terminal associated with the task out of service, the Master Terminal Program will respond with the message "TASK WAS ACTIVE". If the request was to put a terminal out of service and to terminate the task associated with that terminal, the task will be suspended and a message to that effect will be returned. If the requested service was to put a line or control unit out of service and terminate any tasks associated with the terminals connected to that line or control unit, a message is issued indicating how many tasks were suspended will be returned.

The master terminal can also inquire about or change any of the following parameters relating to the operation of CICS. Each parameter is defined, and examples showing typical operator entry and terminal response are given as applicable.

a. System partition/region exit time interval

   Definition: Inquire about or change the maximum time interval in milliseconds that CICS will release control to OS in the event there are no transactions ready to resume processing. Typical time interval might be 1000 milliseconds. For example:

   1. ENTER: CSMT
      RECEIVE: WHAT SERVICE IS REQUESTED
      ENTER: TIME
      RECEIVE: WHAT IS THE NEW TIME INTERVAL VALUE
      ENTER: 2000
      RECEIVE: THE TIME INTERVAL IS CHANGED TO 2000 FROM 1000

      or

   2. ENTER: CSMT TIME,2000
      RECEIVE: THE TIME INTERVAL VALUE IS CHANGED TO 2000 FROM 1000

      or

```
3.  ENTER:      CSMT TIME,INQURY
    RECEIVE:    TIME INTERVAL VALUE IS 1000
```

b. Runaway task time interval

Definition: Inquire about or change the time that a task can be in a runaway (loop) ccndition. Typical runaway time interval might be 5000 milliseconds. For example:

```
1.  ENTER:      CSMT RNAWAY
    RECEIVE:    WHAT IS NEW RUNAWAY TASK INTERVAL VALUE
    ENTER:      4000
    RECEIVE:    RUNAWAY TASK INTERVAL IS CHANGED TO 4000 FROM 5000
```

or

```
2.  ENTER:      CSMT RNAWAY,0
    RECEIVE:    RUNAWAY TASK INTERVAL IS CHANGED TO 0 FROM 4000
```

Note: Setting runaway to zero causes runaway tc be inoperative.

or

```
3.  ENTER:      CSMT RNAWAY,INQURY
    RECEIVE:    RUNAWAY TASK INTERVAL IS 0
```

c. Storage cushion size

Definition: Inquire about or change the storage cushion to minimize overload conditions. However, cushion size does not actually change until existing cushion is released. When cushion is regained, the cushion will be the size indicated by the new value. For example:

```
1.  ENTER:      CSMT
    RECEIVE:    WHAT SERVICE IS REQUESTED?
    ENTER:      CUSHION
    RECEIVE:    WHAT IS THE NEW CUSHION SIZE
    ENTER:      1900
    RECEIVE:    CUSHION SIZE IS CHANGED TO 1900 FROM 2000
```

or

```
    ENTER:      CSMT CUSH,500
    RECEIVE:    CUSHION SIZE IS CHANGED TO 500 FROM 500
```

or

```
3.  ENTER:      CSMT CUSH,INQURY
    RECEIVE:    CUSHION SIZE IS 500
```

d. Maximum number of tasks designation (not applicable to CICS/DOS-ENTRY).

Definition: Inquiry about or change the limit of the number of tasks that can be active in the CICS system at any one time. The range is from 1 to 999. For example:

```
1.  ENTER:      CSMT
    RECEIVE:    WHAT SERVICE IS REQUESTED?
    ENTER:      MAXIMUM TASKS
    RECEIVE:    WHAT IS THE NEW MAXIMUM TASKS VALUE
```

```
ENTER:      6
RECEIVE:    MAXIMUM TASKS IS CHANGED TO 6 FROM 5
```

or

```
2.  ENTER:      CSMT MAXT,20
    RECEIVE:    MAXIMUM TASKS IS CHANGED TO 20 FROM 25
```

or

```
3.  ENTER:      CSMT INQURY,MAXT
    RECEIVE:    MAXIMUM TASKS IS 20
```

e. Maximum number of ATP tasks designation (not applicable to CICS/DOS-ENTRY)

Definition: Inquire about or change the maximum number of ATP batches that can be in process at any one time. This does not include those being operated upon by CRDR or CWTR. For example:

```
1.  ENTER:      CSMT INQURY,ATPMXT
   RECEIVE:     ATP MAXIMUM TASKS IS 10
```

f. Maximum number of batched tasks designation (not applicable to CICS/DOS-ENTRY)

Definition: Inquire about or change the maximum number of tasks which is a combination of regular terminal tasks and ATP batch tasks. For example:

```
1.  ENTER:      CSMT INQURY,BMAXT
   RECEIVE:     BATCH MAXIMUM TASKS IS 15
```

g. Status of batched tasks (not applicable to CICS/ DOS-ENTRY)

Definition: Inquire into the status of batches currently in the system without regard to possible password protection. For example:

```
1.  ENTER:      CSMT CWTR STATUS
    RECEIVE:    DFH1960 T40A XXXXXXXX STATUS BEING SAVED
                DFH1960 T51C XXXXXXXX STATUS BEING PROCESSED
```

Refer to the explanation of message DFH1960 for further information. The word "BATCH" in the normal message will be replaced, in this instance, by the terminal identification and, if the batch is password protected, an asterisk.

