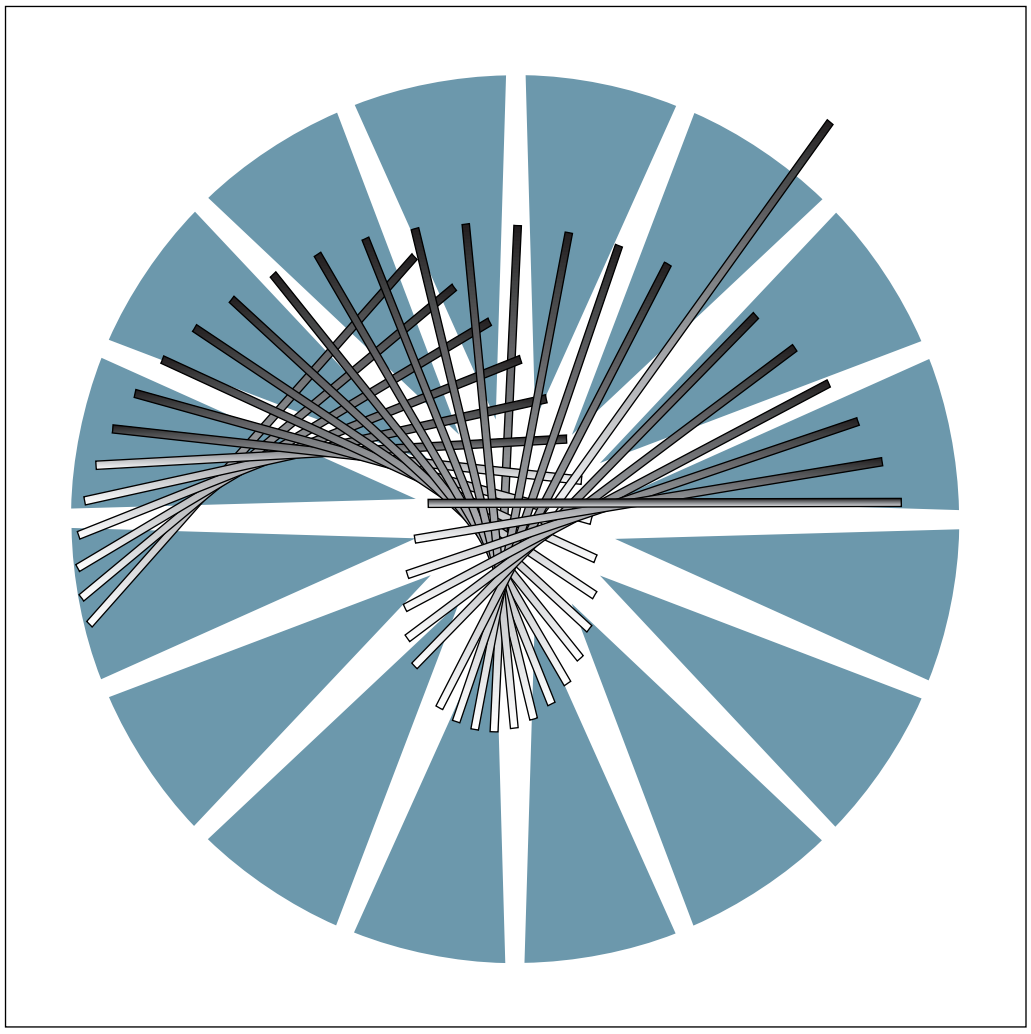
IBM 3745 Communication Controller
All Models

Advanced Operations Guide



SA33-0097-09

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Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page xvii.

Tenth Edition (January 1994)

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Preface

About This Guide

This guide applies to the:

IBM* 3745 Communication Controller Models:	IBM 3746 Expansion Unit Models:
130, 150, 160, 170, 210, 310, 410, and 610 17A, 21A, 31A, 41A, and 61A.	A11 and A12 L13, L14, and L15 900.

It describes only **advanced** operator functions for the 3745. These include the 3745 maintenance and operator subsystem (MOSS) functions and control program (NCP or EP) functions. Basic operator functions are described in one of three (depending on the model 3745 controller that you have) *IBM 3745 Communication Controller: Basic Operations Guides*.

This guide should be used as a **complement** to the MOSS functions invoked from the 3745 operator console or service processor.

This guide is **not** intended for evaluating or learning about the 3745.

Who Should Use This Guide

This guide is intended for experienced 3745 operators and teleprocessing specialists supporting the 3745.

How To Use This Guide

It is recommended that you use this guide as follows:

1. If this is the first time you are using this guide, be sure to read “Conventions Used in This Guide” on page xxiv.
2. If you are not familiar with using the 3745 consoles or the service processor, first read the *3745 Basic Operations Guide* that corresponds to your model controller.
3. Log on and do one of the following:
   - Enter the acronym for a MOSS function. Follow the instructions given on the screen carefully. Only if you need further help, refer to this guide.
   - MOSS functions are listed alphabetically by acronym starting on page 3.
   - Enter DEX to access NCP or EP functions. These are described in “Data Exchange (DEX).”
   - Enter CPP to access control program procedures. These are described in “Control Program Procedures (CPP).”

   Note: You must not be in the maintenance mode to use the functions in this guide.
4. If you need help with an operator message, refer to Appendix D, “Messages.”

In all cases, you can use the table on page 1 to locate information rapidly.

How This Guide Is Organized

This guide is organized as follows:

- MOSS Functions are presented in alphabetical order, with the exception of the Link Test Requester (LTQ) and Link Test Responder (LTS) functions, which are located within the Stand Alone Test (SAT) function, as they form an integral part of that function.

Appendixes and back matter include:

- Machine Status Area Field Definitions
- Default and Personal Patterns for Wrap Tests
- Messages
- List of Abbreviations
- Glossary
- Bibliography
- Index.

Conventions Used in This Guide

- A drawing of a key means you must press that key.

  A solid box (■) indicates that a screen is displayed on the terminal.

  For example, when you see:

  1. Enter C, D, F; then press SEND.
  2. A screen is displayed. On that screen, enter 9; then press SEND.
  3. Another screen is displayed. On that screen, enter 0; then press SEND.

  Note: For Models **17A, 21A, 31A, 41A, and 61A**:

  – Use Ctrl + Pause instead of BREAK

  – Use Enter instead of SEND .

- Text shown below a screen describes the most significant actions that you can perform, including any special F key options available.
- MOSS functions are applicable to all 3745 models, unless indicated otherwise. Where model-specific information is given, the applicable model numbers are shown. Two examples:

  Models 130, 150, 160, 170, 17A

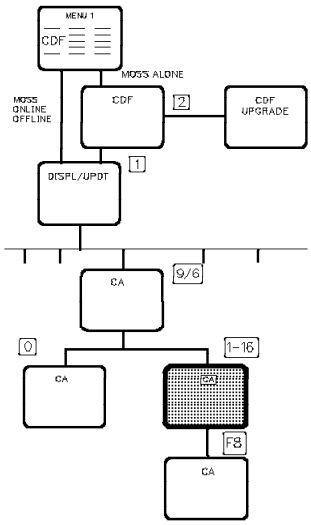
  Models 210, 310, 410, 610
  21A, 31A, 41A, 61A

- To help you contact the appropriate service representative:

  Write the telephone number here

Screen Representation

On the left side of a displayed screen there is a small chart showing the sequence of screens you have to go through before reaching the selected option. In this sequence, the shaded screen corresponds to the one enlarged on the right side of the page.




```
CUSTOMER ID: xxxxxxxxxxxxxxx          3745-x1x         SERIAL NUMBER: nnnnnnn


------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY/UPDATE : CA  5

 SWITCH : -        CAB   : -        PS ID  : -             ADDR : 0800
 IOC    : 1        GROUP : 1        CCU    : A             TYPE : CADS


         I/O ERROR ALERT (Y OR N)                  :   Y

         TWO-PROCESSOR SWITCH MODE (TPS OR TCS)    :   TPS    A


===>
F1:END           F3:ALARM  F5:UPDATE  F6:QUIT  F7:PREVIOUS CA  F8:FWD
```

For the Models **17A, 21A, 31A, 41A, and 61A**, the CONTROLLER ID has been replaced with the term COMM CTRL ID (communication controller ID).

What Is New in This Guide

This guide contains information about new 3745 Model 17A.

Where to Find More Information

This guide should be used in conjunction with the publications shown on page 549.

For further information on the following:

- Transferring a dump to the host
- Transferring the BER file to the host, and printing it
- The scanner interface trace (SIT) function.

Refer to

- *Network control Program/System Support Program Diagnosis Guide*, LY30-5591.

  This manual will be referred to as the *NCP, SSP, and EP Diagnosis Guide*.

The Synchronous Data Link Control (SDLC) is described in the *IBM Synchronous Data Link Control, General Information*, GA27-3093.

For VTAM* commands, you should refer to:

- *VTAM Operation*, SC23-0113
- *Network Control Program, Subsystem Support Program, Emulation Program Version 5.4 Resource Definition Reference*, SC30-3448.

  This manual will be referred to as the *NCP, SSP, and EP Resource Definition Reference*.

The console and keyboard of the 3101-like terminal are fully described in the *IBM 3101 Display Terminal Description*, GA18-2033.

MOSS Functions

Models: No specific comment in the column 'Models' means the MOSS function is applicable to all models.

To set: **MOSS alone,** go to page 12.
MOSS offline, (MOF function) go to page 243.
MOSS online, (MON function) go to page 245.

Table 1 (Page 1 of 2). MOSS Functions (by Acronyms) and Required MOSS Statuses

MOSS Functions by Acronyms and required MOSS Statuses					Models	Page
Acron.	**MOSS Functions**	**Alone**	**Offline**	**Online**		
ABP	Address Compare and Branch Trace Parameter Display		X	X		3
BCK	Bypass CCU Check		X	X		5
BIK	Bypass IOC Check		X	X		7
CBT	Conditional Branch Trace	X	X	X	130, 150, 160, 170, 17A	9
CDF	Configuration Data File	X[1]	X[1]	X[1]		11
CID	Channel Adapter Interface Display	X	X	X		73
CNM	CCU Normal Mode			X		75
CPP	Control Program Procedures		X	X		77
CSR	CCU Selection/Release	X	X	X	410, 41A, 610, 61A	79
CST	CCU Status	X	X	X		81
DAL	Display/Alter		X	X		83
DEX	Data Exchange		X	X		87
DIF	Disk Functions	X	X			127
DII	Disk IPL Information	X	X	X		147
DLO	Display Long		X	X		177
EID	ESS Interface Display		X	X		181
ELD	Event Log Display	X	X	X		185
FBK	Fallback			X	410, 41A, 610, 61A	189
IL3	CCU Level-3 Interrupt			X		193
IML	MOSS IML	X	X	X		195
IMS	Scanner IML			X		197
IPL	3745 IPL	X	X	X		199
LID	Line Interface Display		X	X		209
LKP	Link IPL Ports	X	X	X		219
LTQ	(SAT) Request Link Test Program	X	X	X		303
LTS	(SAT) Responder Link Test Program	X	X	X		309

[1] The required MOSS status depends on the selected option (refer to the appropriate section).

Table 1 (Page 2 of 2). MOSS Functions (by Acronyms) and Required MOSS Statuses

MOSS Functions by Acronyms and required MOSS Statuses					Models	Page
Acron.	**MOSS Functions**	**Alone**	**Offline**	**Online**		
MCF	Microcode Fixes	X	X			231
MLT	Machine Level Table	X	X	X		241
MOF	MOSS Offline			X		243
MON	MOSS Online		X			245
POS	Power Services	X	X	X	210, 21A, 310, 31A, 410, 41A, 610, 61A	247
PSF	Port Swap File	X[1]	X[1]	X[1]		251
PSW	Passwords	X	X	X		265
RAC	Reset Address Compare		X	X		275
RBT	Reset Branch Trace		X	X		277
RCK	Reset CCU Check		X	X		279
RCL	Reset CCU/LSSD		X	X		281
RIO	Reset IOC			X		283
RIS	Reset I-Step		X	X		285
RST	Reset CCU		X	X		287
SAC	Set Address Compare		X	X		289
SAT	Stand-Alone Link Tests		X	X		293
SBK	Switchback		X	X	410, 41A, 610, 61A	313
SBT	Set Branch Trace		X	X		317
SCK	Stop On CCU Check			X		321
SIK	Stop On IOC Check			X		323
SIP	Set I-Step		X	X		325
SIT	Scanner Interface Trace		X	X		327
STP	Stop CCU		X	X		337
STR	Start CCU		X	X		339
TID	TRSS Interface Display		X	X		341
TIM	Time Services	X	X	X		351
WTT	Wrap Test			X		355

[1] The required MOSS status depends on the selected option (refer to the appropriate section).

Address Compare and Branch Trace Parameter Display (ABP)

Use the ABP function to display the parameters of the current Address Compare and Branch Trace functions.


```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: AC/BT PARAMETERS
          ADDRESS COMPARE PARAMETERS      |   BRANCH TRACE PARAMETERS
               CURRENT VALUES             |        CURRENT VALUES

         AC TYPE      = SINGLE            | CCU STOP      = NO
         CCU ACTION   = LI-I              | WRAP MODE     = YES
         MOSS ACTION  = NO                | STOP ON AC    = NO

         ADDRESS 1    = 0907C8            | LOWER LIMIT   = 00000
         ADDRESS 1    = I                 | UPPER LIMIT   = 3FFFFF

         ADDRESS 2    =                   | TRACE LEVELS = 1 2 3 4 5
         ADDRESS 2    =                   |

===>

F1:END  F2:MENU1  F3:ALARM  F4:RESTART AC  F5:RESTART BT
```

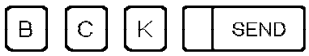
From the above screen:

- Press F4: RESTART AC, to start an address compare using the displayed parameters, if there is no address compare active.
- Press F5: RESTART BT, to start a branch trace using the displayed parameters, if there is no branch trace active.

For a description of the displayed values, refer to "Set Address Compare" on page 289 and "Set Branch Trace" on page 317.

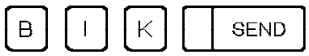
Bypass CCU Check (BCK)

Use the BCK function to allow the CCU to continue to run when a check condition occurs. This function is immediately performed. MSA field j displays BYPASS-CCU-CHK (see page 397).



Bypass IOC Check (BIK)

Use the BIK function to let the CCU continue to run when an IOC-detected level-1 interrupt occurs (default). This function is immediately performed. MSA field i displays BYP-IOC-CHK (see page 397).



Conditional Branch Trace (CBT) Models 130, 150, 160, 17A, and 170

Use the CBT function to set a branch trace that will be initiated by the control program. If a branch trace has not been defined, you will be asked to enter the branch trace options (refer to page 317)

Configuration Data File (CDF)

The configuration data file contains information about:

- 3746 Model XXX
- Central Control Unit (CCU)
- MOSS
- Channel adapters (CAs)
- Line adapters (LAs)
- Ports.

Use the CDF options if:

- You wish to modify the characteristics of a channel adapter, a line adapter or a port.
- You have added, removed or replaced a LIC or a cable.

Consider also the required MOSS status as explained in the following table.

Table 2. CDF Options and MOSS Status

CDF Options	Required MOSS Status		
	Online	Offline	Alone
Upgrade the configuration data file; that is, automatically update the configuration data file **to reflect all 3745 hardware changes**.			X
Display the configuration data file.	X	X	X
Update the configuration data file to modify CA, HPTSS LA, or TSS port characteristics.	X	X	X
Update the configuration data file to reflect a hardware LIC change, or a TSS cable change. (The appropriate line adapter must be operative.)	X	X	
Update the configuration data file to reflect a HPTSS cable change. (The appropriate line adapter must be operative.)	X		

Before selecting the CDF function, check the status of the MOSS (shown on the screen below).

```
CUSTOMER ID:                        3745-XXX        SERIAL NUMBER:
                          MOSS-ONLINE

------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
```

To set the MOSS alone, refer to page 12.

To set the MOSS online or offline, refer to “MOSS On-Line (MON)” on page 245 and “MOSS Off-Line (MOF)” on page 243 respectively.

How to Set the MOSS Alone

Keep in mind that when the MOSS is alone, **the control program is no longer operational**.

- To set the MOSS alone on models 130, 150, 160, 170, 17A, 210, 21A, 310, or 31A:

  1. R S T SEND to reset the CCU.
  2. The messages RESET CCU COMPLETED and MOSS ALONE are displayed on the screen.
  3. Press F1.
  4. Now you can upgrade the configuration data file.

- To set the MOSS alone on models 410, 41A, 610 and 61A:

  Proceed as for the other models but each CCU must be selected and reset. Refer to “CCU Selection/Release (CSR) Models 410, 41A, 610, and 61A” on page 79.

Upgrading the CDF

Upgrade the configuration data file **to reflect all 3745 hardware changes**.

To perform the upgrade, the MOSS must be **alone**. Refer to “How to Set the MOSS Alone” on page 12.

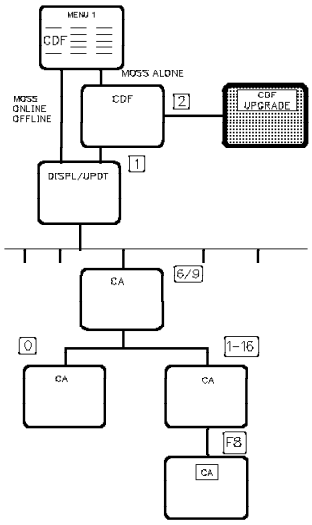
Note: You cannot upgrade the CDF if you canceled the IPL by pressing F1 during the IPL phase 1.

C D F SEND . 2 SEND

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

.
.

If a power supply is not operational when the upgrade function is initiated, the following screen is displayed:



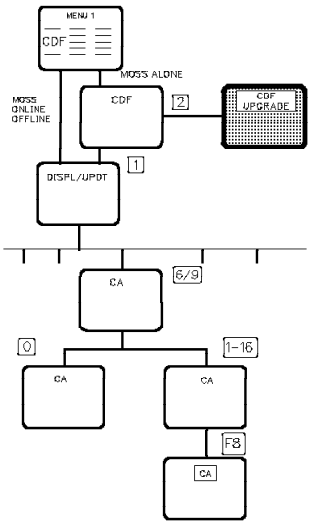

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                             CDF - UPGRADE


- SOME INSTALLED POWER SUPPLIES ARE NOT UP


- TO CONTINUE, SELECT Y OR N, THEN PRESS SEND    ==>



 ===>

 F1:END            F3:ALARM                      F6:QUIT
```

From the above screen:

- Enter Y to continue with the upgrade then the next screen is displayed.
  After the upgrade is completed, hardware associated with non-operational power supplies are considered as not being installed.
- Enter N to cancel the function. Refer to “Power Services (POS) Models 210 to 61A” on page 247 to check the power statuses.

All Models
except 17A, 21A, 31A, 41A, and 61A

.




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - UPGRADE

    ALL  INSTALLED POWER SUPPLIES ARE UP
    MOSS    INFORMATION : FETCHED
    CCU     INFORMATION : FETCHED
    SWITCH  INFORMATION : FETCHED
    CA      INFORMATION : FETCHED
    SCANNER IML         : COMPLETED
    LA      INFORMATION : FETCHED
CDF UPGRADE COMPLETED



 ===>

 F1:END           F3:ALARM                    F6:QUIT
```

Models 17A, 21A, 31A, 41A, and 61A

.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - UPGRADE

CDF UPGRADE STARTED
    ALL  INSTALLED POWER SUPPLIES ARE UP
    MOSS    INFORMATION : FETCHED
    CCU     INFORMATION : FETCHED
    SWITCH  INFORMATION : FETCHED
    CA      INFORMATION : FETCHED
    3746-900INFORMATION : FETCHED
    SCANNER IML         : COMPLETED
    LA      INFORMATIOM : FETCHED
CDF UPGRADE COMPLETED


===>

F1:END       F3:ALARM                  F6:QUIT
```

Refer to Appendix D, “Messages” on page 463 if an error is detected while upgrading the CDF.

Once the upgrade is complete, perform a 3745 IPL if you wish to set the MOSS online:

F1 ■ I P L | SEND

Refer to page 199 for more information on the 3745 IPL.

CDF Option Selection

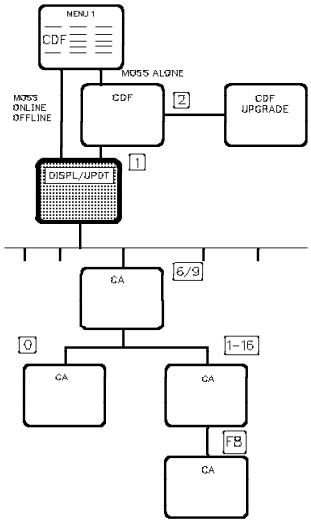
If the MOSS is Offline or Online

C D F SEND

If the MOSS is Alone

C D F SEND ■ 1 SEND

Models 130, 150, 160, 170




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE FUNCTION

 - SELECT ONE OPTION, THEN PRESS SEND  ==>

               DISPLAY                              DISPLAY/UPDATE

     1 = MOSS          5 = NOT USED              9  = CHANNEL ADAPTERS (CA)
     2 = LSSD          6 = CA FRU LEVELS         10 = LINE ADAPTERS (LA)
     3 = NOT USED      7 = LA/MUX FRU LEVELS     11 = PORTS
     4 = CCU           8 = LIC FRU LEVELS        12 = NOT USED


===>

F1:END             F3:ALARM                          F6:QUI
```

Models 210, 310, 410, 610

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                  CDF - DISPLAY/UPDATE FUNCTION

 - SELECT ONE OPTION (1 TO 9), THEN PRESS SEND        ==>

     DISPLAY :             DISPLAY/UPDATE :

     1 = MOSS              6 = CHANNEL ADAPTERS (CA)
     2 = LSSD              7 = LINE ADAPTERS (LA)
     3 = FRAMES            8 = PORTS
     4 = CCU               9 = CCU OPERATING MODE
     5 = SWITCH


===>

F1:END            F3:ALARM                     F6:QUIT
```

Models 17A, 21A, 31A, 41A, and 61A

.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                 CDF - DISPLAY/UPDATE FUNCTION

 - SELECT ONE OPTION (1 TO 9), THEN PRESS SEND        ==>

     DISPLAY :            DISPLAY/UPDATE :

     0 = 3746-900         6 = CHANNEL ADAPTERS (CA)
     1 = MOSS             7 = LINE ADAPTERS (LA)
     2 = LSSD             8 = PORTS
     3 = FRAMES           9 = CCU OPERATING MODE
     4 = CCU
     5 = SWITCH

===>

F1:END                                          F6:QUIT
```

Note: Option 0: 3746-900 only applies if it is installed.

Models 130, 150, 160 and 170

From the option screen, select the required option and go to the appropriate page.

```
 1 - MOSS                                    (Display)         page 19
 2 - LSSD                                    (Display)         page 20
 4 - CCU                                     (Display)         page 23
 6 - CA FRU LEVEL                            (Display)         page 26
 7 - LA/MUX FRU LEVEL                        (Display)         page 27
 8 - LIC FRU LEVEL                           (Display)         page 28
 9 - CHANNEL ADAPTERS (CA)                   (Display/Update)  page 29
10 - LINE ADAPTERS (LA)  - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 41
11 - PORTS               - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 57
```

Models 210, 310, 410 and 610

From the option screen, select the required option and go to the appropriate page.

```
 1 - MOSS                                    (Display)         page 19
 2 - LSSD                                    (Display)         page 20
 3 - FRAMES                                  (Display)         page 21
 4 - CCU                                     (Display)         page 23
 5 - SWITCH                                  (Display)         page 25
 6 - CHANNEL ADAPTERS (CA)                   (Display/Update)  page 29
 7 - LINE ADAPTERS (LA)  - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 41
 8 - PORTS               - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 57
 9 - CCU OPERATING MODE                      (Display/Update)  page 66
```

Models 17A, 21A, 31A, 41A and 61A

From the option screen, select the required option and go to the appropriate page.

```
 0 - 3746-900                                (Display)         page 18
 1 - MOSS                                    (Display)         page 19
 2 - LSSD                                    (Display)         page 20
 3 - FRAMES                                  (Display)         page 21
 4 - CCU                                     (Display)         page 23
 5 - SWITCH                                  (Display)         page 25
 6 - CHANNEL ADAPTERS (CA)                   (Display/Update)  page 29
 7 - LINE ADAPTERS (LA)  - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 41
 8 - PORTS               - TSS/HPTSS/TRSS/ESS - (Display/Update)  page 57
 9 - CCU OPERATING MODE                      (Display/Update)  page 66
```

Displaying 3746-900 Information

C D F SEND . 0 SEND

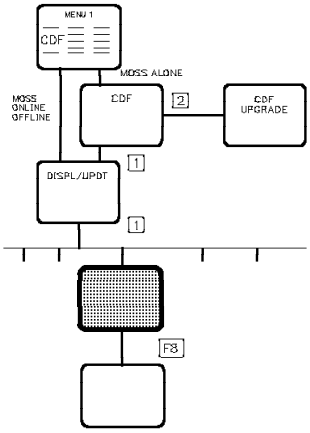
If the MOSS is Alone

C D F SEND . 0 SEND . 1 SEND

Models 17A, 21A, 31A, 41A, and 61A

.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : 3746-900


LOCATION         :  FRAME 7                LINE NUMBERING > 2048


                    CBC A      CBC B

PRESENCE         :    -          -        (Y : PRESENT , N : NOT PRESENT )
CCU              :    -          -


===>

F1:END                                       F6:QUIT
```



The screen DISPLAY 3746-900 shows:

- The frame number of the 3746-900 is 7.
- PRESENT or NOT PRESENT for each coupler (sensed data)
- 3746-900 line numbering (constant >2048)
- CCU attachment (coupler associated with CCU):
  - When the attachement is normal a dash (-) is displayed
  - Otherwise, an 'A' or 'B' is displayed.

Displaying the MOSS

If the MOSS is Offline or Online

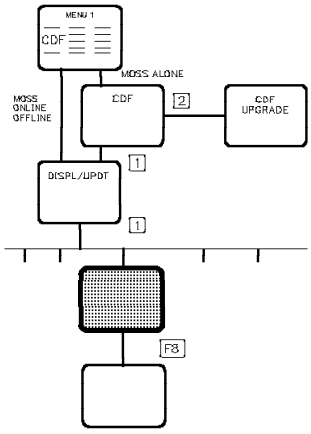
C D F [SEND] . 1 [SEND]

If the MOSS is Alone

C D F [SEND] . 1 [SEND] . 1 [SEND]

Models 130, 150, 160, 170, 17A

.




```
 ------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : MOSS

STORAGE SIZE : XXXX K     DISKETTE SIZE   : XX  MB     DISK SIZE  : XX  MB

PS ID        :  1         MOSS MICROCODE EC LEVEL : XXXXXXXXXXXXXXXX
                          MCF LEVEL               : XXXXXXXXXXXXXXXX

                          FRU-LEVEL

MCC       :  XX        MSC    :  XX       PCC            :  XX
DFA       :  XX                           PCC MICROCODE  :  XX


===>

F1:END            F3:ALARM                        F6:QUIT
```

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

.

```
 ------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : MOSS

STORAGE SIZE : XXXX K     DISKETTE SIZE   : XX  MB     DISK SIZE  : XX  MB

PS ID        :  1         MOSS MICROCODE EC LEVEL : XXXXXXXXXXXXXXXX
                          MCF LEVEL               : XXXXXXXXXXXXXXXX

                          FRU-LEVEL

MCA       :  XX        MSC    :  XX       PLC            :  XX
DFA       :  X                            PAC            :  XX
MAC       :  XXX                          PLC MICROCODE  :  XX

===>

F1:END            F3:ALARM                        F6:QUIT
```

DISKETTE SIZE	Diskette drive size (MB)
DISK SIZE	Hard disk size (MB)
DFA	Disk file adapter card
MAC	MOSS adapter card

MCA	MOSS console adapter card (Models 210, 310, 410, and 610)
MLA	MOSS LAN adapter card (Models 21A, 31A, 41A, and 61A)
MCC	MOSS control card
MCF LEVEL	Latest installed MCF
MOSS MICROCODE EC LEVEL	Driver microcode EC level
MSC	MOSS storage card
PAC	Power analog card
PCC	Power control card
PCC MICROCODE	Power control card software level
PLC MICROCODE	Power logic card software level
PS ID	Power supply identifier (1-41)
STORAGE SIZE	MOSS memory (K bytes).

Displaying LSSD Information

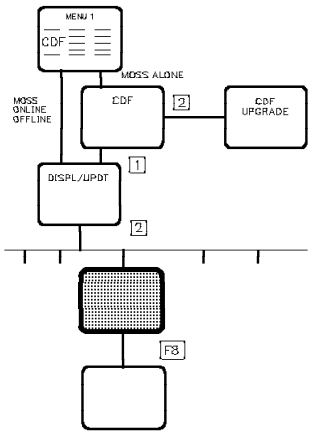
The level sensitive scan design (LSSD) information is used by the IBM service representative only.

If the MOSS is Offline or Online

C D F SEND . 2 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 2 SEND




```
 ------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : LSSD

     00    03 04    07 08    0B 0C    0F 10    13 14    17 18    1B 1C    1F
0000 011F0600 C0080000 00000000 00003FFF 91FE0000 00000100 00000048 02C00804
0020 A1000002 1302FFFF FFFFFFFF 1DFFF8FF 7FFFF77F DDBE083D A4C00316 0723FC07
0040 1A000040 000000A0 07FE0000 40E200E0 00000000 04190700 08000000 00000000
0060 00003FF0 00040001 03000000 94000009 40051307 0C000000 00000060 00000000
0080 00030000 00000000 060B028F F000047F 800023FC 00000007 13070C00 00000000
00A0 00600000 00000003 00000000 0000080B 028FF000 047F8000 23FC0000 40091A07
00C0 0C000000 00000060 001FFFFF FFC30000 00000000 0001A000 0000000A 0B028FF0
00E0 00040077 FFE3FC00 00000B0F 00000000 FF1FF002 FF1FF002 FF1FF002 0C0C 0200


===>

F1:END           F3:ALARM                       F6:QUIT          F8:FWD
```

Displaying Frames

This function is only for the following frames:

- 3745 Models 210, 310, 410, and 610
- 3745 Models 21A, 31A, 41A, and 61A
- 3746 Models A11 and A12.

If the MOSS is Offline or Online

C D F SEND . 3 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 3 SEND

The following screens will be displayed in this sequence:

3745 line adapter board 1 (LAB-BOARD 1)

3745 channel adapter board 1 (CAB-BOARD 1)

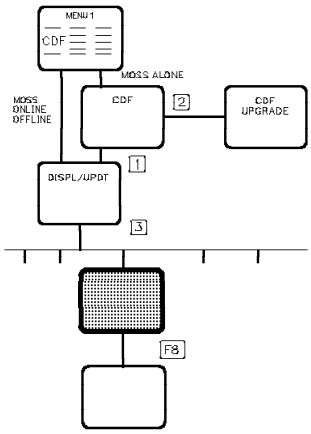
3746-A11 line adapter board 2 (LAB-BOARD 2)

3746-A11 line adapter board 3 (LAB-BOARD 3)

3746-A11 channel adapter board 2 (CAB-BOARD 2)

3746-A12 line adapter board 4 (LAB-BOARD 4).

Up to eight line adapters can be installed on each line adapter board.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : FRAMES

3745 : LAB-BOARD 1
                                                        LIC  INSTALLED
NUMBER  TYPE  ADDRESS  PRESENCE  GROUP 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
LA 1   TRSS     4800      Y        1
LA 2   TRSS     4802      Y        1
LA 3   TSS      11        Y        2   Y Y Y Y Y Y Y Y Y  Y  Y  Y  Y  Y  Y  Y
LA 4   TSS      21        Y        2
LA 5   TRSS     C800      Y        1
LA 6   TRSS     C802      Y        1
LA 7   HPTSS    91        Y        2
LA 8   ESS      A1        Y        2
===>

 F1:END            F3:ALARM              F6:QUIT              F8:FWD
```

From the above screen:

Press F8 to display the 3745 channel adapter board 1 screen.

ADDRESS Physical address of the LA on the IOC BUS.

GROUP Identifies a pair of line adapters (from 1 to 8).

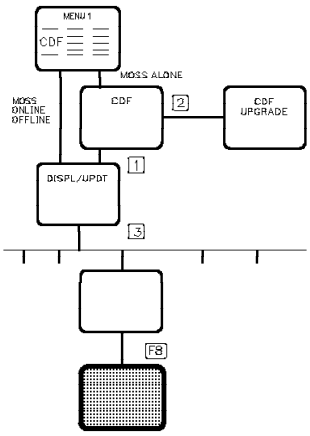
LIC INSTALLED
Y (yes) or N (no), and is valid only for TSS. LICs may be installed in any of the 3745 frames.

NUMBER Identifies the line adapter number.

PRESENCE Y (yes) or N (no), depending upon whether the line adapter is installed or not.

TYPE may be:

- **ESS** (Ethernet subsystem): 1-byte address. The Ethernet subsystem includes up to 8 Ethernet line adapters (ELAs). One ELA is composed of a communication scanner processor (CSP) and an Ethernet adapter card (EAC), and is a line adapter for lines operating at up to 10 million bps.
- **TSS** (transmission subsystem): 1-byte address. The transmission subsystem includes up to 32 low-speed scanners (LSSs) or line adapters (LAs). One LSS is composed of a communication scanner processor (CSP) and a front-end low-speed scanner (FESL), and is a line adapter for lines operating at up to 256 kbps.
- **HPTSS** (high-performance transmission subsystem): 1-byte address. The high-performance transmission subsystem includes up to eight high-speed scanners (HSSs) or line adapters (LAs). One HSS is composed of a communication scanner processor (CSP) and a front-end high-speed scanner (FESH), and is a line adapter for lines operating at up to 2 million bps.
- **TRSS** (token-ring subsystem): 2-byte address. The token-ring subsystem includes up to four token-ring adapters (TRAs).
- **CADS** (channel adapter with data streaming): Refer to page 30.
- **BCCA** (buffer chaining channel adapter): Refer to page 30.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : FRAMES

3745 : CAB-BOARD 1

NUMBER  TYPE   ADDRESS   PRESENCE   GROUP
CA 1 A  CADS    8800        Y         1
CA 2 A  CADS    8802        N         1
CA 3 A  BCCA    8804        Y         2
CA 4 A  BCCA    8806        Y         2
CA 5 A  ----    0800        N         -
CA 6 A  ----    0802        N         -
CA 7 A  ----    0804        N         -
CA 8 A  ----    0806        N         -
===>

F1:END            F3:ALARM                      F6:QUIT     F7:BWD   F8:FWD
```

From the above screen:

- Press F3 to display the next alarm, if any, or clear the displayed alarm, if none are waiting.
- Press F6 to return to the CDF Display/Update screen.
- Press F7 to display the previous screen.
- Press F8 to display the next screen.

Displaying CCU Information

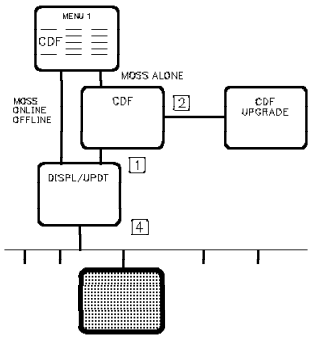
If the MOSS is Offline or Online

C D F SEND . 4 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 4 SEND

Models 130, 150, 160, 170, 17A




```
------------------------------------------------------------------ mm/dd/yy hh:mm
   FUNCTION ON SCREEN: CONFIG DATA FILE
                       CDF - DISPLAY : CCU

           CCU-A

    PRESENCE          :  X
    PS ID             :  X
    STORAGE SIZE      :  X MB
    PUC FRU LEVEL     :  XX
    SCTL FRU LEVEL    :  XX



===>

F1:END            F3:ALARM                        F6:QUIT
```

PRESENCE Y (yes) or N (no) depending on whether the CCU is present.

PS ID Power supply identifier (see POS function).

STORAGE SIZE 4MB or 8MB (1 MB equals 1 048 576 bytes).

PUC FRU LEVEL Used by the service representative.

SCTL FRU LEVEL Used by the service representative.

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : CCU

           CCU-A                              CCU-B

PRESENCE          :  X              PRESENCE          :  X
PS ID             :  X              PS ID             :  X
STORAGE SIZE      :  X MB           STORAGE SIZE      :  X MB
CCU FRU LEVEL     :  XX             CCU FRU LEVEL     :  XX
SCTL FRU LEVEL    :  XX             SCTL FRU LEVEL    :  XX
CCU TYPE          :  XXX            CCU TYPE          :  XXX



===>

F1:END            F3:ALARM                        F6:QUIT
```

The next screen **may** be displayed **if an error is detected while upgrading the CDF** after a CCU replacement.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : CCU

           CCU-A                              CCU-B

PRESENCE          :  X
PS ID             :  X              PS ID             :  ?
STORAGE SIZE      :  X MB           STORAGE SIZE      :  ? MB
CCU FRU LEVEL     :  XX             CCU FRU LEVEL     :  ??
SCTL FRU LEVEL    :  XX             SCTL FRU LEVEL    :  ??
CCU TYPE          :  XXX            CCU TYPE          :  ???



===> DATA WITH ? IS NOT AVAILABLE. CALL SERVICE PERSONAL TO RUN CCU DIAGS

F1:END            F3:ALARM                        F6:QUIT
```

Note: For Models 210, 21A, 310, and 31A there is no CCU-B information displayed.

PRESENCE Y (yes) or N (no) depending on whether the CCU is present.

PS ID Power supply identifier (see POS function).

STORAGE SIZE 4MB or 8MB (1 MB equals 1 048 576 bytes). 16 Mb is available on Models 31A and 61A.

CCU FRU LEVEL Used by the service representative.

SCTL FRU LEVEL Used by the service representative.

CCU TYPE May be one of the following:

TCM Thermally-controlled module

PUC Processor unit card.

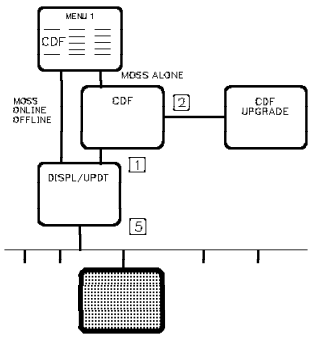
Displaying Switch Information

If the MOSS is Offline or Online

C D F SEND . 5 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 5 SEND




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : SWITCH

           SWITCH A                          SWITCH B

PRESENCE            :  X          PRESENCE            :  X
PS ID               :  X          PS ID               :  X
IOSW1 ADDRESS       :  XX         IOSW1 ADDRESS       :  XX
IOSW2 ADDRESS       :  XX         IOSW2 ADDRESS       :  XX
DMA PRESENCE        :  X          DMA PRESENCE        :  X
IOSW FRU LEVEL      :  XX         IOSW FRU LEVEL      :  XX
DMSW FRU LEVEL      :  XX         DMSW FRU LEVEL      :  XX


===>

F1:END           F3:ALARM                       F6:QUIT
```

Note: For models 130, 150, 160, 170, 17A , 210, 21A, 310 and 31A there is no SWITCH B information displayed.

PRESENCE	Y to indicate that the CCU is present.
PS ID	Power supply identifier (see POS function).
IOSW1 ADDRESS	Only used by service representative.
IOSW2 ADDRESS	Only used by service representative.
DMA PRESENCE	Y to indicate the direct memory access is present.
IOSW FRU LEVEL	Only used by service representative.
DMSW FRU LEVEL	Only used by service representative.

Displaying Channel Adapter FRU Level (Models 130, 170, and 17A)

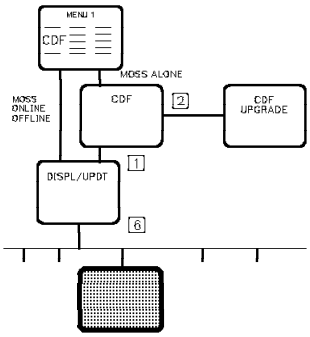
Note: The FRU level information is mainly used by the service representative.