h. Consecutive dispatch limit (CICS/DOS-ENTRY only)

Definition: Valid only in the CICS/DOS-ENTRY, sets a limit to the number of input/output operations performed by a transaction before that task is rolled out. Can be any value between 1 and 999. For example:

```
1.  ENTER:      CSMT
    RECEIVE:    WHAT SERVICE IS REQUESTED
    ENTER:      CONSECUTIVE DISPATCH LIMIT
    RECEIVE:    WHAT IS THE NEW CDL VALUE
    ENTER:      10
    RECEIVE:    CDL IS CHANGED FROM 5 to 10
```

or

```
2. ENTER:      CSMT CDL
   RECEIVE:    WHAT IS THE NEW CDL VALUE
   ENTER:      2
   RECEIVE:    CDL IS CHANGED FROM 5 to 2

                              or

3. ENTER:      CSMT INQURY,CDL
   RECEIVE:    CDL IS 2
```

i. Negative poll delay for a line

Definition: Inquire about or change the negative poll delay for the line associated with a specific terminal. The default values vary by device type and range from 0 to 1600. For example:

```
1. ENTER:      CSMT
   RECEIVE:    WHAT SERVICE IS REQUESTED?
   ENTER:      NEGATIVE POLL
   RECEIVE:    NAME A TERMINAL ON THE LINE
   ENTER:      TERMID=XXXX
   RECEIVE:    TERMINAL ID CANNOT BE FOUND
               NAME A TERMINAL ON THE LINE

   ENTER:      TERMID=nnnn (nnnn is a valid terminal id such as
               R60A)
   RECEIVE:    WHAT IS THE NEW NEGATIVE POLL DELAY
   ENTER:      1000
   RECEIVE:    NEGATIVE POLL DELAY IS CHANGED TO 1000 FROM 960

                              or
2. ENTER:      CSMT NEGP=1000,TERMID=nnnn
   RECEIVE:    NEGATIVE POLL DELAY IS CHANGED TO 1000 FROM 960

                              or

3. ENTER:      CSMT NEGP,INQURY,TERMID=nnnn
   RECEIVE:    NEGATIVE POLL DELAY IS 960
```

j. Turn the CICS trace function on or off

Definition: Used in conjunction with on or off to start or stop logging entries in the Trace Table. Current status of trace (on or off) cannot be inquired about. For example:

```
1. ENTER:      CSMT TRACE
   RECEIVE:    IS TRACE FACILITY TO BE TURNED ON OR OFF ?
   ENTER:      OFF
   RECEIVE:    TRACE FACILITY IS NOW DISABLED

                              or

2. ENTER:      CSMT TRACE,ON
   RECEIVE:    TRACE FACILITY IS NOW ENABLED
```

k. Stall time interval

Definition: Inquire about or change the value of the stall time interval. Typical stall time interval might be 20000 milliseconds. For example:

```
1. ENTER:      CSMT STALL
   RECEIVE:    WHAT IS THE NEW STALL INTERVAL VALUE
```

```
ENTER:      15000
RECEIVE:    STALL INTERVAL IS CHANGED TO 15000 FROM 20000
```

or

```
2.  ENTER:      CSMT STALL,INQURY
    RECEIVE:    STALL INTERVAL IS 15000
```

or

```
3.  ENTER:      CSMT STALL
    RECEIVE:    WHAT IS THE NEW STALL INTERVAL VALUE
    ENTER:      CANCEL
    RECEIVE:    CANCEL REQUESTED BY TERMINAL OPERATOR
```

l. Trigger level for a Transient Data intrapartition data set

Definition: Specifies the number of data records (trigger level) to be accumulated for a destination before automatically requesting the creation of a task to process these records. For example:

```
1.  ENTER:      CSMT
    RECEIVE:    WHAT SERVICE IS REQUESTED?
    ENTER:      TRIGGER
    RECEIVE:    ENTER
                DESTINATION ID
    ENTER:      DESTID=DCIN
    RECEIVE:    WHAT IS THE NEW TRIGGER LEVEL VALUE
    ENTER:      006
    RECEIVE:    TRIGGER LEVEL IS CHANGED TO 6 FROM 5
```

or

```
2.  ENTER:      CSMT INQURY,TRIGER,DESTID=DCIN
    RECEIVE:    TRIGGER LEVEL IS CHANGED TO 6 FROM 6
```

m. Open or close one or more Transient Data extrapartition data sets.