If the MOSS is Offline or Online

C D F SEND . 6 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 6 SEND




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : CHANNEL ADAPTERS FRU LEVEL

  CA NUMBER       1     2     3     4     5     6     7     8
  CAL             ----  ----  ----  ----  xxxx  xxxx  xxxx  xxxx
  CADR-A          -     -     -     -     x     x     x     x
  CADR-B          -     -     -     -     x     x     x     x
  MICROCODE       --    --    --    --    xx    xx    xx    xx


  CA NUMBER       9     10    11    12    13    14    15    16
  CAL             ----  ----  ----  ----  ----  ----  ----  ----
  CADR-A          -     -     -     -     -     -     -     -
  CADR-B          -     -     -     -     -     -     -     -
  MICROCODE       --    --    --    --    --    --    --    --

===>

F1:END            F3:ALARM                    F6:QUIT
```

CAL Channel adapter logic card

CADR Channel adapter driver receiver card.

Displaying Line Adapter and MUX FRU Level (Models 130, 150, 160, 170, and 17A)

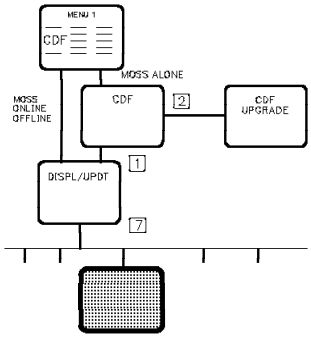
Note: The FRU level information is mainly used by the service representative.

If the MOSS is Offline or Online

C D F [SEND] . 7 [SEND]

If the MOSS is Alone

C D F [SEND] . 1 [SEND] . 7 [SEND]




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                CDF - DISPLAY : LINE ADAPTERS AND MUX FRU LEVEL
 LA          0                 1                 2                 3
             1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2
 CSC/CSP     x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x
 FESH        x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x

             0                 1                 2                 3
 MUX NUMBER  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0
 DMUX        x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x
 SMUX        x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x x
             3                 4                 5
 MUX NUMBER  1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
 DMUX        x x x x x x x x x x x x x x x x x x x x x x x x x x x x
 SMUX        x x x x x x x x x x x x x x x x x x x x x x x x x x x x

===>

F1:END           F3:ALARM                        F6:QUIT
```

CSC/CSP Communication scanner processor

FESH Front-end scanner (high-speed)

MUX Multiplex function

DMUX Double multiplex card for board on LIC 1

SMUX Single multiplex card for board on LIC 2.

Displaying LIC FRU Level (Models 130, 150, 160, 170, and 17A)

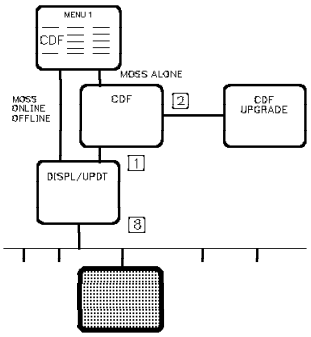
If the MOSS is Offline or Online

C D F [SEND] ■ 8 [SEND]

If the MOSS is Alone

C D F [SEND] ■ 1 [SEND] ■ 8 [SEND]

You cannot update the level of the LIC FRU.




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : LIC TYPE (1 TO 4) AND FRU LEVELS
 LIC NUMBER IN HUNDREDS (H), TENS (T), AND UNITS:
     HT         00  01  02  03  04  05  06  07  08  09  10  11  12
              0  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  ▲   xy
              1  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
              2  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
              3  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
     UNITS    4  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
              5  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
              6  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy      xy
              7  ◄-------------------------------------------     43 xy
              8  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy
              9  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy  xy

===>
F1:END            F3:ALARM              F6:QUIT           F8:FWD
```

How to Read the Above Screen

x is the LIC type, y is the FRU level.

Example:

- **43** applies to LIC 117 (read **11** on line of hundreds (HT) and **7** in column of units).
  The first digit is the LIC type: In the example 43, it is LIC type 4.
  The second digit is the FRU level: In the example 43, it is FRU level 3.
- The FRU level information is mainly used by the service representative.

To terminate the function, press F1.

Channel Adapters Selection (Displaying/Updating)

Models 130, 170, 17A

If the MOSS is Offline or Online

C D F SEND . 9 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 9 SEND

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

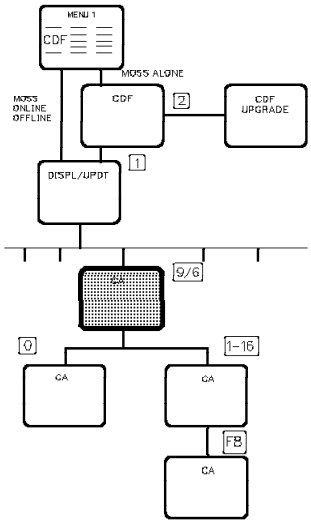
If the MOSS is Offline or Online

C D F SEND . 6 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 6 SEND

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE : CHANNEL ADAPTERS (CA)

             1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16
 PRESENCE:   Y   N   Y   Y   Y   N   N   N   Y   Y   Y   N   N   N   Y   Y
 NUMBER  :  1A  1B  3A  4A  5A  5B  7A  8A  9A 10A 11A 11B 13A 14A 15A 16A
 TYPE *  :  6       7   6   7               7   6   6               7   6

 * CHANNEL ADAPTER TYPE : 6=CADS, 7=BCCA

 - SELECT ONE OPTION (0 TO 16), THEN PRESS SEND   ==>

               0  = TO DISPLAY ALL CA
         1 TO 16  = TO DISPLAY/UPDATE ONE CA
===>

F1:END            F3:ALARM                        F6:QUIT
```

From the above screen:

- Select option 0 to display all channel adapters (see screen on page 32).
- Select options 1 to 16 to display channel adapters numbered 1 through 16 (see screen on page 35).

NUMBER Channel adapter number followed by the interface identifier A or B. The channel adapter number defines the physical position (refer to table on page 34 to see the relation between physical and logical addresses of CAs).

PRESENCE Indicates whether the CA is present or not (Y = Yes and N = No).

TYPE Two types of channel adapter exist:

6 = CADS Channel adapter with data streaming:

- Allows a high-speed data rate for a host located up to 122 meters (400 feet) from the controller. Data can be transferred in synchronous mode at an average rate of 2 million bytes per second.
- Supports PEP, therefore ESC addresses (emulation sub-channel addresses).

7 = BCCA Buffer chaining channel adapter:

- BCCA is a new type of channel adapter with improved performance capability.

  Improved performance is obtained when the BCCA operates in "buffer chaining" mode.

  It handles chains of NCP buffers (provided that the parameter
  'CA = type 7' is defined for this CA in the NCP 'LINE' macro definition).
- A BCCA supports the same features as a CADS.
- A BCCA allows a high-speed data rate for a host located up to 122 meters (400 feet) from the controller. Data can be transferred in synchronous mode at an average rate of 2 million bytes per second.
- Make sure that you have the right NCP level.

  Only NCP V5R3.1 and later can run the BCCA in "buffer chaining" mode.

  With older Control Programs, the BCCA works as a CADS for NSC traffic.

  The BCCA does not support ESC traffic.

  Before the service representative adds a channel adapter type seven (BCCA), check that the control program level, the BCCA working mode, and the sub-channel addresses (NSC/ESC) are compatible.
  Refer to the following tables:
  Table 3 on page 31 for NCP
  Table 4 on page 31 for PEP.

CA updates implementation

Remember, even if the MOSS console shows that the changes have been made, the CA characteristic changes will only be effective either:

- At the next power off/power on of the 3745
  or
- After a general IPL from the control panel of the 3745.

You can also call the service representative to initialize channel adapters.

Table 3. Supported Channel Adapter Types versus NCP Levels

NCP Levels	Installed Channel Adapter Types		
	CADS	BCCA	
		Non-Buffer Chaining Mode	Buffer Chaining Mode
NCP (Without EP) V5R1 to V5R3 inclusive	Yes	Yes	No
NCP (Without EP) V5R3.1 and later	Yes	Yes	Yes

Table 4. Supported CA Types and NSC/ESC Addresses versus PEP/NCP Levels

NCP/PEP Levels	Installed Channel Adapter Types					
	CADS		BCCA			
			Non-Buffer Chaining Mode		Buffer Chaining Mode	
	NSC	ESC	NSC	ESC	NSC	ESC
PEP (NCP + EP) NCP V5R1 to V5R3 inclusive	Yes	Yes	Yes	No	No	
PEP (NCP + EP) NCP V5R3.1 and later	Yes	Yes	Yes	No	Yes	No

Displaying All Channel Adapters

Models 130, 170, 17A

If the MOSS is Offline or Online

C D F SEND . 9 SEND . 0 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 9 SEND . 0 SEND

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

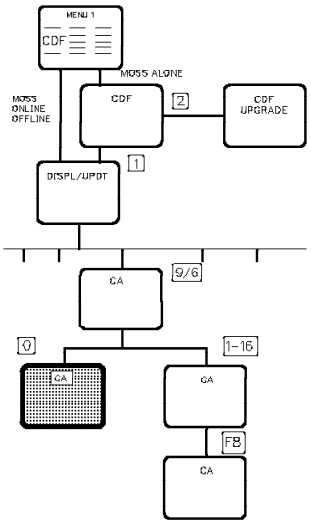
If the MOSS is Offline or Online

C D F SEND . 6 SEND . 0 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 6 SEND . 0 SEND

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                  CDF - DISPLAY : CHANNEL ADAPTERS (1-8)

  NUMBER  TYPE  ADDRESS  PRESENCE  PS    TPS  FRAME  NSC  ESCL  ESCH
                                     ID
    1 A   CADS    8800       Y      4     Y     BF     0     0     0
    1 B                      N      4                  0     0     0
    3 A   BCCA    8804       Y      5     N     BF     5
    4 A   CADS    8806       Y      5     N     BF     0     0     0
    5 A   ----    0800       N      6     N     --     0     0     0
    6 A   ----    0802       N      6     N     --     0     0     0
    7 A   ----    0804       N      7     N     --     0     0     0
    8 A   ----    0806       N      7     N     --     0     0     0

===>

F1:END           F3:ALARM                    F6:QUIT              F8:FWD
```

(Blank or ---) means not applicable. **Y** means yes. **N** means no.

From the above screen:

- You cannot update displayed characteristics.
  In order to display or update the characteristics of a specific channel adapter, you must press F6 to return to the screen of the page 29, enter its CA number then go to page 35.
- Press F8 to display channel adapters numbered 9 through 16 (for models 210, 310, 410, and 610).

NUMBER Channel adapter number followed by the interface identifier A or B. The channel adapter number defines the physical position (refer to table on page 34 to see the relation between physical and logical addresses of CAs).

TYPE CADS or BCCA.

ADDRESS Physical address of the CA on the IOC BUS.

PRESENCE Indicates whether the CA is present or not (Y = Yes and N = No).

PS ID For Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A this is the associated power supply identifier, see POS function.

TPS Y (yes) or N (no), depending on whether a two-processor switch is installed. Interfaces A and B (below 'NUMBER') may be connected either to the same host or to two different hosts.

FRAME For Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A:

- BF for the 3745 base frame
- L13, L14, or L15 for the corresponding 3746 unit number.

NSC Native sub-channel address. Any value from 0 through FF can be assigned to the NSC device address. If a TPS is installed on a channel, the two NSC interfaces (A and B) are assigned separately.

ESCL (Not used for BCCA)
Lowest emulation sub-channel address. This field is left blank if the selected CA is of the type BCCA.

ESCH (Not used for BCCA)
Highest emulation sub-channel address. This field is left blank if the selected CA is of the type BCCA.

Table 5. 3745 Channel Adapter Logical and Physical Addresses

Physical Address (PA)	Logical Address (LA)	
	Models 130, 170, 17A	Models 210, 310, 410, 610 Models 21A, 31A, 41A, 61A
1		8
2		9
3		10
4		11
5	0	0
6	1	1
7	2	2
8	3	3
9		12
10		13
11		14
12		15
13		4
14		5
15		6
16		7

Displaying or Updating One Channel Adapter

Models 130, 170, 17A

If the MOSS is Offline or Online

C D F [SEND] ■ 9 [SEND] ■ X [SEND]

x = CA number

If the MOSS is Alone

C D F [SEND] ■ 1 [SEND] ■ 9 [SEND] ■ X [SEND]

x = CA number

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F [SEND] ■ 6 [SEND] ■ X [SEND]

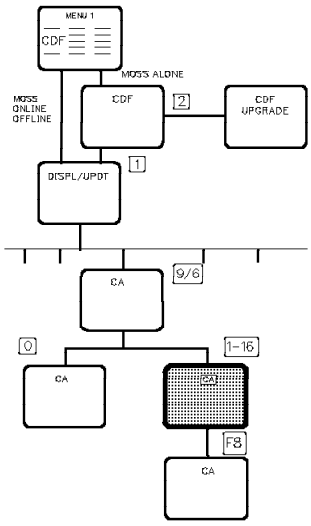
x = CA number

If the MOSS is Alone

C D F [SEND] ■ 1 [SEND] ■ 6 [SEND] ■ X [SEND]

x = CA number

.




```
CUSTOMER ID: xxxxxxxxxxxxxxxx          3745-x1x         SERIAL NUMBER: nnnnnnn

------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY/UPDATE : CA  5

 SWITCH : -        CAB   : -        PS ID  : -             ADDR : 0800
 IOC    : 1        GROUP : 1        CCU    : A             TYPE : CADS


         I/O ERROR ALERT (Y OR N)                  :   Y

         TWO-PROCESSOR SWITCH MODE (TPS OR TCS)    :   TPS    A


===>
F1:END           F3:ALARM  F5:UPDATE  F6:QUIT  F7:PREVIOUS CA  F8:FWD
```

--- means not applicable. **Y** means yes. **N** means no.

From the above screen:

- Press F5 to modify the I/O ERROR ALERT and the TWO-PROCESSOR SWITCH fields. Line **A** is displayed only if a TPS is installed.
  After alteration, you must press F8 to update additional CA information. See screen on page 38.
- Press F8 to display or update more CA information. See screen on page 38.
- The message: **CA NOT INSTALLED** is displayed and the display of **F5:UPDATE** is suppressed when the selected CA is not installed.

Note: Before the service representative adds a channel adapter type seven (BCCA), check that the control program level, the BCCA working mode, and the sub-channel addresses (NSC/ESC) are compatible.
Refer to the following tables:
Table 3 on page 31 for NCP
Table 4 on page 31 for PEP.
When adding a BCCA, the following warning is displayed:
WARNING: CA TYPE 7 (BCCA) DOES NOT SUPPORT ESC ADDRESSES. CHECK COMPATIBILITY BETWEEN CTRL PROGRAM GENERATION AND ESC ADDRESSES.

CAB Indicates the channel adapter board number.

CCU For Models 410, 41A, 610, and 61A: A or B to indicate the CCU to which the CA is connected.

IOC Indicates the input/output controller number (1 or 2).

SWITCH Used by the service representative only.
(A for CCU=A and B for CCU=B.)

TYPE CADS or BCCA.

GROUP Address of a pair of CA.

ADDR Address of the CA on the IOC BUS.

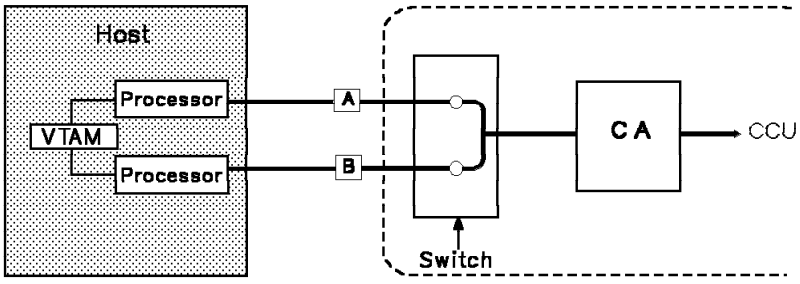
I/O ERROR ALERT
Allows the channel to detect a channel adapter malfunction and generates an alert. It is available on all IBM hosts supporting the 3745. If not available on a non-IBM host, enter N on the screen. To do so, the MOSS must be alone and the channel interface not enabled.

If the interfaces are connected to two different hosts, I/O ERROR ALERT can be set to Yes only if both hosts support the I/O ERROR ALERT feature.

TWO PROCESSOR SWITCH
Is displayed only for a CA with TPS.

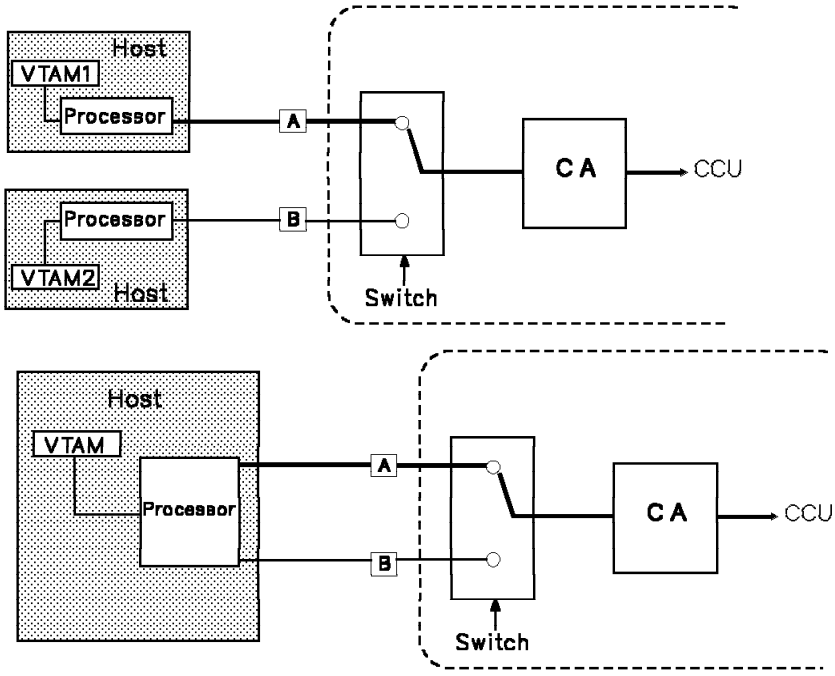
When you have a TPS installed, you can use one of these modes:

- **TPS mode**



Interfaces A and B are connected to two different channels of the same host (but different processors).
These interfaces **can** work (be enabled) at the same time.

- **TCS mode**



  Interfaces A and B are connected to channels of two different hosts/processors or to two channels of a unique host/processor. These interfaces **cannot** work (be enabled) at the same time.

- TPS and TCS modes cannot be used at the same time.

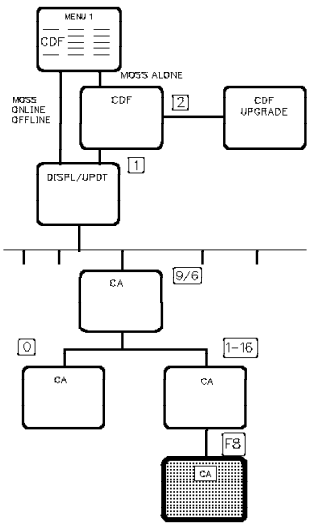
Displaying or Updating Additional CA Information

If you pressed F8 from the preceding screen, the next screen is displayed.

Information on interface B is displayed if a TPS is installed (**B** on next screen).

When using TPS feature, the burst length must be specified for both the A and B interfaces on the channel adapter.

.