Definition: Used during real time execution to open or close one or more extrapartition data sets. Gives the CICS Master Terminal the ability to dynamically open or close these data sets. For example:

```
1.  ENTER:      CSMT TRANSD
    RECEIVE:    WHAT SERVICE IS REQUESTED?
    ENTER:      OPEN
    RECEIVE:    SPECIFY DESTINATION I.D.'S
    ENTER:      DESTID=XDK1..S6,XDK2..DY,XTDA,XTDB,XDK3..DY,XXXX
    RECEIVE:    SPECIFY OVERRIDES FOR DESTID XDK3
    ENTER:      OVPARM=INPUT,2,VB,,40,80,TDXDK3I
    RECEIVE:    SPECIFY OVERRIDES FOR DESTID XDK2
    ENTER:      OVPARM=OUTPUT,,FBS,,40,120,TDXDK20

    RECEIVE:    XXXX CAN NOT BE OPENED
                XDK3..DY HAS BEEN OPENED
                XTDB    HAS BEEN OPENED
                XTDA    HAS BEEN OPENED
                XDK2..DY HAS BEEN OPENED
                XDK1..S6HAS BEEN OPENED
                **END**
```

or

```
2.  ENTER:      CSMT CLOSE,DESTID=XDK1..S6,DK2..DY,XTDA,XTDB,XDK3,
```

```
                XXXX
RECEIVE:        WHAT TYPE OF DATA SETS ARE BEING CLOSED (DATABASE,
                TRANSDATA, OR DUMP).
ENTER:          TRANSIENT DATA
RECEIVE:        XXXX     CAN NOT BE CLOSED
                XDK3     HAS BEEN CLOSED
                XTDB     HAS BEEN CLOSED
                XTDA     HAS BEEN CLOSED
                XDK2..DY HAS BEEN CLOSED
                XDK1..S6 HAS BEEN CLOSED
                **END**
```

n. Open, close, or switch the dump data set.

Definition: Used during real-time execution to switch, close or open the dump data set. Gives the master terminal operator the ability to obtain CICS dumps taken during prior processing. For example:

```
1.  ENTER:      CSMT OPEN,DUMP
    RECEIVE:    DFHDMPA IS NOW THE ACTIVE DUMP DATASET

2.  ENTER:      CSMT SWITCH
    RECEIVE:    DFHDMPB IS NOW THE ACTIVE DUMP DATASET

3.  ENTER:      CSMT SWITCH
    RECEIVE:    DFHDMPA IS NOW THE ACTIVE DUMP DATASET

4.  ENTER:      CSMT SWITCH
    RECEIVE:    DFHDMPB IS NOW THE ACTIVE DUMP DATASET

5.  ENTER:      CSMT DUMP,CLOSE
    RECEIVE:    DUMP DATASET NOW CLOSED
```

o. Open or close one or more data base data sets.

Definition: Allows the terminal operator to place all or selected portions of the data base offline or online to real-time processing. If all files are specified, the keyword ALL must be used in the first line entered. The operator can also inquire about the status of the data base data sets. For example:

```
1.  ENTER:      CSMT DATBAS
    RECEIVE:    PLEASE SPECIFY FILE I.D.'S
    ENTER:      OPEN
    RECEIVE:    PLEASE SPECIFY FILE I.D.'S
    ENTER:      FILEID=DBASE1,DBASE2,XXXX
    RECEIVE:    NEW DATA BASE STATUS IS:

                FILE ID -------- STATUS --------
                XXXX       **DOES NOT EXIST
                DBASE2 OPEN,READ
                DBASE1 OPEN,READ
                **END**

                                or

2.  ENTER:      CSMT OPEN,DATBAS,ALL
    RECEIVE:    NEW DATA BASE STATUS IS:

                FILE ID -------- STATUS --------

                (a complete list of all files and their status)

                **END**
```

or

```
3.  ENTER:      CSMT CLOSE,FILEID=DBASE1,DBASE2,XXXXX
    RECEIVE:    WHAT TYPE OF DATA SETS ARE BEING CLOSED?(DATABASE,
                TRANSDATA OR DUMP).
    ENTER:      DATABASE
    RECEIVE:    NEW DATA BASE STATUS IS:

                FILE ID -------- STATUS --------
                XXXXX      **DOES NOT EXIST
                DBASE2 CLOSED,READ
                DBASE1 CLOSED,READ
                **END**
```

p. Status of a program (inquiry only)

Definition: Inquire about the status of a program. Used to verify the status of a program before attempting to alter the program or system. For example:

```
1.  ENTER:      CSMT
    RECEIVE:    WHAT SERVICE IS REQUESTED?
    ENTER:      PROGRAM
    RECEIVE:    ENTER
                PROGRAM ID
    ENTER:      PGRMID=DFHMTPA
    RECEIVE:    PROGRAM DFHMTPA IS WRITTEN IN ALC,
                IT IS 4040 BYTES LONG,
                PERMANENTLY CORE RESIDENT,
                IT HAS BEEN USED 000016 TIMES,
                AND ITS CURRENT USE CCUNT IS 0
```

or

```
2.  ENTER:      CSMT PGRM,PGRMID=FC001
    RECEIVE:    PROGRAM FC001 IS WRITTEN IN PL/I,
                IT IS 9128 BYIES LCNG,
                NOT PERMANENTLY CORE RESIDENT,
                IT HAS BEEN USED 0 TIMES,
                AND ITS CURRENT USE CCUNT IS 0
```

or

```
3.  ENTER:      CSMT PGRM,PGRMID=HLL001
    RECEIVE:    PROGRAM HLL001 IS WRITTEN IN COBOL,
                IT IS 03C8 BYTES LCNG,
                NOT PERMANENTLY CORE RESIDENT,
                IT HAS BEEN USED 0 TIMES,
                AND ITS CURRENT USE CCUNT IS 0
```

q. Terminate a task that is attached to a specific terminal.