```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                      CDF - DISPLAY : CA 5
                                                              B
                                      INTERFACE A          INTERFACE B

 CHANNEL BURST LENGTH (4 TO 254)          :  16                :  16
 CHANNEL PRIORITY (L=LOW,H=HIGH)          :  L                 :  L
 NSC ADDRESS (00 TO FF)                   :  40                :  41
 DATA STREAMING (Y=YES,N=NO)              :  N                 :  N
 HIGH SPEED DATA TRANSFER (Y=YES,N=NO)    :  N                 :  N
 BYTE MULTIPLEXER CHANNEL (Y=YES,N=NO)    :  N                 :  N
 DATA STREAMING SPEED  (1 TO 3)           :                    :
  (1=1MB,  2=2MB,  3=3MB)
 ESC ADDRESS RANGE (00 TO FF)  A          :     -              :
===>

F1:END         F3:ALARM     F5:UPDATE   F6:QUIT   F7:BWD   F8:NEXT CA
```

From the above screen:

- Press F5 to update the displayed information.
  Read the displayed information carefully and the restrictions shown in Table 6 on page 39 before updating.
- Do not forget to press SEND once the information is updated. The line **A** is displayed only if the selected CA is of the type CADS.

CA updates implementation

Remember, even if the MOSS console shows that the changes have been made, the CA characteristic changes will only be effective either:

- At the next 3745 power off/power on of the 3745
- After a general IPL from the control panel of the 3745.

You can also call the service representative to initialize channel adapters.

CHANNEL PRIORITY

Priority to be given to the CA among the other units attached to the channel. For NCP, enter H for CAs with the most traffic and L for the other CAs. For PEP, enter H.

NSC ADDRESS

Address of the native sub-channel for the NCP or PEP.

ESC ADDRESS RANGE (CADS only)

Address range of the emulation sub-channel for the PEP when ESC is used. Enter two hexadecimal numbers from 00 through FF. Read the "Restrictions" in Table 6 on page 39.

DATA STREAMING

Feature on a host for block multiplexer or selector channels. Read the "Restrictions" in Table 6 on page 39.

Enter N when the 3745 is connected to an IBM 43xx, 308x, or 3033, or when an IBM 3044 is used as channel extender. Read the "Restrictions" in Table 6.

DATA STREAMING SPEED

Select a speed according to the host channel speed. For a:

- 1-MB channel, enter 1
- 2-MB channel, enter 2
- 3-MB or 4.5-MB channel, enter 3 (this is the recommended option).

Note: These values are the host channel speeds, not the actual transfer rates which are much lower. The 3745 may also be connected to a 4.5-MB channel attachment though it operates at its own speed.

Read the "Restrictions" in Table 6.

BYTE MULTIPLEXER CHANNEL

Enter Y or N according to the channel type used. Read the "Restrictions" in Table 6.

Table 6. Restrictions for Updating of CA Information

If this is displayed:	**You must enter:**
DATA STREAMING ==> Y	HIGH SPEED DATA TRANSFER ==> **N** BYTE MULTIPLEXER CHANNEL ==> **N** DATA STREAMING SPEED ==> **1, 2,** or **3**
BYTE MULTIPLEXER CHANNEL ==> N	ESC ADDRESS RANGE leave blank
DATA STREAMING ==> N	DATA STREAMING SPEED leave blank
TWO-PROCESSOR SWITCH MODE ==> TPS (on preceding screen)	ESC ADDRESS RANGE leave blank

HIGH SPEED DATA TRANSFER

Basic feature installed on a host channel according to Table 7.

Table 7. High Speed Data Transfer feature

IBM Host	**Byte Multiplexer Channel**	**Block Multiplexer Channel**	**Selector Channel**
3033	No	Yes	Yes
308x, 309x, 4361, 4381, ES/9000*	Yes	Yes	No
IBM 4341	Yes	Yes	Yes
IBM 937x	No	Yes	No

CHANNEL BURST LENGTH

Length of the burst which can be transferred between the CA and the host. It is an even number from 4 to 254.

- For a block multiplexer or selector channel the recommended values are:
  - 64 for a channel adapter of type CADS
  - 254 for a channel adapter of type BCCA.

  These values allow better channel adapter throughput.

- For a byte multiplexer channel, check the host byte transfer rate and select the burst length accordingly.

  The recommended values are:
  - With buffered devices on the byte multiplexer channel: 254 for NCP and 64 for PEP.
    Choose the value 254 to optimize the data transfer over the channel. It reduces the number of channel connections and disconnections.
    Choose the value 64 for a better channel adapter throughput. Based on performance tests, it seems that in most cases, 64 is preferable. It allows a better overlap between the data transfer on the channel interface (3745 to/from host) and the data transfer on IOC buses (channel adapter to/from CCU).
  - With unbuffered devices on the byte multiplexer channel:
    - 32 for the IBM 3033, 308x, 309x and ES/9000
    - 16 for the IBM 4341 and 4381
    - 8 for the IBM 4361.

Displaying or Updating All Line Adapters

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND . 1 0 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 1 0 SEND

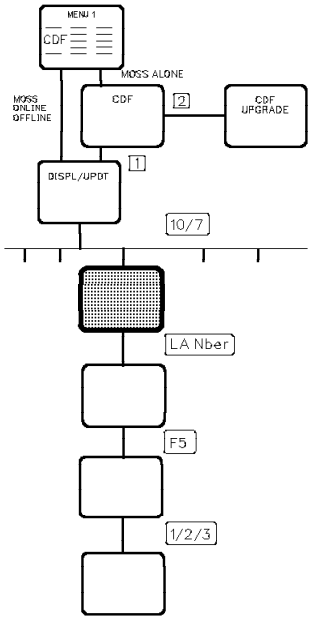
Models 210, 310, 410, 610 21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND . 7 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 7 SEND




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
         CDF - DISPLAY/UPDATE : LINE ADAPTERS

NUMBER    1   2   3   4   5   6   7   8   9   10  11  12  13  14  15  16
PRESENCE  Y   N   Y   N   N   N   N   N   Y   Y   N   N   N   N   N   N
LA TYPE*  3   -   5   5   -   -   -   -   1   1   -   -   -   -   -   -

NUMBER    17  18  19  20  21  22  23  24  25  26  27  28  29  30  31  32
PRESENCE  N   N   N   N   N   N   N   N   N   N   N   N   N   N   N   N
LA TYPE*  -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -

 * LA TYPE MEANING : 1=TSS , 2=HPTSS , 3=TRSS , 4=RSRVD , 6=ESS

 - TO DISPLAY/UPDATE LA, SELECT ITS NUMBER (1-32), THEN PRESS SEND  ==>
===>

F1:END            F3:ALARM                       F6:QUIT
```

From the above screen:

- Display more information on an LA.
  The screen displayed depends upon the type of line adapter:
  - To display or update a TSS type line adapter, go to page 44.
  - To display or update a HPTSS type line adapter, go to page 49.
  - To display a TRSS type line adapter, go to page 54.
  - To display an ESS type line adapter, go to page 56.
- Update an LA after a LIC, HPTSS, or TSS cable change (see screens on pages 46 and 51).

To do so, enter the LA number; then press SEND.

NUMBER Line adapter number.

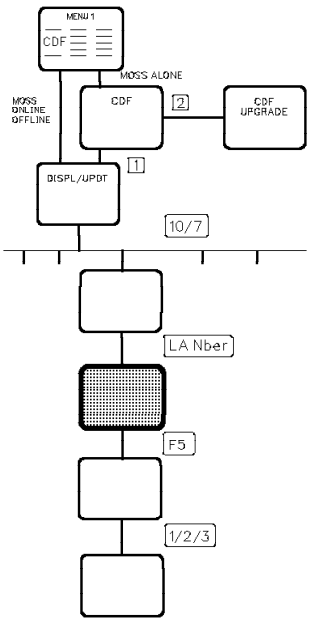
PRESENCE Indicates whether the LA is present (Y) or not (N).

LA TYPE TSS (low-speed scanner), TRSS (token-ring adapter), HPTSS (high-speed scanner), or ESS (Ethernet subsystem).

For Models 210, 21A, 310, 31A, 410, 41A, 610 and 61A, there can be 32 line adapters, which are installed as follows:

LA	Frame	LAB
1-8	3745	1
9-16	3746-A11	2
17-24	3746-A11	3
25-32	3746-A12	4

If you select a line adapter that is not installed, the following screen is displayed:




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                         CDF - DISPLAY : LA  5

 SWITCH : A        LAB   : 1   PS ID  : 10       ADDR : 90
 IOC    : 2        GROUP : 1   CCU    : A        TYPE : ----

                         LA NOT INSTALLED









===>

F1:END         F3:ALARM         F6:QUIT         F7:PREVIOUS LA   F8:NEXT LA
```

Note: Even though the adapter is not installed, the switch, IOC, LAB, group, PS ID, and address information are displayed.

SWITCH Used by the service representative only (A for CCU=A and B for CCU=B).

IOC Input/output controller number (1 or 2).

LAB Line adapter board number (1, 2, 3, or 4).

GROUP From 1 to 8.

PS ID Associated power supply identifier (see POS function).

CCU A or B to indicate the CCU to which the CA is connected.

TYPE TSS (low-speed scanner), TRSS (token-ring adapter), HPTSS (high-speed scanner) or ESS (Ethernet subsystem).

Displaying or Updating One TSS Line Adapter

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND

x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND

x = LA number

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND

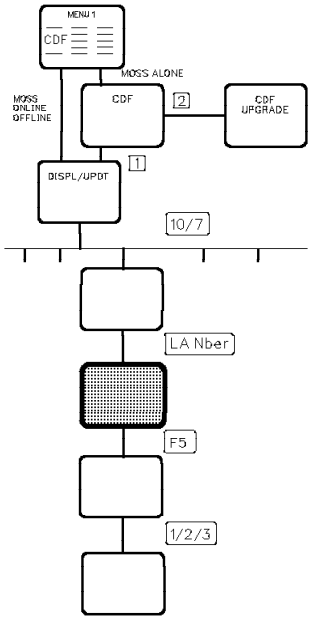
x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND

x = LA number

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : LA  9

 SWITCH : --    LAB   : --  PS ID  : --    ADDR : 12      MUX     : 1
 IOC    : 1     GROUP : 3   CCU    : A     TYPE : TSS     EXTEND  : YES


                                          CLOCK (C) AND CABLE INFO (I)
   LIC                                   PORT1   PORT2   PORT3   PORT4
 POSITION     PRESENCE  NUMBER   TYPE   C   I   C   I   C   I   C   I
    1           Y        1        1     3   5   2   4   3   5   2   4
    2           Y        2        1     3   5   2   4   3   5   2   4
    3           Y        3        1     3   5   2   4   3   5   2   4
    4           Y        4        1     3   5   2   4   3   5   -   -
===>

F1:END       F3:ALARM  F5:UPDATE  F6:QUIT  F7:PREVIOUS LA  F8:EXTEND
```

--- means not applicable. **Y** means yes. **N** means no.

From the above screen:

- Press F8:EXTEND or F8:MUX (if displayed) to display more information on this LA.
- Press F5 (if displayed) to update this LA after a LIC or TSS cable change and if the MOSS is ONLINE or OFFLINE and the adapter is operative (see page 46).
  You cannot update the characteristics displayed on this screen.
- Press F7 which has three possible meanings, depending on your configuration:
  - PREVIOUS LA - To display the previous line adapter.
  - MUX - To display LIC positions 5 to 8 (when EXTEND is YES).
  - BWD - To display LIC positions 1 to 4 and 13 to 16 (when EXTEND is YES).
- Press F8 which has three possible meanings, depending on your configuration:
  - NEXT LA - To display the next line adapter.
  - FWD - To display LIC positions 5 to 8 and 13 to 16 (when EXTEND is YES).
  - EXTEND - To display LIC positions 9 to 12 (when EXTEND is YES).

LAB Line adapter board number.

MUX Multiplex function number.

EXTEND If EXTEND = YES, the corresponding LA can contain up to eight LICs of type 1 to 4, and up to 16 LICs of type 5 or 6, and can support up to 32 lines.
If EXTEND = NO, the corresponding LA can contain up to four LICs of type 1 to 4, and up to 8 LICs type 5 or 6, and can support up to 16 lines.

PRESENCE Indicates whether the LIC is present (Y) or not (N). The cable for LICs 5 and 6 is internal and assumed to be present.

TYPE The type of the LIC (1, 3, 4, 5, or 6).

NUMBER LIC number.

CLOCK (C) AND CABLE INFO (I)

C (clock type):
0 Clock not defined
1 Internal clock
2 External clock
3 Direct attachment.

I (cable information):
0 Cable not installed
1 LIC type 1, 4 wrap block
2 LIC type 3 wrap cable
3 LIC type 5 wrap
4 Modem attachment
5 Direct attachment
6 Autocall
7 LIC type 6 wrap.

Note: For a LIC 5 or LIC 6, the clock is 0 or 2.

Updating One TSS Line Adapter

Replacing, Deleting, or Adding a LIC or a TSS Cable

Note: The MOSS must be **online** or **offline**.
Lines on LIC must be deactivated before proceeding with update.

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND ■ F5

x = LA number

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND ■ F5

x = LA number

Use one of the following CDF options to update the configuration data file after you have physically removed or added a LIC or a TSS cable. If you replaced a LIC or a TSS cable by another one of the same type, you need not update the CDF.

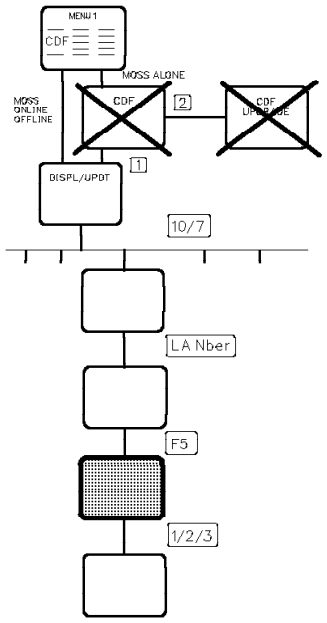
If you removed, or added a TSS cable, you must use option REPLACE LIC.

To replace, delete, or add a LIC

Refer to the *IBM 3745 Communication Controller: Connection and Integration Guide*, SA33-0129.

Remember also the port swap facility (see “Port Swap File (PSF)” on page 251).

.

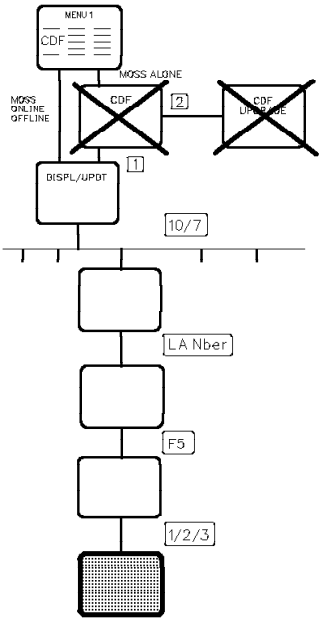



```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                         CDF - UPDATE : LA 9

- SELECT ONE OPTION (1 TO 3), THEN PRESS SEND ==>

     1 = REPLACE LIC
     2 = DELETE LIC
     3 = ADD LIC




===>

F1:END       F3:ALARM                        F6:QUIT       F7:DISPLAY
```

Refer to Appendix D, “Messages” on page 463 in case of messages.

From the above screen:

- Select option 1 then press SEND:
  - To replace an existing LIC with another LIC. This is the same as deleting an existing LIC, then adding a different LIC.
  - For a TSS cable change.
- Select option 2 then press SEND:
  - To delete an existing LIC (that has been replaced by a dummy LIC).
- Select option 3 then press SEND:
  - To add a new LIC (that has replaced a dummy LIC).



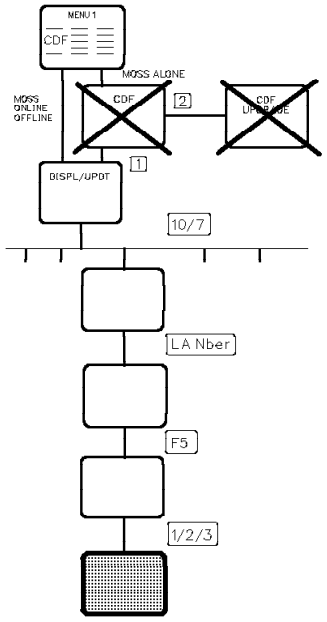

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
          CDF - UPDATE : REPLACE LIC OF LA 3

- SELECT THE LIC POSITION (1 TO xx), THEN PRESS SEND  ==>









- PRESS SEND
===>

F1:END         F3:ALARM                F6:QUIT       F7:DISPLAY
```

From the above screen:

Enter the LIC position then press SEND.
To find out the LIC position, refer to the *3745 Connection and Integration Guide*.

Note: The MOSS must be **online** or **offline**.
Lines on LIC must be deactivated before proceeding with update.
If a LIC type 6 running at 56 kbps is plugged in a wrong position, the following message is displayed:

- 56 KBPS LIC(S) 6 MISPLUGGED: PLUG IN ODD POSITION
- Refer to Appendix D, “Messages” on page 463. Do as told, then restart the CDF Update function.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - LIC CHANGE: LIC 1

CDF LIC CHANGE STARTED

     ADAPTER INFORMATION   : FETCHED
     OPERATOR CHOICE       : ACCEPTED


CDF LIC CHANGE COMPLETED




===>

F1:END       F3:ALARM                    F6:QUIT        F7:DISPLAY
```

About the above screen:

It is displayed when the update is successfully completed.
All changes performed with the MOSS offline will become effective after the MOSS is online.

ADAPTER INFORMATION If ERROR is displayed: ☎

OPERATOR CHOICE If REJECTED is displayed, you may have entered a wrong option or done an incorrect hardware modification.

If the LIC is not present, the operator choice will be rejected.

Displaying or Updating One HPTSS Line Adapter

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F [SEND] ■ 1 0 [SEND] ■ X [SEND]

x = LA number

If the MOSS is Alone

C D F [SEND] ■ 1 [SEND] ■ 1 0 [SEND]

■ X [SEND]

x = LA number

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

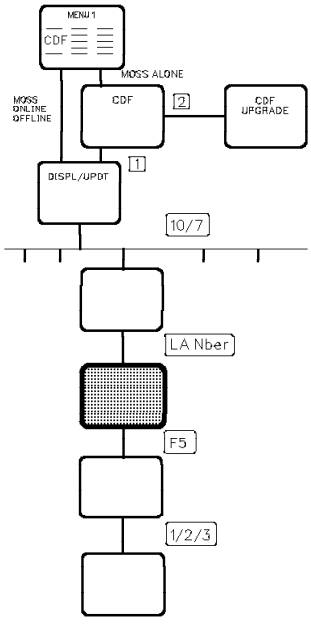
C D F [SEND] ■ 7 [SEND] ■ X [SEND]

x = LA number

If the MOSS is Alone

C D F [SEND] ■ 1 [SEND] ■ 7 [SEND] ■ X [SEND]

x = LA number




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY/UPDATE : LA 3

 SWITCH : --    LAB   : --   PS ID  : --    ADDR : 11       PORT1 : 1028
 IOC    : 1-    GROUP : 2    CCU    : A     TYPE : HPTSS    PORT2 : 1029



 ERROR SEQUENCE                                        :    7FFF
 DSR  INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) :    0


===>

F1:END     F3:ALARM     F5:UPDATE   F6:QUIT  F7:PREVIOUS LA   F8:NEXT LA
```

From the above screen:

The following data may be updated:

- The error sequence
- The DSR integration timer.

To do so, press F5; then, on the next screen (shown on page 51), select option 1.
All changes will become effective after the next IML of the line adapter.

DMA SIZE Length of burst. Depending on the microcode level of the 3745, this field may no longer be displayed and modifiable on the screen. Default values are set as follows:

- 64 for receive operations
- 254 for transmit operations.

ERROR SEQUENCE Pattern sent in case of error.

DSR INTEGRATION TIMER
Adjustable confirmation delay when the Data Set Ready (DSR) level changes. The default value is 16.

Updating One HPTSS Line Adapter

Replacing, Deleting, or Adding an HPTSS Cable

Use this CDF option to update the configuration data file after you have physically replaced, removed, or added an HPTSS cable.

Models 130, 150, 160, 170, 17A

The MOSS must be Online

C D F SEND ■ 1 0 SEND ■ X SEND ■ F5

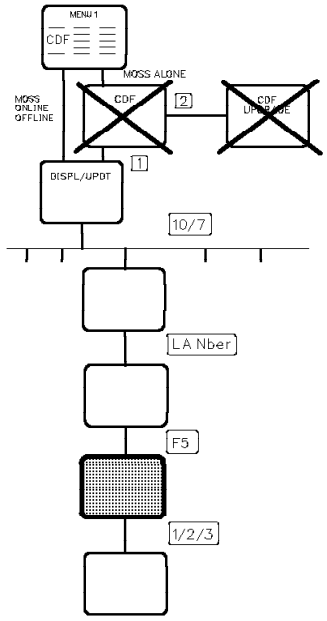
x = LA number

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

The MOSS must be Online

C D F SEND ■ 7 SEND ■ X SEND ■ F5

x = LA number



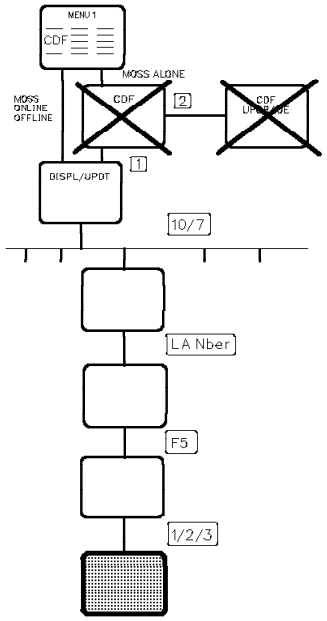

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                         CDF - UPDATE : LA 9

- SELECT ONE OPTION (1 TO 2), THEN PRESS SEND ==>

     1 = UPDATE LA PARAMETERS
     2 = UPDATE LA PARAMETERS WITH CABLE INFORMATION ONLY




===>

F1:END         F3:ALARM                    F6:QUIT      F7:DISPLAY
```

From the above screen:

- Select option 1; then press SEND to update the LA parameters displayed on the preceding screen.
- Select option 2; then press SEND to update the cable information. Go to page 53.

Option 1 - Update LA Parameters

.

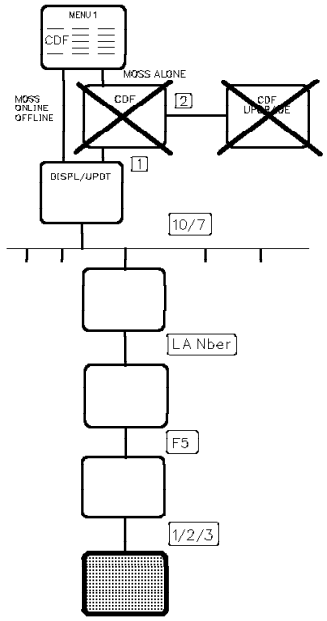



```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - UDPATE : LA 5

 SWITCH : A        LAB   : 1    PS ID  : 10       ADDR : 90       PORT1 : 1032
 IOC    : 2        GROUP : 1    CCU    : A        TYPE : HPTSS    PORT2 :



 ERROR SEQUENCE                                      ==>  7FFF
 DSR  INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS) ==>  16


===>

F1:END       F3:ALARM                      F6:QUIT  F7:DISPLAY
```

When the change is complete, you see the message:
UPDATE OF THE CDF FILE SUCCESSFUL.

Option 2 - Update LA Parameters with Cable Information Only

If you select option 2 from the HPTSS Line Adapter Update screen, the following screen is displayed:




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - LA 9 CHANGE

CDF LA CHANGE STARTED

     ADAPTER INFORMATION   : FETCHED
     OPERATOR CHOICE       : ACCEPTED


CDF LA CHANGE COMPLETED




===>

F1:END       F3:ALARM                  F6:QUIT       F7:DISPLAY
```

This screen is displayed when the update is successfully completed.

Changes are automatically taken into account by NCP.

- If only one port was active at update time, the following message is displayed:
  ONLY PORT xxxx IS TAKEN INTO ACCOUNT BY THE CDF
- If the two ports were inactive at update time, the following message is displayed:
  PORTS xxxx AND xxxx ARE TAKEN INTO ACCOUNT BY THE CDF

ADAPTER INFORMATION If ERROR is displayed: ☎

OPERATOR CHOICE If REJECTED is displayed, you may have entered a wrong option or performed an incorrect hardware modification.

The presence of the HPTSS line adapter cable is reflected in the configuration data file and in the Network Control Program (NCP).

Displaying One TRSS Line Adapter

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND

x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND

x = LA number

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND ■ 7 SEND ■ X SEND

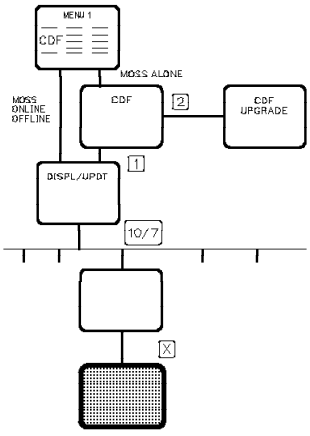
x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND

x = LA number

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY/UPDATE : LA 1

 SWITCH : ---     LAB   : ---  PS ID : ---    ADDR : 4800
 IOC    : 1       GROUP : 1    CCU   : A      TYPE : TRSS


  TIC                   PORT
POSITION     PRESENCE  NUMBER    TYPE
   1            Y       1088       2
   2            Y       1089       2



===>

F:END        F3:ALARM               F6:QUIT          F8:NEXT LA
```

From the above screen:

You cannot update TRSS line adapter characteristics.

TIC POSITION	Position number of the TIC in the TRA board.
PRESENCE	Y (yes) or N (no), depending on whether a TIC card is present or not.
PORT NUMBER	Port in the range 1088 through 1095.
TYPE	• TIC type 1 attaches a token-ring network operating at 4 Mbps. • TIC type 2 attaches a token-ring network operating at 4 or 16 Mbps (Only the TIC type 2 is installed on models 130, 150, 160, 170, and 17A.)

Displaying One ESS Line Adapter

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 0 SEND ■ X SEND

x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 0 SEND ■ X SEND

x = LA number

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

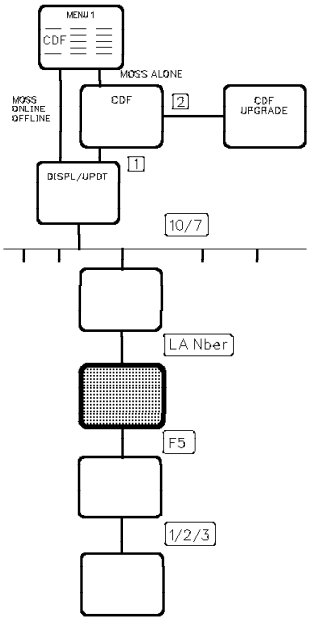
C D F SEND ■ 7 SEND ■ X SEND

x = LA number

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 7 SEND ■ X SEND

x = LA number




```
------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY : LA **

 SWITCH : --       LAB   : --   PS ID : --       ADDR : 11      PORT1 : 1060
 IOC    : 1        GROUP : 2    CCU   : A        TYPE : ESS     PORT2 : 1061









==> ...

F1:END            F3:ALARM            F6:QUIT  F7:PREVIOUS LA  F8=NEXT LA
```

Displaying or Updating Ports

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F [ ] SEND ■ 1 1 [ ] SEND

If the MOSS is Alone

C D F [ ] SEND ■ 1 [ ] SEND ■ 1 1 [ ] SEND

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

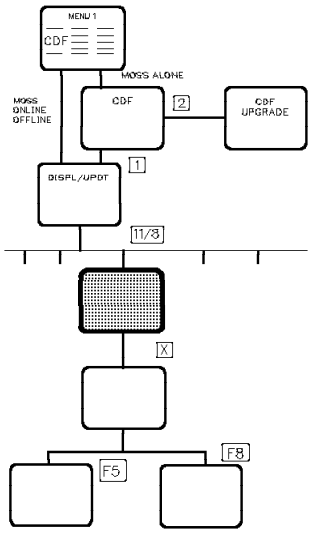
If the MOSS is Offline or Online

C D F [ ] SEND ■ 8 [ ] SEND

If the MOSS is Alone

C D F [ ] SEND ■ 1 [ ] SEND ■ 8 [ ] SEND

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY/UPDATE : PORTS



- SELECT ONE PORT (0 TO 1095), THEN PRESS ENTER  ==>

        0 TO 895  = TO DISPLAY/UPDATE TSS PORTS
     1024 TO 1039 = TO DISPLAY HPTSS PORTS
     1056 TO 1071 = TO DISPLAY ESS PORTS
     1088 TO 1095 = TO DISPLAY TRSS PORTS



===>

F1:END            F3:ALARM                        F6:QUIT
```

You can select:

- A TSS port number from 0 through 895
- An HPTSS port number from 1024 through 1039
- An ESS port number from 1056 through 1071
- A TRSS port number from 1088 through 1095.

Displaying or Updating One TSS Port

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 1 SEND ■ X SEND

x = port number (0-895)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 1 SEND ■ X SEND

x = port number (0-895)

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND ■ 8 SEND ■ X SEND

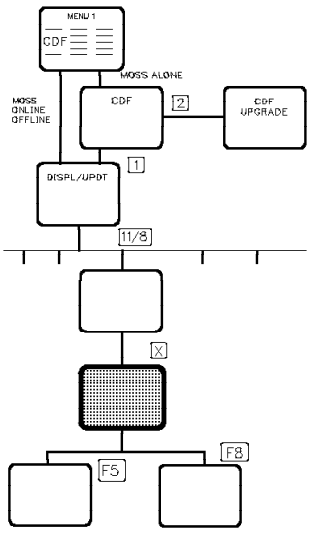
x =port number (0-895)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 8 SEND ■ X SEND

x = port number (0-895)

.




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY: PORT 1
                                                          PRESENCE
 CCU    : A    IOC  :  1    FRAME :  --  MUX :  1      MUX  LIC  CABLE
 SWITCH : ---  LA   :  5    IPL   :  N   LIC :  1       Y    Y     Y


 PORT CLOCKING (0,1,2,3)                        :  0   A
 TRANSIENT THRESHOLD (0 TO 15)                  :  3   A



===>

F1:END        F3:ALARM      F5:UPDATE  F6:QUIT            F8:FWD
```

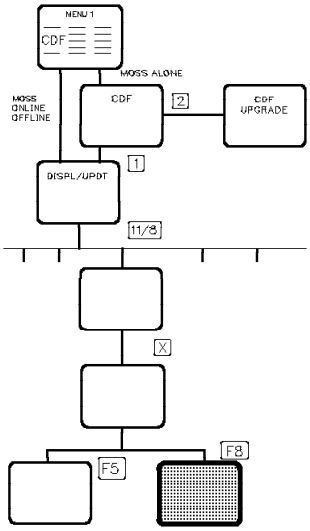
From the above screen:

- Press F8:FWD to display INTEGRATION TIMER information. (Refer to **B** in screen shown on page 60).
- Press F5 to update lines. (Refer to **A** and **B** in screen shown on page 61).

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying the Integration Timer (by Pressing F8)

.




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - DISPLAY: PORT 1
                                                              PRESENCE
 CCU    : A     IOC :  1    FRAME :  ---  MUX : 1      MUX  LIC  CABLE
 SWITCH : ---   LA  :  5    IPL   :  N    LIC : 1       Y    Y     Y


DSR  INTEGRATION TIMER (0,1,4,16,32,64,128MS OR 10S) :   16   B
RLSD INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS)   :   16   B
RI   INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS)   :   16   B



===>

F1:END           F3:ALARM       F5:UPDATE  F6:QUIT  F7:BWD  F8:NEXT PORT
```

--- means not applicable.

From the above screen:

- Press F7:BWD to re-display the previous screen.
- Press F5 to update lines. (Refer to **A** and **B** in screen shown on page 61.)

CCU CCU attached to the port.

FRAME BF for the 3745 base frame or L13, L14, or L15 for the appropriate 3746 unit number.

MUX Number of the multiplexer from 1 through 56.

LIC LIC number.

CABLE The cable for LIC types 5 and 6 is internal and assumed to be present.

PORT CLOCKING

- 0 Clock not defined.
- 1 Internal clock.
- 2 External clock.
- 3 Direct attachment (also called: 3745 mode or direct mode).
- For LIC types 1, 3, and 4, port clocking values can be 0, 1, 2, or 3. For a LIC 5 or LIC 6, values can only be 0 or 2 (default value is 2).

TRANSIENT THRESHOLD

Maximum number of consecutive transient TSS errors received before a solid error is generated. The default value 3 is recommended.

DSR INTEGRATION TIMER

Adjustable confirmation delay when the Data Set Ready level changes. The value 256 is not allowed for this timer.

RLSD INTEGRATION TIMER

Adjustable confirmation delay when the Receive Line Signal Detector level changes. The value 10 is not allowed for this timer.

RI INTEGRATION TIMER
Adjustable confirmation delay when the Ring Indicator level changes. Used only with LIC types 1 through 4. The value 10 is not allowed for this timer.

IPL Y or N. Indicates if it is an IPL port or not.

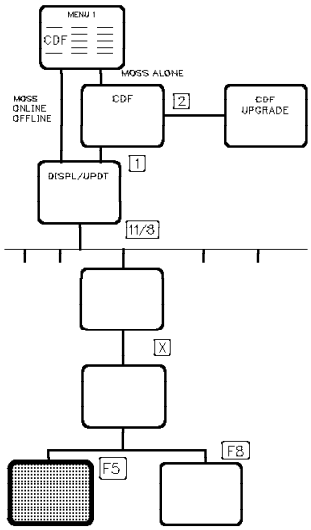
Note: The RI integration timer options line is not used and, therefore, displayed for LIC types 5 and 6.

DSR Adjustable confirmation delay when the Data Set Ready (DSR) level changes. The default value is 16.

RLSD Adjustable confirmation delay when the Receive Line Signal Detector (RLSD) level changes. The default value is 16.

RI Adjustable confirmation delay when the Ring Indicator (RI) level changes. The default value is 16.

Updating One TSS Port (by Pressing F5)




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                        CDF - UPDATE : PORT 14



PORT CLOCKING (0, 1, 2, 3)                          ==>  2  A
TRANSIENT THRESHOLD (0 TO 15)                       ==>  3  A
DSR  INTEGRATION TIMER (0,1,4,16,32,64,128MS OR 10S)==>  16    B
RLSD INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS)  ==>  16    B
RI   INTEGRATION TIMER (0,1,4,16,32,64,128,256 MS)  ==>  16    B


===>

F1:END           F3:ALARM                    F6:QUIT  F7:DISPLAY
```

From the above screen:

You can update information in the appropriate fields.
Do not forget to press SEND after you have updated port information.

Displaying One HPTSS Port

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 1 SEND ■ X SEND

x = port number (1024-1039)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 1 SEND ■ X SEND

x =port number (1024-1039)

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

If the MOSS is Offline or Online

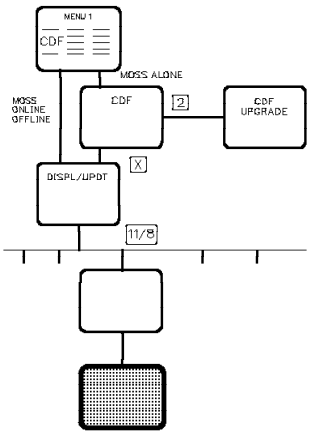
C D F SEND ■ 8 SEND ■ X SEND

x =port number (1024-1039)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 8 SEND ■ X SEND

x =port number (1024-1039)




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                         CDF - DISPLAY: PORT  1028
                                                          PRESENCE
 CCU    : A    IOC  :  1    FRAME :  ---                    CABLE
 SWITCH : ---  LA   :  3    IPL   :  N                       Y



CABLE ID : x
INTERFACE TYPE : V.35



===>

F1:END        F3:ALARM       F6:QUIT    F7:PREVIOUS PORT   F8:NEXT PORT
```

CABLE ID
1 Wrap block
4 Modem attachment
5 Direct attachment

INTERFACE TYPE
V.35
X.21

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying One ESS Port

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 1 SEND ■ X SEND

x = port number (1056-1071)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 1 SEND ■ X SEND

x =port number (1056-1071)

Models 210, 310, 410, 610 21A, 31A, 41A, 61A

If the MOSS is Offline or Online

C D F SEND ■ 8 SEND ■ X SEND

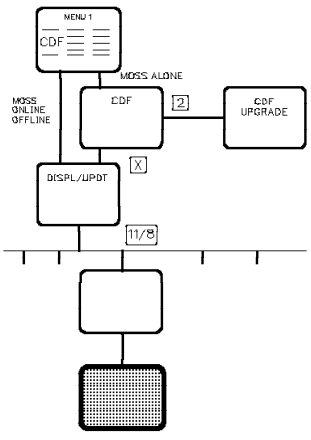
x =port number (1056-1071)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 8 SEND ■ X SEND

x =port number (1056-1071)

.




```
------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                         CDF - DISPLAY PORT : 1056


 CCU    : A    IOC  :  1    FRAME : BF
 SWITCH : -    LA   :  1    IPL   : N









==> ...

F1:END     F3:ALARM         F6:QUIT   F7:PREVIOUS PORT   F8:NEXT PORT
```

If a port is not installed, the message PORT NOT INSTALLED is displayed.

Displaying One TRSS Port

Models 130, 150, 160, 170, 17A

If the MOSS is Offline or Online

C D F SEND ■ 1 1 SEND ■ X SEND

x = port number (1088-1095)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 1 1 SEND ■ X SEND

x = port number (1088-1095)

Models 210, 310, 410, 610
21A, 31A, 41A, 61A

If the MOSS is Offline or Online

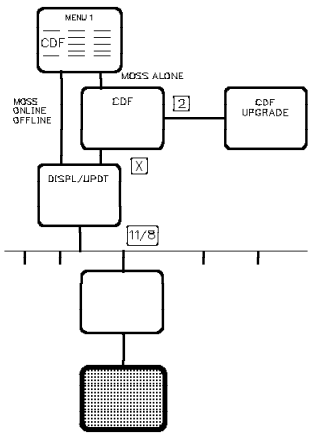
C D F SEND ■ 8 SEND ■ X SEND

x = port number (1088-1095)

If the MOSS is Alone

C D F SEND ■ 1 SEND ■ 8 SEND ■ X SEND

x = port number (1088-1095)




```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                          CDF - DISPLAY: PORT  1088

 CCU    : A    IOC  :  1    FRAME :  ---
 SWITCH : ---  LA   :  1    IPL   :  N









===>

F1:END        F3:ALARM         F6:QUIT                  F8:NEXT PORT
```

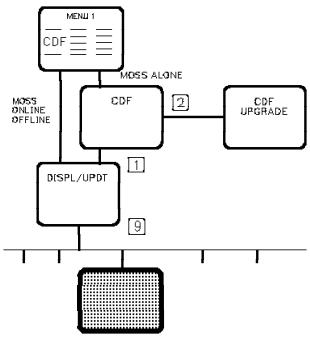
CCU Operating Mode Display/Update (Models 210, 21A, and Higher)

If the MOSS is Offline or Online

C D F SEND . 9 SEND

If the MOSS is Alone

C D F SEND . 1 SEND . 9 SEND




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONFIG DATA FILE
                    CDF - DISPLAY : CCU OPERATING MODE



 CCU OPERATING MODE (1 TO 4)                              : 2
     1 = TWIN DUAL
     2 = TWIN STANDBY
     3 = TWIN BACKUP
     4 = SINGLE

 TWIN STANDBY MODE ONLY : OPERATIONAL CCU (A OR B)        : A


 ===>

 F1:END            F3:ALARM           F5:UPDATE    F6:QUIT
```

The default CCU operating modes are

- **Twin-backup** for Models 410, 41A, 610, and 61A.
- **Single** for Models 210, 21A, 310, and 31A. Modes 1, 2, and 3 are not available for Models 210, 21A, 310, and 31A.

For a detailed description of the 3745 modes of operation, refer to the *IBM 3745 Communication Controller: Introduction*.

From the above screen:

- You can select another CCU operating mode by entering the appropriate number.
  If you select mode 2 (**twin-standby**), you must select either CCU-A or CCU-B by entering A or B in the appropriate field. In this case, the CCU that is selected is the CCU that is operational during IPL.
- After you have changed modes, perform an IPL (refer to “IPL Twin-CCU Configuration (Models 410, 41A, 610, and 61A)” on page 201).

  If neither CCU is loaded (Both, Run, or Ready), an IPL will be accepted for either CCU.

CCU Operating Mode Changes

The operating modes can be changed according to the following rules:

1. With the MOSS ALONE: All operating modes
2. With the MOSS ONLINE or OFFLINE:
   - Twin-dual to twin-backup
   - Twin-backup to twin-dual (if no fallback)
   - Twin-standby to twin-backup, twin-dual, or single.

If some files (such as port swap file) are opened, the request will be rejected.

The following table shows the possible changes of the CCU operating mode, and the action taken for each change request.

Table 8. CCU Operating Mode Changes

Current Operating Mode	Selected Operating Mode				
	Single	**Twin-Standby A**	**Twin-Standby B**	**Twin-Dual**	**Twin-Backup**
Single	-	3	3	3	3
Twin-standby A	3	-	2	2	2
Twin-standby B	3	2	-	2	2
Twin-dual	3	2	2	-	1
Twin-backup	3	2	2	1	-

Actions

1. If fallback is:
   - Active: Change refused
   - Not active: Change accepted (no IPL needed).
2. If NCP is:
   - Running: Change refused
   - Not running: Change accepted (IPL needed).
3. Change refused

   When the change is refused, CDF create or upgrade must be performed first.