Definition: Used to terminate a task on a terminal where the task to be terminated is encumbering system resources. For example:

```
1.  ENTER:      CSMT TRMNAT
    RECEIVE:    ENTER TERMINAL ID
    ENTER:      TERMID=XXXX
    RECEIVE:    TASK WAS NOT ACTIVE
```

or

2. ENTER: CSMT TRMNAT,TERMID=L60B
   RECEIVE: TASK WAS ACTIVE

or

3. ENTER: CSMT TRMNAT,TERMID=L60B
   RECEIVE: TASK WAS TERMINATED

r. Inquire about or change the status of a control unit (not applicable to TCAM terminals).

Definition: Inquire about or change the service status of a remote 2848 Control Unit. This function can be used to place all the terminals associated with that particular control unit to out of service or in service. For example:

1. ENTER: CSMT CNTRL,INQURY,TERMID=NNNN
   RECEIVE: CONTROL UNIT
   OUT OF SERVICE

or

2. ENTER: CSMT CNTRL,INSRV,TERMID=NNNN
   RECEIVE: CCNTROL UNIT
   IN SERVICE

s. Terminate CICS.

Definition: Shutdown or suspend all CICS terminal operation. Can only be enacted by a master terminal operator. For example:

1. ENTER: CSMT SHUTDN
   RECEIVE: IS SHUTDOWN TC BE IMMEDIATE?
   ENTER: CANCEL
   RECEIVE: SHUTDOWN REQUEST HAS BEEN CANCELED BY THE OPERATOR

or

2. ENTER: CSMI SHUTDN
   RECEIVE: IS SHUTDOWN TO BE IMMEDIATE?
   ENTER: NO
   RECEIVE: DH1701 - CICS IS BEING TERMINATED

or

3. ENTER: CSMI SHUTDN
   RECEIVE: IS SHUTDOWN TO BE IMMEDIATE?
   ENTER: YES,DUMP
   RECEIVE: DFH1701 - CICS IS BEING TERMINATED

or

4. ENTER: CSMI SHUTDN
   RECEIVE: IS SHUTDOWN TO BE IMMEDIATE?
   ENTER: NO
   RECEIVE: SHUTDOWN ALREADY IN PROGRESS

t. Inquire about or change the status of terminals.

Definition: Used to inquire about the status of a terminal, or to change it's status. For example:

```
1.  ENTER:      CSMT TERMNL,SINGLE,INQURY,TERMID=L60A
    RECEIVE:    STATUS IS
                IN SERVICE
                TRANSACTION

                                or

2.  ENTER:      CSMT TERMNL,SINGLE,INSRV,TERMID=L60B
    RECEIVE:    STATUS IS
                IN SERVICE
                TRANSCEIVE

                                or

3.  ENTER:      CSMT TERMNL,SINGLE,OUTSRV,DISPLY,TERMID=L60C
    RECEIVE:    STATUS IS
                OUT OF SERVICE
                TRANSCEIVE
                TRANSACTION ID IS CSSN
                ENTER
                INTERCEPT
                TERMINATE
                SUSPEND
    ENTER:      TERMINATE
    RECEIVE:    STATUS IS
                OUT OF SERVICE
                TRANSCEIVE
                TASK WAS
                TERMINATED
```

MESSAGES ASSOCIATED WITH NON-BATCHED TRANSACTIONS

1. PASSWORD FIELD ERROR

   Explanation: "PS=" is not in positions 6-8.

   System Action: The sign-on transaction is terminated.

   Operator Response: Reenter the sign-on transaction.

2. NAME FIELD NOT FOUND

   Explanation: "NAME=" is not found in positions 14-18.

   System Action: The sign-on transaction is terminated.

   Operator Response: Reenter the sign-on transaction.

3. NAME ERROR

   Explanation: The entered operator name is not in the Sign-on Table.

   System Action: The sign-on transaction is terminated.

   Operator Response: Verify the entered name. If the name is incorrect, reenter the transaction with the correct name. If the name is correct, contact the CICS system programmer.

4. PASSWORD ERROR

   Explanation: Incorrect password. The password is assigned at the time the Sign-on Table is generated by the user.

   System Action: The sign-on transaction is terminated.

   Operator Response: Verify the entered password. If the password is incorrect, reenter the transaction with the correct password. If the password is correct, contact the CICS system programmer.

5. TRANSACTION HAS BEEN ABNORMALLY TERMINATED

   Explanation: An abnormal condition has been detected in the processing of the transaction; it has been determined to be unwise or impossible to continue processing the transaction.

   System Action: The transaction has been terminated.

   Operator Response: Operator action must be determined by the user as different transactions and applications will likely require different treatment. If not specifically instructed how to handle this condition, it is suggested that the person in charge be notified.

6. TRANSACTION xxxx PURGED - SYSTEM UNDER STRESS - PLEASE RESUBMIT

Explanation: The system is approaching an overload condition; it has been determined necessary to reduce the activity in the system in order to recover. xxxx represents a four-character transaction identification.

System Action: The identified transaction has been automatically terminated (purged) from the system.

Operator Response: Under most circumstances, the transaction can be resubmitted successfully as soon as the system makes the invitation.

7. INVALID TRANSACTION IDENTIFICATION - PLEASE RESUBMIT

Explanation: The transaction code does not match an entry in the Program Control table.