Impact on NCP/PEP Load Module of CCU Operating Mode Changes

Table 9. Impact of CCU Operating Mode Changes on NCP/PEP Load Modules (Models 410, 41A, 610, and 61A)

Current Operating Mode	Selected Operating Mode				
	Single (NCP A)	**Twin-Standby (NCP A)**	**Twin-Standby (NCP B)**	**Twin-Dual**	**Twin-Backup**
Single (NCP A)	No effect	No effect	A to B	No effect	No effect
Twin-Standby (NCP A)	No effect	No effect	A to B	No effect	No effect
Twin-Standby (NCP B)	B to A	B to A	No effect	No effect	No effect
Twin-Dual	**Deactivate NCP B**	**Deactivate NCP B**	**Deactivate NCP A**	No effect	No effect
Twin-Backup	**Deactivate NCP B**	**Deactivate NCP B**	**Deactivate NCP A**	No effect	No effect

Single-CCU Mode (Models 210, 21A, 310, and 31A)

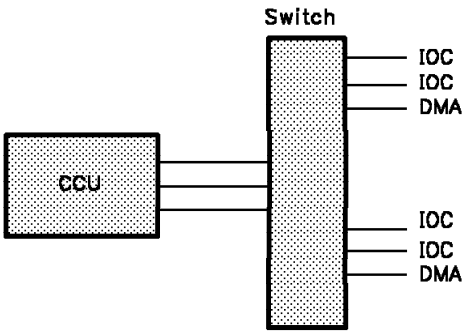


Figure 1. Single-CCU Mode

In single-CCU mode:

- A single CCU is installed.
- There is no CCU backup possibility.

Twin-Dual Mode (Models 410, 41A, 610, and 61A)

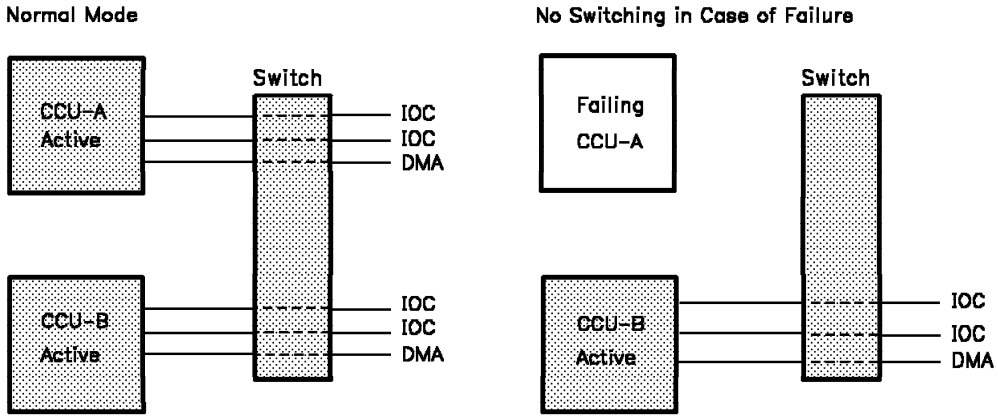


Figure 2. Twin-Dual Mode

In twin-dual mode:

- Two CCUs are installed.
- Both CCUs are operational simultaneously.
- Each CCU has its own NCP/PEP load module and controls its own network.
- There is no provision for backup.

Before changing the operating mode, refer to Table 8 on page 67 and Table 9 on page 68.

Twin-Standby Mode (Models 410, 41A, 610, and 61A)

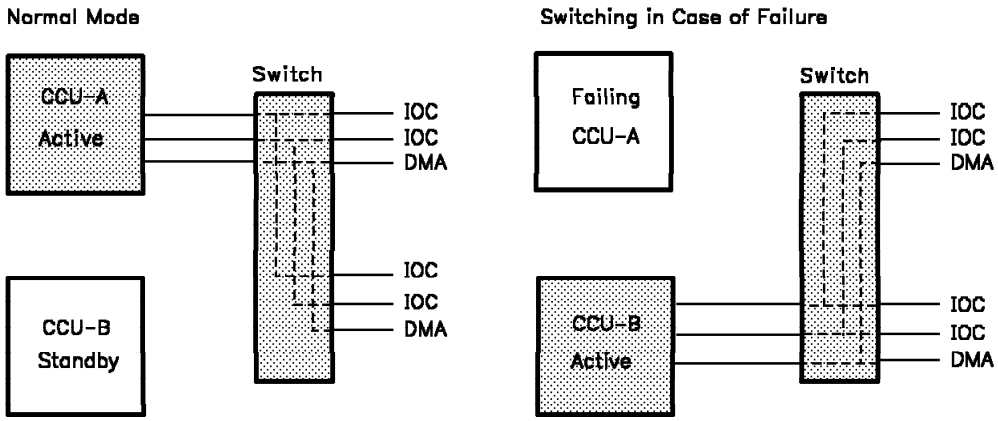


Figure 3. Twin-Standby Mode

In twin-standby mode:

- Two CCUs are installed.
- Only one CCU is operational and the other CCU is in standby mode. It is recommended that the two CCUs have the same NCP/PEP load module.
- The active CCU controls channel and line adapters of the network.
- If the active CCU fails, its channel and line adapters are automatically switched to the other CCU.

  In this case, the MOSS performs a *fallback* procedure, which consists of:

- Disconnecting all the adapters from the failing CCU via the bus switch
- Connecting all adapters to the other CCU instead
- Triggering an automatic IPL on the standby CCU.

After the fallback is complete, the user can then reactivate the network resources. There is no performance or network degradation.

With the **fast fallback** capability **(hot standby)**, the standby CCU is already pre-loaded with a copy of the control program. It is idle but ready to take over the full configuration in case of a hardware failure of the active CCU. Fast fallback requires the following conditions:

- NCP Version 5 Release 2.1 or later is running in the CCU(s).
- The save on disk and auto dump/load options have been set appropriately.
- There is an active load module on the controller disk.
- There is no NCP dump on the disk.

For more details, refer to “Bus Switching” on page 71.

Before changing the operating mode, refer to Table 8 on page 67 and Table 9 on page 68.

Twin-Backup Mode (Models 410, 41A, 610, and 61A)

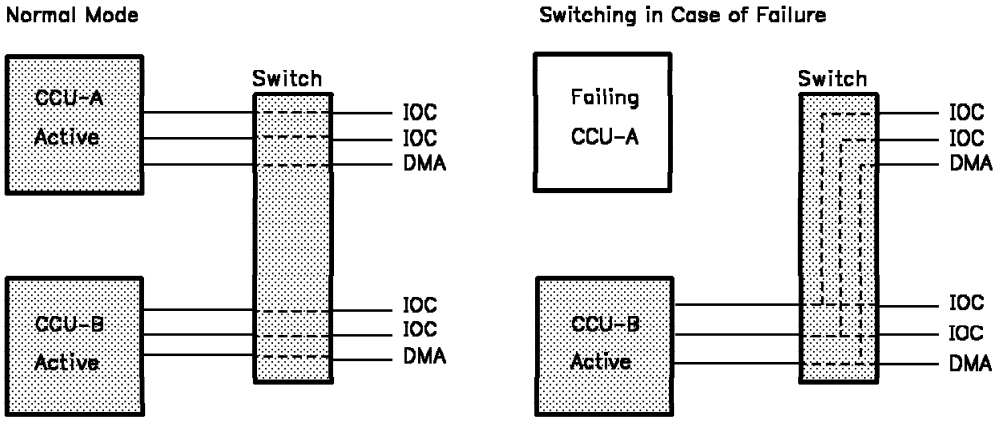


Figure 4. Twin-Backup Mode

In twin-backup mode:

- Two CCUs are installed.
- Both CCUs are operational simultaneously, each controlling part of the network.
- If one CCU fails, its channel and line adapters are automatically switched to the other CCU.
- The switching is performed by the MOSS through a *fallback* procedure. The user can then activate all or part of the resources of the failing CCU on the other CCU.
- Each NCP should be generated to be able to backup the other NCP in the twin-backup mode. The number of resources that would be taken over by the active CCU and NCP may be restricted depending upon the network performance requirements.

Before changing the operating mode, refer to Table 8 on page 67 and Table 9 on page 68.

Bus Switching: Bus switching enables all line and channel adapters to be switched from one CCU to the other CCU for twin configurations in standby and backup mode. This function is performed automatically in the event of a CCU hardware failure through the MOSS fallback procedure.

- **In standby mode,** the bus switching disconnects all the resources from the failing CCU and moves them to the other CCU. The current control program load module is automatically loaded in this CCU. The resources can then be reactivated from the host. Sessions are disrupted during the fallback process.
- **In backup mode,** the bus switching disconnects the resources from the failing CCU and moves them to the backup CCU. It is recommended that the two NCPs be generated appropriately so that the running CCU can take over the new line configuration. Switching has no impact on the sessions already running in the backup CCU. The network operator can reactivate all or part of the switched resources. When the failure is repaired, all resources can be reactivated on the previously-failed CCU. This is performed through a MOSS manual *switchback* procedure.

Channel Adapter Interface Display (CID)

Use the CID function to either enable or disable the channel adapters.


```
------------------------------------------------------------- mm/dd/yy hh:mm
                            CA INTERFACE DISPLAY
INTERFACE  CHANGE      E/D    INTERFACE     HOST OR    CHANNEL    NSC
 NUMBER    E/D REQ   REQUEST   STATUS     SWITCH UNIT  ADDRESS  ADDRESS

   1A                   -      -
   2A                   -      -
   3A                   -      -
   4A                   -      -
   5A       ==>          E    ENABLED                              40
   5B       ==>       D       DISABLED                             41
   7A       ==>       D       DISABLED                             42
   8A                   -      -

- TYPE E OR D TO CHANGE THE ENABLE/DISABLE REQUEST, THEN PRESS SEND


               F4:MOSS FUNCTIONS    F5:UPDATE
```

From the above screen:

To enable or disable a channel adapter:

- Press the Tab key until the cursor is at the appropriate CHANGE E/D REQ field.
- Enter E (enable) or D (disable).
- Repeat the procedure if there are several CAs to update, then:
- Press SEND.

The E/D REQUEST field is updated immediately. The INTERFACE STATUS field is updated if the CA is initialized. Otherwise it is updated at the next IPL. See following **required conditions to enable or disable a CA interface**.
Press **F5:UPDATE** to update HOST OR SWITCH UNIT and CHANNEL ADDRESS.
Press **F8:FORWARD** (only for Models 210, 21A and higher) to continue with the next screen and display the next CAs (9 to 16).

INTERFACE NUMBER: A and B next to the interface number indicate the type of interface.

The CID screen is also displayed immediately when the MOSS is powered on. You can request to *enable* or *disable* a channel interface, which links the channel adapter to the host. If there is a two-processor switch (TPS), there are two interfaces: A and B. If there is no TPS, there is a single interface: A.

Required conditions to enable a CA interface

- The channel adapter must be physically connected to the host.
  Any switching unit between the host and the 3745 must be correctly configured.

- There must be CLDP or NCP/EP running in the CCU.
  - When CLDP is loaded, FF4 is displayed at the control panel.
    CLDP allows the enabling of all channel adapters that are defined in the CDF. Once the loading of NCP starts, CLDP disables all channel adapters, except the one used for loading, until the control is given to NCP.
  - When NCP is loaded, 000 is displayed at the control panel.
    NCP allows only the enabling of channel adapters that are defined in NCP.
- You must type E (enable) and press SEND.

Note: On CADS with TCS under a PEP environment, before requesting an interface to be enabled, ensure that the other side shows a status of Disabled, and all EP Lines have been stopped. Failure to do this will result in an abend 925 - Invalid Line Address.

Required conditions to disable a CA interface

- The channel adapter must be physically connected to the host.
  Any switching unit between the host and the 3745 must be correctly configured.
- You must type D (disable) and press SEND.
  - When only CLDP is loaded, the disabling is immediate.
    CLDP allows the disabling of all channel adapters that are defined in the CDF.
  - When NCP is loaded and running, the disabling is under control of the control program. The disabling is immediate as long as no channel operation is in progress.
  - When EP/PEP is loaded and running, the disabling may last several minutes. All lines must be stopped (under EP/PEP control) before the CA interface becomes disabled.

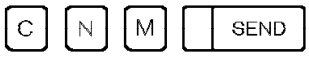
Three asterisks in the E/D REQUEST column, means that MOSS could not save or retrieve the information, because of a disk error. Issue the request again, by entering either E or D.

All enable or disable requests are saved on disk and automatically retransmitted when you perform an IML after a power off.

CCU Normal Mode (CNM)

Use the CNM function to leave instruction step mode and return to normal mode. The following CCU functions are reset and returned to default:

- Bypass IOC check
- Stop on CCU check
- Branch trace
- Address compare.



The function is performed immediately. PROCESS is displayed in field c of the MSA.

Control Program Procedures (CPP)

A control program procedure is a sequence of instructions that call and execute one or several IBM Network Control Program (NCP) or IBM Emulation Program (EP) functions to perform a specific task.

To create and run the control program procedures, you have at your disposal a series of tools, referred to as 3745 procedure tools.

Control program procedures are:

1. Pre-cataloged control program procedures. They are already cataloged in the 3745 disk and are available at any time to perform an appropriate task. The name of these procedures always starts with CP. You cannot erase or modify them, nor can you create a procedure whose name starts with CP. You can only display, copy, and execute them. Pre-cataloged procedures are described later in Appendix C, “Using Control Program Procedures (CPP)” on page 415.,
2. Your own control program procedures that you create and catalog using the 3745 procedure tools.

Note: Controlled Program Procedures dialogue directly with NCP and not with VTAM. This means that following some MOSS functions a Controlled Program Procedure may fail.

For example, after swapping ports from 'X' to 'Y' (without any physical moving of cables), in NCP and VTAM, information about ports and lines 'X' and 'Y' become different. Within NCP, the line 'X' is no longer recognized. Information about port 'X' is now transferred to port 'Y'. Within VTAM, only the line 'X' is recognized. If you start the pre-cataloged procedure 'CP01', on the line 'X' the procedure fails, as the line 'X' is no longer defined in NCP.

Appendix C, “Using Control Program Procedures (CPP)” on page 415 provides the following information:

- A description of the 3745 procedure tools that you use to run the control program procedures.
- An explanation of each step of the pre-cataloged procedures that you can execute and copy.
- Information on how to create some control program procedures.

CCU Selection/Release (CSR) Models 410, 41A, 610, and 61A

Use the CCU Select/Release function to select either CCU-A or CCU-B.

The following screen is displayed:


```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: CCU SEL/RELEASE



- SELECT ONE OPTION (1,2,3) ==>

    1 = CCU FUNCTIONS TO BE PERFORMED ON CCU-A
    2 = CCU FUNCTIONS TO BE PERFORMED ON CCU-B
    3 = RELEASE CCU PREVIOUSLY SELECTED IF ANY




===>

F1:END  F2:MENU1  F3:ALARM
```

Once you have selected a particular CCU, you can release it and select the other CCU.

CCU Status (CST)

Use the CST function to display the status of the CCU.

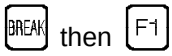
The CCU status is displayed in refresh mode. To stop refreshing, press the BREAK key.
The CCU state may be:

RUN: Which indicates that instructions are being executed and data transferred.

WAIT: Which indicates that the CCU control program is in Wait state: No instruction is being performed.

STOP: Which indicates that the CCU is not running.

To stop the refresh, press BREAK. To exit from this function:



CCU statuses are documented under MSA field h (see page 396).

Note: For Models **17A, 21A, 31A, 41A, and 61A** use

Display/Alter (DAL)

Use the DAL function to:

- Display CCU storage, local store registers (LSR) and work registers, or
- Alter the CCU data being displayed.

To display input registers, use the Display Long function (page 177).

The following Display/Alter Function screen is displayed.

Display

After you have selected the DAL function, select the CCU data that you want to display.

You may display, on the same screen, any or all of the following CCU data:

- 16 bytes of CCU storage. Example: If you enter S1234, 16 bytes are displayed, starting from the byte at address 1234.
- 4 LSRs. Example: If you enter L6, four LSRs are displayed, starting from LSR6.
- 4 work registers. Enter only W to display the first four work registers, then press F8 to display the last four.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY/ALTER
          - ENTER:   S FOLLOWED BY STORAGE ADDRESS    ==> W
                     L FOLLOWED BY LSR NUMBER
                     W (WORK REGISTERS)

          S 001234  0000  0010  0000  0010  0000  0010  0010  0010
          L 06      1F1BA2  000004  091EA8  000946
          W 00      09223E  00000   00BBF2  03FDFF









===>

F1:END  F2:MENU1  F3:ALARM  F4:ALTER  F5:REFRESH  F6:STR  F7:BWD  F8:FWD
```

From the above screen:

- Press SEND to re-display the current screen line.
- Press F4 to alter data (see page 84).
- Press F5 to refresh data every 500 ms. This allows you to view permanently the updated image of the data that you selected. To cancel the refresh, press BREAK.
- Press F6 to start the CCU without selecting the Start CCU function.
- You may enter more CCU data (S, L, or W).

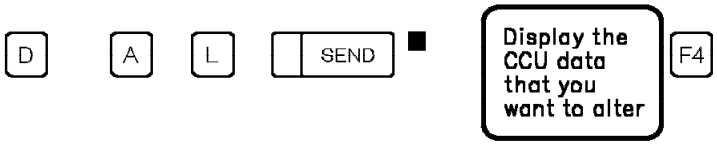
Once a line is displayed, you may display another one. To do so, enter another CCU data request.

Ten lines are available for display on the screen. When the screen is full, it wraps around. The latest displayed line (the current line) is highlighted.

Alter

To alter storage or LSRs, the control program may be either running or stopped, but *when you alter work registers, it must be stopped.* To stop the CCU, use the Stop CCU function (page 337).

To alter CCU data



Misuse of the Alter function may give unexpected results.

The addressed line is re-displayed on the line below and on the second line of the work area. The cursor is positioned at the first character that may be modified on that line.

1. Alter the data.
2. Press SEND.

The altered line moves below its original position and the re-displayed line. It becomes the third line of data indicated for that address. The screen is now in display mode.

Note: If you alter data and re-display it while the control program is running, the re-displayed data may not match what you altered. (That is, the system may have altered the data before you re-displayed it.)

Branch Trace Buffer Allocation

The branch trace buffer address and length are provided by the control program after the 3745 initialization. However, if you perform a branch trace before the control program is loaded, you have to allocate the branch trace buffer as follows:

1. Select the DAL function.
2. Enter L7C then press SEND to display the buffer length.
3. Press F4:ALTER.
4. Update LSR X'7C' with the buffer length. The maximum buffer length is X'FFF0'. The last digit of the buffer length must be 0.
5. Update LSR X'7D' with the buffer address + X'18'.
6. Press SEND.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY/ALTER
          - ALTER DATA
                     00FA00 00C310 00C310 FF000


          L 7C   00FA00 00C310 00C310 FF000
          L 7C   00FA00 00C310 00C310 FF000









===>      MISUSE OF ALTER MAY GIVE UNEXPECTED RESULTS

F1:END  F2:MENU1  F3:ALARM  F4:ALTER F5:REFRESH F6:STR F7:BWD F8:FWD
```

From the above screen:

- You may alter the data, as indicated in steps 4 and 5.
- Press F4: DISPLAY to cancel the alter request and return to display mode.
- Press F5: REFRESH to refresh data every 500 ms. This allows you to view constantly the updated image of the data selected. To cancel the refresh, press BREAK.
- Press F6: STR to start the CCU without selecting the Start CCU function.
- Press SEND, in alter mode, to re-display the selected CCU data once.
- Press F7: BWD to display the preceding 16 bytes of storage, four LSRs or four work registers.
- Press F8: FWD to display the next 16 bytes of storage, four LSRs or four work registers.

Data Exchange (DEX)

Use the Data Exchange function to transfer to the CCU control program the information necessary to select and execute NCP or EP functions and subroutines.

NCP functions are:

- Line Test
- Display of Storage
- Display of Register
- Channel Discontact
- Address Trace
- Channel Adapter Trace.

EP functions are:

- Line Test
- Display of Character Control Block
- Line Trace (level 2, level 3) and Scanner Interface Trace
- Present Status on Channel
- Display of Storage
- Multi-Subchannel Line Access (MSLA)
- Channel Adapter Reset
- Sub-channel Switching.

The above NCP and EP functions are also used in the control program procedures.

D E X SEND

The following screen is displayed:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DATA EXCHANGE
          DATA ==>             FUNCTION ==>         CCU LVL3 ==>









===>

F1:END  F2:MENU1  F3:ALARM F4:LATEST DATA EXCHANGE VALUE
```

Press F4 to display the contents of the CCU input X'71' and X'72' registers (values of the latest data exchange).

The values that you enter in the Data Exchange operands (DATA, FUNCTION, and CCU LVL3) must not conflict with the control program requirements.

DATA==> xxxxxx

To provide data to the control program function.

xxxxxx is a string of up to 6 hexadecimal digits, which is transferred to CCU via the CCU X'71' input register (operator address/data entry register). For example, xxxxxx can be a storage address or a subroutine code.

If you enter 6 digits, the leftmost digit must not exceed 3.

If you do not enter a value, the last one entered is taken.

FUNCTION==> xx

To call the control program function to be performed.

xx is the function code. It is a decimal value from 1 through 16. This code is transferred to the CCU via the CCU X'72' input register (operator display/function select register).

The value 11 indicates that a storage address is being transferred. Letter S may be substituted for the value 11. In a similar manner, value 12 or the letter R can be used to indicate a register address.

If you do not enter a value, the last one entered is taken.

CCU LVL3 ==> Y or CCU LVL3 ==> N

Y: An Operator Level 3 Interrupt is requested to signal to the control program that the function specified in FUNCTION ==> is to be performed.

N: An Operator Level 3 Interrupt is not requested and the function specified in FUNCTION ==> will not be performed.

If you specify CCU LVL3 ==> N, the data exchange is treated as a no operation. Re-enter with CCU LVL3 ==> Y.

CCU LVL3 Default Value: When you use the data exchange function for the first time, the default value is Y. From then on, it is replaced by the value that you entered in the previous data exchange.

Every time you press SEND, the information that you entered or modified is transmitted and you are prompted another time. When the screen is full, it wraps around.

NCP Environment with Partitioned Emulation Programming

In an NCP environment *with partitioned emulation programming (PEP) extension,* you may execute either NCP functions or EP functions. Before executing any function, you have to switch control to either NCP or EP mode.

Switching Control to NCP Mode

Table 10. Switching Control to NCP Mode

Step	Procedure	Comments
1	D E X SEND	To select the data exchange function.
2	DATA==> **C** FUNCTION==> **7** CCU LVL3==> **Y** SEND	To switch to NCP mode. If successful, MSA fields f and l display: f=X71:00000C I=X72:00000C

Switching Control to EP Mode

Table 11. Switching Control to EP Mode

Step	Procedure	Comments
1	D E X SEND	To select the data exchange function.
2	DATA==> **E** FUNCTION==> **7** CCU LVL3==> **Y** SEND	To switch to EP mode. If successful, MSA fields f and l display: f=X71:00000E I=X72:00000E

NCP - Line Test

Use the line test function to test NCP lines via the operator console. The function consists of an initialization subroutine, a series of test subroutines and an end-test subroutine.

Notes:

1. If a line is in use by the Line Test function, it is not available to the host.
2. If a line is in use by the host, it is not available to the Line Test function. Therefore, the line must always be deactivated before the line test is initialized.
3. Always use subroutine X'50' to end all test functions, to ensure availability of the line to the host.

While the Line Test function is being performed, codes are displayed in MSA fields f and l to show normal processing indications and errors. These codes are described in Table 14 on page 97.

All subroutine line tests are described in Table 13 on page 91.

Table 12. Line Test Procedure

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **0x20xy** FUNCTION==>**2** CCU LVL3==> **Y** SEND	To initialize the line test for the NCP line address xyz (hexadecimal).
3	If MSA field l is X72:00FFFF, go to step 5.	
4	If MSA field l is different from X72:00FFFF, an error occurred.	See Table 14 on page 97.
5	DATA==> **wxxyz** FUNCTION==>**2** CCU LVL3==> **Y** SEND	w = variable xx = subroutine code yz = variables w, x, yz are explained in the next table.
6	If MSA field l is different from X72:00FFFF, an error occurred.	See Table 14 on page 97.
7	If MSA field l equal to X72:00FFFF, go to next step.	
8	If another subroutine or more data characters to enter, go to step 5.	
9	If no more subroutine or data, go to next step.	
10	DATA==> **05000** FUNCTION==>**2** CCU LVL3==> **Y** SEND	To end the line test function.

DATA==> **wxxyz** FUNCTION==> 2 CCU LVL3==> Y

w, **xx**, and **yz** values are given in the second, third, and fourth columns of the following table.

Table 13 (Page 1 of 5). Subroutines Used When Performing an NCP Line Test

Subroutine Name	w	xx	yz	Description
Initialization	w	20	yz	To accept the relative hexadecimal line number (wyz) of the line to be tested. This subroutine must be executed before any other line test subroutine because it collects all the information about the line and saves it in the LTS control block. It also initializes the fields in the LTS so that the test will run properly.
Enable	0	40	00	To issue a Setmode and Enable to the line. This subroutine is for leased lines only. **Note:** This subroutine is required on leased lines before any Transmit/Receive subroutine is attempted.
Auto-Answer or Manual Dial	w	46	yz	To issue a Setmode and Monitor Incoming Call to the line and to complete the connection when the terminal calls in or someone manually dials out. If w=0 The subroutine ends after the connection is established. If w=1 The Receive Mode subroutine (X'4A') is executed after the connection is established. (See Note 3.) If w=2 The Transmit Buffer subroutine (X'4F') is executed after the connection is established. (See Note 3.) y and z are meaningful only if w=1 or 2. They are set the same as for subroutines X'4A' and X'4F'. **Notes:** 1. Subroutine X'46' is required on auto-answer and on manual dial lines before any other Transmit/Receive subroutine is attempted. 2. If a hardware ID is received from the device, it is saved in the LTSRID field upon completion of this subroutine and may be displayed using subroutine Display LTS (X'4C') with yz=46. 3. Subroutine X'46' may not be chained to Receive Mode (X'4A') or Transmit Buffer (X'4F') on an SDLC line because these two subroutines do not support SDLC.
Dial Digit Load	0	47	0z	To load each dialed digit (z=0 to 9), one by one, into a data area to be used by the dial operate subroutine (X'48'). X'F' must be the last digit. It indicates the end of the dialed digits. The special characters X'A' to X'D' are also accepted. **Notes:** 1. To resume entering the dialed digits from the beginning, enter X'F'. 2. Only 15 digits may be entered if the line is X.21, because a special digit is inserted at the end.

Table 13 (Page 2 of 5). Subroutines Used When Performing an NCP Line Test

Subroutine Name	w	xx	yz	Description
Dial Operate	w	48	yz	To issue a Set mode and Dial to the line and to complete the connection using the digits entered with subroutine Dial Digit Load (X'47'). If w=0 The subroutine ends after the connection is established. If w=1 The Receive Mode subroutine (X'4A') is executed after the connection is established. (See Note 3.) If w=2 The Transmit Buffer subroutine (X'4F') will be executed after the connection is established. (See Note 3.) y and z are meaningful only if w=1 or 2. They are set the same as for subroutines X'4A' and X'4F'. **Notes:** 1. Subroutine X'48' is required on auto-dial lines before any other transmit/receive subroutine is attempted. 2. If a hardware ID is received from the device, it is saved in the LTSRID field upon completion of this subroutine and may be displayed using subroutine Display LTS (X'4C') with yz=46. 3. Subroutine X'48' may not be chained to Receive Mode (X'4A') or Transmit Buffer (X'4F') on an SDLC line because these two subroutines do not support SDLC.
Receive Mode (BSC and Start-Stop)	0	4A	yz	Used to: • Monitor the line for incoming data, if the line is point-to-point • Poll the device if the line is multipoint. **Note:** To transmit and receive data on SDLC lines, use subroutine SDLC Test Frame with Data (X'63'). Once data is received, an ACK is transmitted for each block of data received until EOT is received. If y=1 Errors are ignored unless they are so severe that the scanner has disabled the line. If y=0 The subroutine quits if an error is received. A test code is displayed in MSA field l (Table 14). If z=1 The terminal is continuously polled or monitored until subroutine End Test (X'50') or End Function (X'5F') is selected. If z=0 The subroutine quits after it has received data followed by EOT. To display the last buffer of data received: 1. Use the Display LTS Address (X'4D') subroutine with yz=00 to get the address of the beginning of the received data buffer. The address will be displayed in MSA field l. 2. Enter this address in the Display Long function to display the received data buffer. The buffer is 256 bytes long. See “Display Long (DLO)” on page 177 for further details.
Display LTS	0	4C	yz	To display in MSA fields f and l two halfwords of the line test control block (LTS) beginning at the displacement yz (hexadecimal). **Note:** The halfwords displayed begin on a halfword boundary. If an odd offset is entered, the low-order bit is ignored.
Display LTS Pointer	0	4D	00	To display the address of the LTS pointer in MSA field l so that you may display the entire LTS by means of the CCU Display Long function. See “Display Long (DLO)” on page 177 for further details.

Table 13 (Page 3 of 5). Subroutines Used When Performing an NCP Line Test

Subroutine Name	w	xx	yz	Description
Transmit Buffer (BSC and Start-Stop)	0	4F	yz	To transmit the data that was loaded into the transmit buffer by means of the Load Transmit Buffer (X'51') subroutine. If y=1 Errors are ignored unless they are so severe that the scanner has disabled the line. If y=0 The subroutine ends when an error occurs. An error code is displayed in MSA field l (Table 14). If z=1 The data is transmitted continuously. If z=0 The data is transmitted once and the subroutine is ended. **Notes:** 1. You must first select subroutine X'67' to load addressing characters. 2. To transmit and receive data on SDLC lines, use the SDLC Test Frame With Data (X'63') subroutine. 3. If this is run as a continuous operation on a BSC line, the sequence will be STX-data-ETX. A comparable sequence will be sent for start-stop lines.
End Test	0	50	00	To end the Line Test function and disable the line. Reinitialize the line (subroutine X'20') before it can be used again by the system.
Load Transmit Buffer	0	51	yz	To load the specified characters (yz), one by one, into the transmit buffer, to be used by the Transmit Buffer (X'4F') or SDLC Test Frame With Data (X'63') subroutine. The size of the buffer is that specified at system generation.
Initialize Transmit Buffer Offset	0	58	yz	To set an offset value (yz, normally equal to X'00') in the transmit buffer at which you wish to begin storing data. **Note:** If a value other than X'00' is used, data will be stored at that offset into the data area. Transmission of the data will always begin at the first buffer position (offset=zero).
Disable	0	5D	00	To issue an X.21 DTE Clear Request or a Disable command to the line without ending the line test.
End Function	0	5F	00	To end a subroutine without ending the line test. The subroutine is ended when MSA fields: f = X71:00005F l = X72:00FFFF
Select Setmode Data Byte	0	60	0z	To select the Setmode data byte (z) that you want to change. There are 16 setmode bytes, so the value must be between X'0' and X'F'.
Change Setmode Data	0	61	yz	To change the Setmode data byte, specified in subroutine X'60', to the value yz. **Warning:** Invalid values may cause NCP to abend. **Notes:** 1. You must first choose the Setmode data byte (subroutine X'60') before you change it (subroutine X'61'). 2. You must execute subroutines X'60' and X'61' once for each Setmode data byte that you want to change. 3. The Enable subroutine (X'40') always changes the Setmode data byte to its generated values.

Table 13 (Page 4 of 5). Subroutines Used When Performing an NCP Line Test

Subroutine Name	w	xx	yz	Description
Test without Data (SDLC)	0	62	y0	To transmit an SDLC Test Frame continuously with no data and check the received frame. If y=1 Errors are ignored unless they are so severe that the scanner has disabled the line. If y=0 The subroutine ends if there is an error. Subroutine X'50' or X'5F' must be used to terminate the function if there is no error. **Note:** You must first select subroutine X'67' to load addressing characters.
Test Frame with Data (SDLC)	0	63	y0	To transmit an SDLC Test Frame continuously with the data stored in the buffer with the Load Transmit Buffer subroutine (X'51'). If y=1 Errors are ignored unless they are so severe that the scanner has disabled the line. If y=0 The subroutine ends if there is an error. Subroutine X'50' or X'5F' must be used to terminate the function if there is no error. **Note:** You must first select subroutine X'67' to load addressing characters.
Hardware ID Exchange (BSC and Start-Stop)	0	64	yz	To indicate whether a transmit hardware ID is required and/or a receive hardware ID is expected and if the line is a call-in or call-out line. **Note:** Subroutine X'64' is necessary only for BSC and start-stop switched lines that need hardware ID - EXCHANGE. If y=0 Call-out line. If y=1 Call-in line. If z=1 A receive hardware ID is expected. If z=2 A transmit hardware ID is required. If z=3 A receive hardware ID is expected and a transmit hardware ID is required.
Load Hardware ID (BSC and Start-Stop)	0	65	yz	To load the hardware ID (yz), one byte at a time, to be used if a transmit ID is required by subroutine X'64'. **Notes:** 1. Subroutine X'65' must be specified if a transmit ID is required. 2. The data area contains enough space for a 3-byte hardware ID.
Load Polling Characters	0	66	yz	To load the hexadecimal polling characters (yz), one by one, as they will be sent to the terminal for use by the Receive Mode (X'4A') subroutine. **Notes:** 1. Subroutine X'66' is required for subroutine X'4A' if the line is multipoint. 2. For subroutine X'4A' on BSC lines, the ENQ following the polling characters must also be supplied. 3. The data area allows room for 7 polling characters or 6 plus the ENQ character.

Table 13 (Page 5 of 5). Subroutines Used When Performing an NCP Line Test

Subroutine Name	w	xx	yz	Description
Load Addressing Characters	0	67	yz	To load the hexadecimal addressing characters (yz), one by one, as they will be sent to the terminal by subroutines X'4F', X'62', and X'63'. **Notes:** 1. Subroutine X'67' is required for subroutine X'4F' if the line is multipoint. 2. For subroutine X'4F' on BSC lines, the ENQ character that follows the addressing must also be supplied. 3. The data area allows room for 7 addressing characters or 6 plus the ENQ character. Only the first character will be used by subroutines X'62' and X'63'.

NCP Line Test Codes

The following table describes each code displayed in the MSA field l when executing an NCP line test. The last two digits of field f indicate the function or subroutine code.

Note: If another function is being used while the line test function is running, fields f and l do not contain reliable information.

Table 14. Line Test Codes

MSA Field f	MSA Field l	Description
X71:0000xx	X72:000000	Continuous function started.
X71:0000xx	X72:000001	The line is not defined in the control program.
X71:0000xx	X72:000002	The line test is already initialized.
X71:0000xx	X72:000003	EP line.
X71:0000xx	X72:000004	The line has user-written line control.
X71:0000xx	X72:000005	The line is active (deactivate it before testing).
X71:0000xx	X72:000006	A wrap test is in progress.
X71:0000xx	X72:000007	A PEP switch is in progress.
X71:0000xx	X72:000008	Line not associated with an LA attached and installed on this CCU.
X71:0000xx	X72:000009	Line is associated with an LA that is not installed or not attached.
X71:0000xx	X72:00000A	Line is associated with an LA that is not operative.
X71:0000xx	X72:00000B	Line specified is out of valid range.
X71:0000xx	X72:000011	The line test cannot be initialized.
X71:0000xx	X72:000012	Invalid function.
X71:0000xx	X72:000013	Another function is running.
X71:0000xx	X72:000014	The line is not enabled. To enable it, use subroutine X'40'.
X71:0000xx	X72:000021	The scanner is down.
X71:0000xx	X72:000022	The function is invalid for switched lines.
X71:0000xx	X72:000023	The Enable or Setmode failed.
X71:0000xx	X72:000024	The function is invalid for leased lines.
X71:0000xx	X72:000025	The function is invalid for SDLC lines.
X71:0000xx	X72:000026	An error occurred on receive operation.
X71:0000xx	X72:000027	An error occurred on transmit operation.
X71:0000xx	X72:000028	The function is invalid for BSC and SS lines.
X71:0000xx	X72:000029	Disable or X.21 DTE Clear Request failed.
X71:0000xx	X72:00002A	Change command failed.
X71:0000xx	X72:00002B	No hardware ID supplied.
X71:0000xx	X72:00002C	No polling character supplied.
X71:0000xx	X72:00002D	No addressing character supplied.
X71:0000xx	X72:00002E	No dialed digit supplied.
X71:0000xx	X72:00002F	No autodialed unit connected to the line.
X71:0000xx	X72:000030	No Setmode byte selected.
X71:0000xx	X72:000031	Severe error on receive. The line is disabled.
X71:0000xx	X72:000032	Severe error on transmit. The line is disabled.
X71:0000xx	X72:000033	The value specified in y (DATA==> wxxyz) is invalid.
X71:0000xx	X72:000034	The value specified in z (DATA==> wxxyz) is invalid.
X71:0000xx	X72:000035	The value specified in w (DATA==> wxxyz) is invalid.
X71:0000xx	X72:000036	The transmit buffer is empty.
X71:0000xx	X72:000041	No function in progress.
X71:0000xx	X72:000042	Buffer overflow.
X71:0000xx	X72:000043	Dialed digit overflow.
X71:0000xx	X72:000044	Invalid dialed digit entered. It must be a digit between X'0' and X'D'.
X71:0000xx	X72:000045	Polling character overflow.
X71:0000xx	X72:000046	Addressing character overflow.
X71:0000xx	X72:000047	Hardware ID overflow.
X71:0000xx	X72:00FFFF	Function or subroutine successfully performed.

NCP - Display of Storage

Use this function to display a 3745 storage halfword in MSA field l.

Table 15. NCP - Display of Storage

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **xxxxxx** FUNCTION==>**S** CCU LVL3==> **Y** SEND	To display storage address (function S or 11) MSA displays fields: f=storage address l=contents of the halfword at the specified address.
3	If more values are displayed, go to step 2.	
4	DATA==> FUNCTION==>**6** CCU LVL3==> **Y** SEND	To stop the function. There is no need to enter values in DATA==>

Table 16. MSA Field f and l Values for Display of Storage

MSA Field f	MSA Field l	Description
X71:xxxxxx X71:000000	X72:00yyyy X72:000000	xxxxxx = storage address yyyy = storage halfword. Invalid address entered.

NCP - Display of Register

Use this function to display 3745 register contents in MSA field l.

Table 17. NCP Display of Register

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **8002** FUNCTION==>**1** CCU LVL3==> **Y** SEND	To set on the Allow Additional Register Range bit (AARR) Table 18. To display general register address (function R or 12).
3	DATA==> **r0r0** FUNCTION==>**R** CCU LVL3==> **Y** SEND	Example: for register X'42' enter 4020. MSA displays fields: f=register address l=contents of registers.
4	**If** more values are displayed, go to step 3.	
5	DATA==> FUNCTION==>**6** CCU LVL3==> **Y** SEND	To end the function.
6	DATA==> **2** FUNCTION==>**1** CCU LVL3==> **Y** SEND	To set off the AARR bit Table 18.

Table 18. AARR Bit Setting Codes

MSA Field f	Description
X71:001080	AARR bit is set on.
X71:009080	AARR bit is still on.
X71:009000	AARR bit is set off.
X71:001000	AARR bit is still off.

NCP - Channel Discontact

Use this function to cause auto-network shutdown (ANS) of a particular host processor(s). ANS is a function of the NCP. The Channel Discontact function allows the operator to isolate the NCP from the host processor by effectively disconnecting the appropriate channel adapter(s). The Channel Discontact function is useful when the NCP is unable to detect a host processor failure. When ANS is invoked with the Channel Discontact function, all NCP sessions with the specific channel-attached host(s) are inactive.

Table 19. NCP - Channel Discontact

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **xxxx** FUNCTION==>**5** CCU LVL3==> **Y** SEND	To execute Channel Discontact on the specified channel adapter(s). xx=channel adapter identification within the range X'01' to X'3F'. LA = Logical address PA = Physical address Only the following bits are valids: **LA PA** 1... .... 0 5 .1.. .... 1 6 ..1. .... 2 7 ...1 .... 3 8 .... 1... .... 4 13 .... .1.. .... 5 14 .... ..1. .... 6 15 ....1 .... 7 16 .... 1... .... 8 1 .... .1.. .... 9 2 ....1. .... 10 3 ....1 .... 11 4 .... 1... 12 9 .... .1.. 13 10 ....1. 14 11 ....1 15 12