System Action: CICS continues the polling cycle and repolls the terminal.

Operator Response: Enter the proper code, followed by the message.

8. MESSAGE TOO LONG PLEASE RESUBMIT

Explanation: The message has exceeded the maximum length allowed, or in the case of data that is treated sequentially from a sequential device (card reader, disk, tape), a 0-2-8 punched card code or the equivalent is missing following the input data.

System Action: None.

Operator Response: Shorten the message and reenter it or enter the message in two parts. If the message is entered in two parts and if the data is treated sequentially from a sequential device (card reader, disk, tape), place a 0-2-8 punched card code or the equivalent following the input data.

9. OPERATOR HAS NOT SIGNED ON - PLEASE SIGN ON

Explanation: The terminal has not been signed on.

System Action: Continues the polling cycle.

Operator Response: Sign on to the system using transaction CSSN.

9. SECURITY KEY VIOLATION HAS BEEN DETECTED

Explanation: The operator has requested a transaction which is not available to that operator.

System Action: Continues the polling cycle and notifies the master terminal operator at destination CSMT.

Operator Response: Determine whether the operator is to be allowed to request the transaction. If so, correct the security key for the operator in the Operator Sign-on Table.

11. START SYMBOL MISSING

Explanation: Applicable to all 2260/2265 terminals. Either the START symbol was not present on the screen when ENTER was hit or the cursor was immediately in front of the start symbol when ENTER was hit.

System Action: None.

Operator Response: Place the start symbol in the proper position and reenter the message.

12. AUTOMATIC OUTPUT IS BEING REQUESTED

Explanation: This is the first message associated with automatic output on a buffered terminal, such as the 2740 Model 2.

System Action: A transaction is attached to the terminal and automatic output follows this message.

Operator Response: Data should not be keyed until the automatic output transaction has terminated.

Note: When data is being keyed and the attention light turns on, an attempt is being made to write a message to the terminal. If the write operation is associated with a transaction, the buffer must be reset to allow the message to print. If the "automatic output is being requested" message turns on the attention light, the operator can continue keying data since polling will occur for 26 seconds before another attempt is made to write the message again.

13. READY

Explanation: Applicable only to switched lines with terminal "answerback", this message is the response to a correct terminal identification when the terminal operator has keyed the four-character terminal identification as the first entry of data after establishing the line connection.

System Action: A line event is initiated by Terminal Control.

Operator Response: Start keying a transaction.

14. INVALID TERMINAL IDENTIFICATION

Explanation: Applicable only to switched lines with terminal "answerback", this message indicates that the terminal identification code does not match a terminal identification entry in the terminal pool associated with the line.

System Action: The line is disconnected.

Operator Response: Key the four-character terminal identification as the first data entry after establishing the terminal connection.

15. TERMINAL OUT OF SERVICE

Explanation: Applicable only to switched lines with terminal "answerback", this message indicates that although the terminal identification is valid, the terminal is out of service and cannot be used to initiate transactions or receive output.

System Action: The line is disconnected.

Operator Action: After the terminal is placed back in service, the operator can retry the line connection.

16. TERMINAL IN USE

Explanation: Applicable only to switched lines with terminal "answerback", this message indicates that although the terminal identification is valid, the terminal is logically connected to another line or is in use by ancther operator.

System Action: The line is disconnected.

Operator Action: Determine the proper terminal identification and retry the line connection.

Note: If the operating terminal is communicating with a 7770, the "error message" will be returned for items 5 through 10 and 14 through 16 above. Therefore, the operator response should take into consideration all these items. The "ready message" will be returned for item 13 above.

MESSAGES ASSOCIATED WITH BATCHED TRANSACTIONS

MESSAGES RETURNED TC TERMINAL OPERATOR

1. DFH1029 PLEASE RESEND

Explanation: This message is sent to 2980 terminal operators when the system is under stress or the input is unsolicited. (The active task associated with the terminal has not issued a read.)

System Action: None.

Operator Action: Resubmit data.

2. DFH1941 UNRECOGNIZED FIELD IN CRDR MSG

Explanation: At least cne of the fields in the CRDR statement cannot be interpreted.

System Action: This message is fcllowed by the DFH1947 message.

Operator Action: Examine the CRDR statement for incorrect syntax or spelling errors. Correct any errors and enter the request again.

3. DFH1942 ATP IS NCT SUPPORTED

Explanation: CRDR was requested but ATP=NO was specified either in the System Initialization Table (SIT) or during system generation.

System Action: This message is followed by the DFH1947 message.

Operator Action: CICS must be restarted with the ATP function made operational.

4. DFH1943 PARAMETER HAS AN IMPROPER LENGTH

Explanation: One of the keyword parameters is either too long or does not exist (for example, EXIT,DELIM=AB).

System Action: This message is followed by the DFH1947 message.

Operator Action: Same as DFH1941.

5. DFH1944 BATCH WOULD CAUSE A DUPLICATE NAME

Explanation: Another batch originating from this terminal already exists within CICS.

System Action: This message is followed by the DFH1947 message.

Operator Action: Resubmit the CRDR statement specifying a different batch name.

6. DFH1945 INSUFFICIENT CORE AT THIS TIME

Explanation: Currently there is not enough storage to provide a buffer for the batch. Submit the batch later.

System Action: This message is followed by the DFH1947 message.

Operator Action: Wait a short time and resubmit the batch.

7. DFH1946 EXIT PROGRAM DOES NOT EXIST

Explanation: The requested exit program could not be located.

System Action: This message is followed by the DFH1947 message.

Operator Action: Verify that the exit program actually exists in the program library and is identified in the Processing Program Table (PPT).

8. DFH1947 ENTER STOP TO TERMINATE CRDR

Explanation: An error has been detected by CRDR. The operator must either submit a message having STOP as its first four characters or the uniquely defined delimiters for this batch in order tc terminate CRDR.

System Action: When STOP or the batch delimiter(s) has been entered, CRDR will terminate.

Operator Action: Correct any errors and resubmit the batch.

9. DFH1948 DISK QUEUE IS EXHAUSTED

Explanation: The Transient Data Intrapartition data set is full. The batch causing the message will be deleted.

System Action: This message is followed by the DFH1947 message.

Operator Action: Wait a short time and resubmit the batch. If the error persists, notify the system administrator so that action can be taken to relieve the Transient Data queue load.

10. DFH1949 DATA RECORD TOC LARGE

Explanation: A record has been passed to CRDR that will not fit in the Transient Data buffer. The batch causing the message will be deleted.

System Action: This message is followed by the DFH1947 message.

Operator Action: Determine the reason for the large record or verify that the buffer size is correct.

11. DFH1950 BATCH XXXXXXXX RECORD COUNT-NNNNN

Explanation: CRDR has completed processing the named batch. The record count includes delimiters and records inserted by the exit routine. The initial CRDR message is not included in this count.

System Action: No action is required.

Operator Action: No action is required.

12. DFH1951 BATCH HAS BEEN DELETED

Explanation: The DELETE service was requested in last delimiter statement.

System Action: No action is required.

Operator Action: No action is required.

13. DFH1952 BATCH IS BEING HELD

Explanation: The HOLD service was requested in the last delimiter statement.

System Action: No action is required.

Operator Action: No action is required.

14. DFH1960 BATCH XXXXXXXX STATUS QUEUEING AREA FULL
READY FOR PROCESSING
BEING PROCESSED
READY FOR OUTPUT
BEING SAVED
AWAITING DELETION
BATCH BEING HELD

Explanation: The status of a batch was requested. More than one message may apply to any one batch.

System Action: No action is required.

Operator Action: No action is required.

15. DFH1961 BATCH HANDLING STATUS-ATP IS NOT SUPPORTED

Explanation: CWTR was requested but ATP=NO was defined either in the System Initialization Table or during system generation.

System Action: The CWTR request is ignored.

Operator Action: CICS must be restarted with the ATP function made operational.

16. DFH1962 BATCH XXXXXXXX STATUS UNKNOWN OR PROTECTED

Explanation: Output or status was requested from the batch named; however, the batch could not be located or was password protected.

System Action: This particular request of CWTR is ignored. Any other valid requests are processed as well as any previously submitted requests for output still outstanding.

Operator Action: Verify that the name of the batch and any required SOURCE or PASSWD parameters are spelled correctly.

17. DFH1963 KEYWD XXXXX STATUS-UNRECOGNIZED SYNTAX

Explanation: At least one of the parameters on the CWTR statement could not be interpreted.

System Action: The CWTR request is ignored.

Operator Action: Examine the CWTR statement for incorrect syntax or spelling errors. Correct the errors and enter the request again.

18. DFH1964 BATCH XXXXXXXX STATUS-SAVED PER REQUEST
19. DFH1965 BATCH XXXXXXXX STATUS-DELETED PER REQUEST
20. DFH1966 BATCH XXXXXXXX STATUS-RELEASED PER REQUEST

Explanation: This message acknowledges action on the user's request.

System Action: The request has been honored.

Operator Action: No action required.

21. DFH1967 BATCH XXXXXXXX STATUS-EXIT YY NOT FOUND

Explanation: A CWTR exit routine, DFHXITyy, was requested but could not be located in the Processing Program Table (PPT). The request for output is ignored.

System Action: This particular request of CWTR is ignored. Any other valid requests are processed as well as any previously submitted requests for output still outstanding.

Operator Action: Verify that the exit program actually exists in the program library and that it is identified in the Processing Program Table (PPT).

22. DFH1968 BATCH XXXXXXXX STATUS-NOT YET READY

Explanation: Output has been requested from the named batch but processing is not yet completed.

System Action: Same as for DFH1962 message.

Operator Action: No action required. The request for output has been posted and will occur when the processing of the batch is completed.

23. DFH1969 BATCH OUTPUT STATUS-NOTHING PENDING NOW

Explanation: Nothing is available to be transmitted in response to the last request.

System Action: None.

Operator Action: No action required.

24. DFH1970 BATCH XXXXXXXX STATUS-DUP ACTION REQUESTED

Explanation: The output service has been previously requested. This request is ignored.

System Action: Same as for DFH1962 message.

Operator Action: No action required.

25. DFH1971 BATCH XXXXXXXX STATUS-INVALID OUTPUT OPER

Explanation: The transaction program has requested a terminal output service not supported by CWTR.

System Action: The record, which follows this message, was written by the transaction program using an output request that is not support by ATP; for example,, DFHTC TYPE=DISCONNECT. The message is transmitted ignoring the invalid action.

Operator Action: No action required.

MESSAGES RETURNED TO MASTER TERMINAL (DESTINATION CSMT)

The following messages are sent to the Transient Data destination CSMT by the Asynchronous Transaction Control Program (DFHATP)

1. DFH1901-XXXX INVALID OUTPUT DESTINATION,BATCH=YYYYYYYY, TERM=ZZZZ

Explanation: Four (4) X's identify the terminal destination where output from batch YYYYYYYY was to be transmitted as per

user request. When ATP attempted to schedule a CWTR task for that terminal, it found the terminal to be non-existent in the TCT. ZZZZ is the identification of the terminal which originated the batch.

A valid CWTR request must be submitted before output is transmitted.

2. DFH1902 - TRUNCATED OUTPUT FOR BATCH XXXXXXXX, TERM YYYY, XACTN CODE ZZZZ

   Explanation: The transaction program, ZZZZ, attempted to write a record that was too long for the output buffer. The transaction program was operating on the batch, XXXXXXXX, that originated from terminal YYYY.

   System Action: The message was truncated and processing is allowed to continue. Subsequent messages in this batch that are too long will also be truncated but this error message will not be repeated.

   Operator Action: Determine the reason for either the long record or the short buffer.

3. DFH1903 - BATCH XXXXXXXX, TERM YYYY, SUSPENDED-OUTPUT QUEUE EXHAUSTED

   Explanation: The Transient Data intrapartition area is full.

   System Action: Processing of the batch, XXXXXXXX, that originated from terminal YYYY has been suspended.

   Operator Action: Wait a short while and release the batch to resume processing using the statement CWTR NAME=XXXXXXXX, RELEASE. In this condition persists notify the system administrator so that some action might be taken to relieve the strain on the intrapartition queue area.

APPENDIX A: MASTER TERMINAL KEYWORDS

Listed below are the functional keywords acceptable to the Master Terminal. Indicated for each function is the keyword (that must be used if used in the original data entry) and the meaning.

Function	Keyword	Meaning
ADD	ADD	Allows records to be added to the data base data set.
ALL	ALL	Changes the status of all terminals if associated with keyword TERMINAL. However, processing status cannot be changed using this keyword. If used with keyword DATA BASE, will inquire about or change status of all data base data sets.
BATCH MAXIMUM TASKS	BMAXT	Inquire about or change the maximum number of tasks which is a combination of regular terminal tasks and ATP batch tasks. (Not provided for under CICS/DOS-ENTRY.)
ATP MAXIMUM TASKS	ATPMXT	Inquire about or change the maximum ATP tasks. This value must be equal to or less than BMAXT. (Not provided for under CICS/DOS ENTRY).
CANCEL	CANCEL	Nullifies and terminates the master, supervisory, or single terminal operator request.
CLASS	CLASS	Indicates that the service status of a group of terminals defined by a Terminal List Table (TLT) is to be changed.
CLOSE	CLOSE	Used to close data files, transient data extrapartition data sets and the dump data set(s).
CONSECUTIVE DISPATCH LIMIT	CDL	Valid only in the CICS/DOS-ENTRY, sets a limit to number of input/ output operations performed by a transaction. Can be any value between 1 and 999.
CONTROL UNIT	CNTRL	Inquire about or change the service status of a remote 2848 Control Unit.
CUSHION	CUSH	Changes the storage cushion to minimize overload conditions. However, cushion size does not actually change until existing cushion is released. When cushion

Function	Keyword	Meaning
		is regained, the cushion will be the size indicated by the new value.
CWTR	CWTR	Calls the asynchronous transaction output processor for the purpose of displaying or modifying password protected batches.
DISPLAY	DSPLY	When putting a single terminal out of service, displays transaction I.D. of any task that may be associated with that terminal.
DUMP	DUMP	Open or close the dump data set or switch the dump data set, if two were specified.
EXCLUSIVE CONTROL	EXCLSV	One possible status of a data base data set. When used, CICS File Control Program prevents simultaneous updates of the same logic record within a data set. Without this, protection is not provided.
DATA BASE	DATBAS	Open, close, inquire about, or change the status of one or more data base data sets.
INQUIRY	INQURY	The requested service is an inquiry. If this keyword is not entered, a change is assumed.
IN SERVICE	INSRV	One possible service status of a line, control unit, or terminal.
INTERCEPT	INTPCP	When putting a single terminal (which has an associated task) out of service, attaches the requesting terminal to the task for completion (not provided for CICS/DOS-ENTRY).
LINE	LINE	Specifies that a service status function is to be performed on a line.
LIST	LIST	Change the status of a group of terminals that have been previously defined by a Terminal List Table (TLT).
MAXIMUM TASKS	MAXT	Inquire about or change the limit of the number of tasks that can be active in the CICS system at any one time. The range is from 1 to 999. (Not provided for CICS/DOS-ENTRY.)
NEGATIVE POLL	NEGP	Inquire about or change the negative poll delay for a terminal.
OFF	OFF	When associated with the keyword TRACE, turns off the CICS trace

Function	Keyword	Meaning
		facility. When associated with DATA BASE, turns off the indicated status.
CN	ON	When associated with the keyword TRACE, turns on the CICS trace facility. When associated with DATA BASE, turns on the indicated status.
CPEN	OPEN	Applicable only to extrapartition destinations using resident data sets. Specifies how the data set associated with this destination is to be opened.
CUT OF SERVICE	OUTSRV	One possible service status of a line, control unit, or terminal.
PROGRAM	PGRM	Inquire about the status of a program.
READ	READ	One possible type of service request that can be processed against a file data set. Allows records to be read from this data set.
RECEIVE	RECV	One of three possible processing statuses of a terminal.
RUNAWAY	RNAWAY	Inquire about or change the time that a test can be in a runaway (loop) condition. Typical runaway time interval might be 5000 milliseconds.
SHUTDCWN	SHUTDN	Terminate CICS.
SINGLE	SINGLE	Inquire about or change the status of a single terminal.
STALL	STALL	Inquire about or change the value of the stall time interval. Typical stall time interval might be 20000 milliseconds.
SUSPEND	SUSPND	When putting a line, control unit, or terminal(s) out of service, suspend any task which is attached to the terminal(s).
SWITCH	SWITCH	Close the current dump data set and open the alternate dump data set.
TERMINAL	TERMNL	Indicates that service is requested for a terminal function. The terminal function will need to be further defined.
TERMINATE	TRMNAT	When putting a line, control unit, or terminals out of service,

Function	Keyword	Meaning
		terminate any task associated with the terminal(s). When not associated with any other keywords, terminate a task on a specific terminal.
TIME	TIME	Sets the maximum time interval in milliseconds that CICS will release control to OS in the event there are no transactions ready to resume processing. Typical time interval might be 1000 milliseconds.
TRACE	TRACE	Used in conjunction with on or off to start or stop logging entries in the trace table.
TRANSACTION	TRNACT	One possible processing status of a terminal.
TRANSCEIVE	TRNCV	One possible processing status of a terminal.
TRANSIENT DATA	TRANSD	Open or close one or more Transient Data extrapartition data sets.
TRIGGER	TRIGER	Specifies the number of data records (trigger level) to be accumulated for a destination before automatically requesting the creation of a task to process these records.
UPDATE	UPDATE	One possible type of service request that can be processed against the data set. Allows records to be updated on this data set.

APPENDIX E: PARAMETER LIST KEYWORDS

Below is a list of keyword equal parameters and their functions that must be entered in CICS to correctly identify the particular names or variables requested.

Parameter List Keyword	Function
TERMID	Used to specify the unique four-character symbolic terminal identifications that are generated in the Terminal Control Table (TCT) by the user to identify each terminal.
FILEID	Specifies the symbolic data set names for the data sets that are defined in the File Control Table (FCT).
PGRMID	Specifies the program name as defined in the Processing Program Table (PPT).
DESTID	Specifies the symbolic names of the destinations for extrapartition data sets as defined in the Destination Control Table (DCT).
CLASID	Specifies the one- or two-character suffix attached to DFHTLT to load a list of symbolic terminal identifications previously defined in a Terminal List Table (TLT). The list refers to a class of terminal.
SUPRID	Specifies the one- or two-character suffix attached to DFHTLT to load a list of symbolic terminal identifications previously defined in a Terminal List Table (TLT). The list refers to the terminals under control of a supervisory terminal.
CVPARM	Applicable only to CICS/OS, specifies the parameters to be used to build a DCB (which is opened with the specified destination ID). These parameters are positional; if any leading parameters are omitted, their absence must be indicated with a comma. The parameters must be entered in the order indicated below: A. OPEN Option 1. OUTPUT 2. INPUT 3. RDBACK

Parameter List Keyword	Function
B. BUFNO	Value between 1-255
C. RECFM	F - Fixed V - Variable U - Undefined FB - Fixed blocked VB - Variable blocked FS - Fixed standard VS - Variable spanned FBS - Fixed block standard VBS - Variable blocked spanned FA - Fixed ASA control VA - Variable ASA control UA - Undefined ASA control FM - Fixed machine control VM - Variable machine control UM - Undefined machine control FBA - Fixed blocked ASA control FBM - Fixed blocked machine control VBA - Variable blocked ASA control VBM - Variable blocked machine control FBSA - Fixed blocked standard ASA FBSM - Fixed blocked standard machine VBSA - Variable blocked spanned ASA VBSM - Variable blocked spanned machine
D. EROPT	1. IGNORE - Accept error (ACC) 2. SKIP - Skip error (SKP)
E. LRECL	1. Numeric value maximum 32,760 bytes
F. BLKSIZE	1. Numeric value maximum 32,760 bytes
G. DDNAME	1. Up to eight (8) characters

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Customer Information Control System (CICS)
Terminal Operator's Guide

This Technical Newsletter provides replacement pages for the subject manual. These replacement pages remain in effect for subsequent versions and modifications unless specifically altered. Pages to be inserted and/or removed are listed below.

Pages

Preface/Contents
3, 4
5
5.1 (add)
6
9, 10
11, 12
12.1 (add)
19, 20
21, 22
New Reader's Comment Form

Vertical rules in the left margin indicate changes.

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

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