NCP - Address Trace

Use this function to start an address trace from the operator console. This function is available only if TRACE=YES is specified in the BUILD macro.

The trace can store up to four variables into a trace table. If you try to trace more than four variables, MSA fields f and l will display meaningless information.

You must specify, in an Address Compare function (see page 3) one or two addresses and a level 1 interrupt (I) as CCU action.

When the level 1 interrupt occurs, the address compare checks if the storage access that you specified in the Address Compare function was detected in one of the specified program levels that you specified in the Address Trace function. If it was, it stores up to four variables into the trace table.

Each variable can be either two consecutive halfwords of storage or the contents of a general register.

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **8002** FUNCTION==>**1** CCU LVL3==> **Y** SEND	To set on the Allow Additional Register Range bit (AARR).
3	DATA==> **1** FUNCTION==>**1** CCU LVL3==> **Y** SEND	To start the Address Trace function. MSA displays fields: f= X71:000001 l= X72:000000

4	DATA==> **p** FUNCTION==>**1** CCU LVL3==> **Y**
	SEND
		To enter the program level to be traced.
		p is any combination of:
		`1...  level 2 (enter 8)`
		`.1..  level 3 (enter 4)`
		`..1.  level 4 (enter 2)`
		`...1  level 5 (enter 1)`
		p must be within the range X'1' to X'F'.
		MSA displays fields:
		f= X71:000002
		l= levels (p)

5	To trace register data, go to step 9.	
6	To trace storage data, go to next step.	
7	DATA==> **xxxxxx** FUNCTION==>**S** CCU LVL3==> **Y** SEND	To display storage address (functions S or 11) MSA displays fields: f= X71:000003 (1 variable) X71:000004 (2 variable) X71:000005 (3 variable) X71:000006 (4 variable) l= storage address

Step	Procedure	Comments
8	Go to step 11.	
9	DATA==> **r0r0** FUNCTION==>**R** CCU LVL3==> **Y** SEND	To display general register address (function R or 12) Example: for register X'42' enter 4020. MSA displays fields: f= 71:000003 to 000006 depending on the number of variables entered. l= register address

10	DATA==> **00dd** FUNCTION==>**2** CCU LVL3==> **Y**
	SEND
	`Example:`
	`At step 9 --> DATA = 00E0 FUNCTION = R --> (0003 A48C)`
	`At step 10 --> DATA = 001C FUNCTION = 2 --> ( 1C)`
	`Address traced ----------> (0003 A4A8)`
		To enter the displacement that will be added to the content of the general register previously selected at step 9.
		dd is the displacement which must not exceed X'7F'
		The data traced is pointed to by the previous variable register traced (base) plus the displacement (dd).

11	To trace more variables, go to step 5.	
12	If you already entered four variables, go to step 14.	
13	DATA==> FUNCTION==>**6** CCU LVL3==> **Y** SEND	This step is not required if you entered four variables. NCP is notified that there is no more data to enter. There is no need to enter values in the DATA field
14	DATA==> FUNCTION==>**3** CCU LVL3==> **Y** SEND	To start the trace. There is no need to enter values in the DATA field. The address trace is now active
15	→ S A C SEND	To set a CCU Address Compare with one or two addresses and the LEVEL 1 INTERRUPT option. Each time there is an address compare hit, the Address Trace function will save in the trace table the variables that you entered.
16	Enter the address compare parameters. When the address compare is set, the count of interrupts processed is displayed in field f of the MSA.	
17	→ D E X SEND	To end the address trace and select the Data Exchange function.

Step	Procedure	Comments
18	DATA==> FUNCTION==>**6** CCU LVL3==> **Y** SEND	To end the trace. There is no need to enter value for DATA==>
19	DATA==> **2** FUNCTION==>**1** CCU LVL3==> **Y** SEND	To set off AARR bit.
20	→ R A C SEND	To cancel the Address Compare function.

Address Trace Table - Under NCP

To display the address trace table, do the following:

Table 20. Address Trace Table

Step	Procedure	Comments
1	F2 ■ D L O SEND	To display Menu 2 functions. To select display long function.
2	Enter L46 then SEND	To display the content of the local store register 46. The content of this register gives the address of the XDA (word direct addressable storage).
3	Add X'58' to the address found in L46 register.	
4	Enter S, then the new address, then SEND	
5	At that new address, there is a 4-byte pointer to HWE. Add an offset of X'04' to the HWE pointer to get the 4-byte address of the address trace block (ATB).	
6	Enter S, then the ATB address, then SEND	
7	The address trace block is then displayed. Add an offset of X'14' to the address trace block pointer to get the address of the last entry used. The address trace block is displayed in Figure 5 on page 105 and Table 21 on page 106.	

0(0) ATBPRMS Address of trace variable 1	
4(4) Address of trace variable 2	
8(8) Address of trace variable 3	
12(C) Address of trace variable 4	
16(10) ATBFRST Address of first entry in trace table (CXTATPF)	
ATBPRCT* Number of variables in each trace entry	
20 (14) ATBPREV Address of last entry used in trace table (CXTAPL)	
ATBCTL* Address trace control byte	
24(18) ATBLAST Address of last entry in trace table	
ATBLVLS* Program level to be traced	
28(1C) ATBCNTR Number of interrupts processed	30(1E) RESERVED
32(20) RESERVED Trace entry size	34(22) ATBENTSZ
* Indicates that a byte expansion follows	

Figure 5. Address Trace Block

Table 21. Byte Expansion of Address Trace Block

Offset/Field Name Hex Value	Bit Pattern	Contents
20(14) ATBCTL		Address trace control byte
	xxxx....	Activation: X'0' After trace activation: X'8' Level 2 X'4' Level 3 X'2' Level 4 X'1' Level 5
	xxxx	Address trace type variables (bit 4: Variable = 4... bit 7: Variable = 1) 1 = Register or displacement 0 = Storage
26(1A) ATBLVLS		Program levels to be traced
	X'80' X'40' X'20' X'10'	Level 2 Level 3 Level 4 Level 5

NCP - Activate Channel Adapter Trace

Use this function to trace channel adapter level-3 interrupts.

This function is available only if CATRACE=YES is specified in the BUILD macro.

Table 22. NCP - Channel Adapter Trace

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **xxxx** FUNCTION==> **8** CCU LVL3==> **Y** SEND	xx=channel adapter identification (within the range X'00' to X'FF'). Only the following bits are valid: LA = Logical address PA = Physical address **LA PA** 1... .... 0 5 .1.. .... 1 6 ..1. .... 2 7 ...1 .... 3 8 .... 1... .... 4 13 .... .1.. .... 5 14 .... ..1. .... 6 15 ....1 .... 7 16 .... 1... .... 8 1 .... .1.. .... 9 2 ....1. .... 10 3 ....1 .... 11 4 .... 1... 12 9 .... .1.. 13 10 ....1. 14 11 ....1 15 12 MSA field f indicates which of the channel adapter(s) has the trace functions active. Field f positions indicate the channel adapters.

To analyze the information stored in the channel adapter trace table, use one of the following:

- The CCU Display Long function to display the CCU storage. Refer to page 177.
- Take an NCP dump. Refer to *NCP, SSP, and EP Diagnosis Guide*. The address and the format of the trace table is given in *IBM Advanced Communications Function for Network Control Program; Emulation Program: Reference Summary and Data Areas*, LY30-5503.

NCP - Deactivate Channel Adapter Trace

Use this function to trace channel adapter level-3 interrupts.

This function is available only if CATRACE=YES is specified in the BUILD macro.

Table 23. NCP - Channel Adapter Trace

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **xxxx** FUNCTION==> **9** CCU LVL3==> **Y** SEND	xx=channel adapter identification (within the range X'00' to X'FF'). Only the following bits are valid: LA = Logical address PA = Physical address **LA PA** 1... .... 0 5 .1.. .... 1 6 ..1. .... 2 7 ...1 .... 3 8 .... 1... .... 4 13 .... .1.. .... 5 14 .... ..1. .... 6 15 ....1 .... 7 16 .... 1... .... 8 1 .... .1.. .... 9 2 ....1. .... 10 3 ....1 .... 11 4 .... 1... 12 9 .... .1.. 13 10 ....1. 14 11 ....1 15 12 MSA field f indicates which of the channel adapter(s) has the trace functions active. Field f positions indicate the channel adapters.

To analyze the information stored in the channel adapter trace table, use one of the following:

- The Display Long function to display the CCU storage. Refer to page 177.
- Take an NCP dump. Refer to *NCP, SSP, and EP Diagnosis Guide*. The address and the format of the trace table is given in *NCP/EP Reference Summary and Data Areas*.

NCP - ODLCSNAP Trace

The outboard data link control (ODLC) SNAP trace is enabled by setting either:

- A global indicator in byte direct addressables (XDA). Refer to *NCP: Data Areas*, LY43-0026.
- The SNAP Trace Active indicator in the ACBs for each line to traced.

These indicators are set by three methods:

1. Altering storage using the 'Display/Alter MOSS' function
2. Directly editing (zapping) the load module in the host library before loading it into the 3745.
3. Using the 'Data Exchange' (DEX) MOSS function. The procedure for this method is given below:

Step	Procedure	Comments
1	D E X SEND	To select data exchange function.
2	DATA==> **tinnnn** FUNCTION==>**04** CCU LVL3==> **Y** SEND Example: DATA = 132432 is for activation of the ODLCSNAP trace on the line and adapter interfaces associated with the line 2432.	Trace Request, t, is either: 0 Stop 1 Start Interface Type, i, is any bit combination of: 1... line .1.. adapter ..1. coupler ...1 trace i must be within the range X'1' to X'F'. The Interface Address, nnnn, is the line address. It is the same for the line, adapter slot, coupler slot, and trace slot.

NCP Scanner Interface Trace (SIT)

The scanner interface trace procedure under NCP is documented in the *NCP, SSP, and EP Diagnosis Guide*.

To use the MOSS for this trace refer to “Scanner Interface Trace (SIT)” on page 327.

EP - Line Test

The Line Test function is an optional function of the emulation program (EP), and is included during EP generation only if TEST=YES is specified in the BUILD definition statement.

Use this function to test a communication line via the operator console. The function consists of an initialization subroutine, a series of test subroutines and an end test subroutine. The CCB display function may be used to analyze the operation of a line.

Line test subroutines are described in Table 25. They do the following general tasks:

- Multiple line testing - Information about each line under test is stored in the CCB fields to allow concurrent testing of the communication lines.
- Line error checking - Data checks, feedback checks, dial errors, and SCF errors are dynamically displayed in MSA fields f and l, with an option to stop any line if an error occurs.
- Data translation - Transmit and receive data is translated from line code to PDF code when communication lines with redundancy checking are tested. Lines without redundancy checking must be tested in no-translate mode, and the buffer data must be entered in PDF code.

Notes:

1. When a line is in use by the Line Test function, all system commands are rejected.
2. When a line is in use by the system, it is not available to the Line Test function.
3. Always use X'8F' to end all the line test subroutines, to ensure availability of the line to the host.
4. Leased lines initially enabled by the access method must be re-enabled with subroutine X'80' (Table 25 only).

Table 24 (Page 1 of 2). EP - Line Test

Step	Procedure	Comments
1	F2 ■ D E X SEND	To display Menu 2 Functions and to select the data exchange function.
2	CA Selected, go to step 5.	
3	CA not selected, go to next step.	
4	DATA==> **xx00** FUNCTION==> **2** CCU LVL3==> **Y**	xx=channel adapter number (0-F) For CA error code, see Table 39 on page 125.
5	SEND	

Table 24 (Page 2 of 2). EP - Line Test

Step	Procedure	Comments
6	DATA==> **xxyy** FUNCTION==> **5** CCU LVL3==> **Y** SEND	xx= subroutine code yy= data xx and yy are described in Table 25.
7	Another line test or more data, go to step 6.	
8	No other line test and no more data to enter, go to next step.	
9	DATA==> **8Fyy** FUNCTION==> **5** CCU LVL3==> **Y** SEND	To end the test yy= sub-channel address.
10	DATA==> **80yy** FUNCTION==> **5** CCU LVL3==> **Y** SEND	Only if the line is initially enabled by the host access method. yy= sub-channel address.

To execute any of the subroutines described in Table 25, enter:

DATA==> xxyy FUNCTION==> 5 CCU LVL3==> Y

xx and yy values are given in the table below.

Table 25 (Page 1 of 3). Subroutines Used When Performing a Line Test

Subroutine Name	xx	yy	Description
Load Transmit Buffer Buffer 1 Buffer 2 Buffer 3 Dial digit buffer	 00 01 02 03	 data character data character data character dialed digit	To load the data character into buffer 1, 2, or 3, or the dialed digit into the dial digit buffer. Perform this subroutine as many times as you have data characters to enter (maximum is 20 per buffer). After the last one, enter X'99' in the yy operand. The next buffer location (vv) is displayed in MSA field l: X71:000000 X72:0000vv
Load Receive Compare Character compare character 1 compare character 2 compare character 3	 04 05 06	 compare character compare character compare character	To load a new receive compare character 1, 2, or 3. The old and the new receive compare characters are displayed in MSA field l. X'99' as compare character causes continuous transmission without any attempt to receive. The old (vv) and new (ww) characters are displayed in MSA field l: X71:000000 X72:00vvww
Swap Character Buffer 1 swap char. Buffer 2 swap char. Buffer 3 swap char.	 08 09 0A	 swap character swap character swap character	To load a new swap character for buffer 1, 2, or 3. The old (vv) and the new (ww) swap characters are displayed in MSA field l: X71:000000 X72:00vvww If incoming data compares on the buffer swap character 1, 2, or 3, the associated buffer is transmitted unconditionally.
Change Character Buffer 1 Buffer 2 Buffer 3 Dial buffer	 0C 0D 0E 0F	 position character position character position character position character	This subroutine is performed in two steps: 1. Specify the position of the character (yy) that you want to change in buffer 1, 2, or 3. 2. Enter the new character if the MSA field f displays X71:00FF00 and field l displays X72:000002. The old (vv) and new (ww) characters are displayed in MSA field l: X71:000000 X72:00vvww
Display Buffer buffer 1 buffer 2 buffer 3 dial buffer	 10 11 12 13	 buffer position buffer position buffer position buffer position	To display the buffer position indicated in yy (must be an even number). If the designated position is less than X'10', the 4 bytes of data beginning at the specified position are displayed in MSA fields f and l. If the position is equal to or greater than X'10', the last 4 bytes of the buffer are displayed.

Table 25 (Page 2 of 3). Subroutines Used When Performing a Line Test

Subroutine Name	xx	yy	Description
Display Receive Compare Character			To display the receive compare character 1, 2, or 3 in the two middle positions of MSA field l: Field l= X71:000000 Field f= X72:00..00
compare character 1	14	N/A	
compare character 2	15	N/A	
compare character 3	16	N/A	
Display Swap Character			To display buffer 1, 2, or 3 swap character, in the two middle positions of MSA field l: Field l= X71:000000 Field f= X72:00..00
buffer 1	18	N/A	
buffer 2	19	N/A	
buffer 3	1A	N/A	
Transmit Buffer			To transmit buffer 1, 2, or 3, until X'99' is recognized. The line is then set to receive mode.
buffer 1	20	sub-channel address	
buffer 2	21	sub-channel address	
buffer 3	22	sub-channel address	Use subroutine X'23' to chain buffers 1, 2, and 3 as one buffer. After transmission, the line is switched to receive mode.
buffers 1 to 3	23	sub-channel address	
Receive/Reply Using Buffers 1, 2, 3			To place the line in receive mode, and perform receive compare character checking. If a compare is found, the line is turned around to transmit buffers 1, 2, and 3.
buffer 1	40	sub-channel address	
buffer 2	41	sub-channel address	
buffer 3	42	sub-channel address	Use subroutine X'43' to chain buffers 1, 2, and 3 as one buffer.
buffers 1, 2, and 3	43	sub-channel address	
Enable Line	80	sub-channel address	To enable the line (DTR is raised on LIC interface).
Modify CCB Field			This subroutine is performed in two steps: 1. Specify the sub-channel address. 2. Enter the new data. The old (vv) and new (ww) data is displayed in MSA field l: X71:000000 X72:00vvww
CCBOPT	82	s/chan address - new data	
CCBOPT2	83	s/chan address - new data	
CCBSTMOD	84	s/chan address - new data	
CCBFLGB1 (BSC) or CCBSSC (S/S)	85	s/chan address - new data	The new data for CCBFLGB1 is the flag byte, and for CCBSSC it is the control byte.
CCBFLGB2 (BSC)	86	s/chan address - flag byte	

Table 25 (Page 3 of 3). Subroutines Used When Performing a Line Test

Subroutine Name	xx	yy	Description
Stop on Line Error	87	FF or 00	If yy=FF (on condition), the subroutine stops the tests on the line having errors. If yy=00 (off condition), the subroutine displays the error but does not stop the test.
Translate for Buffer 1, 2, or 3	8C	FF or 00	If yy=FF (no-translate mode), all data compare characters must be entered in PDF format. Data translation is not performed. If yy=00 (translate mode), all transmit and receive characters are translated for TAI, TAII, TTY1, and TTY2 devices. Other terminal types use no-translate mode.
Display Last Message in MSA Fields f and l	8D	none	To display the most current message. When no display information has been saved since the last request of subroutine X'8D', MSA fields f and l contain all zeros.
End Test	8F	sub-channel address	To end all testing and to disable the line.

Level 2 and Level 3 Display Codes

Level 2 codes provide information about the line being tested (Table 26), and level 3 codes about the selected subroutine (Tables 27 and 28).

Level 2 display codes are not displayed automatically in MSA fields f and l. To display them while performing subroutines X'20', X'23', X'40', X'43', X'80', X'86', or X'8F', use subroutine X'8D' only when the first digit displayed in field f is 2 (X71:2.....).

In Table 26, lowercase letters in fields f and l have the following meanings:

xx= channel adapter number (0-F)

yy= sub-channel address

zz= first 6 bits of the SES

vv= SCF

ww= PCF

Table 26. Level 2 Display Codes

MSA Field f	MSA Field l	Description
X71:01xxyy	X72:00FC00	The test is accepted for the line whose sub-channel address is displayed in field f (yy). The line has been enabled if current subroutine is other than X'8F'. If subroutine is X'8F', the line will have been disabled and the test ended.
X71:02xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing CHANGE command.
X71:03xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing MONITOR INCOMING command.
X71:04xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing DIAL command.
X71:05xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing RAISEDTR command.
X71:06xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing ENABLE command for auto-answer or leased line.
X71:07xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing ENABLE command for auto-call line.
X71:08xxyy	X72:zzvvww	Line error on the line whose address is in field f (yy) while processing RESETD command.
X71:09xxyy	X72:00vvww	Data check on emulation mode line whose address is in field f (yy) while processing transmit.
X71:0Axxyy	X72:00vvww	Data check on emulation mode line whose address is in field f (yy) while processing receive.
X71:0Bxxyy	X72:zzvvww	Line error detected while transmitting.
X71:0Cxxyy	X72:zzvvww	Line error detected while receiving.

Table 27. Level 3 Display Codes

MSA Field f	MSA Field l	Description
X71:x0FF00	X72:000001	'Monitor function for line errors' set.
X71:x0FF00	X72:000002	Enter new data character.
X71:x0FF00	X72:000003	Buffer-end (X'99') set.
X71:x0FF00	X72:000004	Translate-mode accepted.
X71:x0FF00	X72:000005	The line is enabled.
X71:x0FF00	X72:000006	Ending status presented.
X71:x0FF00	X72:000007	'Stop-on-line error' set.
X71:x0FF00	X72:000008	'No-translate mode' set.
X71:x0FF00	X72:000009	Test ended for the line.
x = 0: No level-2 display codes		
x = 2: Use subroutine X'8D' to display level-2 codes. These codes are described in Table 26.		

Table 28. Level 3 Error Codes

MSA Field f	MSA Field l	Description
X71:x0FFFF	X72:000000	Invalid subroutine.
X71:x0FFFF	X72:000001	Invalid buffer index.
X71:x0FFFF	X72:000002	Invalid sub-channel address (sub-channel address is not associated with a line specified during EP generation).
X71:x0FFFF	X72:000003	Line is active with a host command or error recovery. Line must be inactive for line test.
X71:x0FFFF	X72:000004	Invalid subroutine for start-stop lines.
X71:x0FFFF	X72:000005	Request cannot be performed because line is not operational.
X71:x0FFFF	X72:000006	Subroutine X'8F' (END TEST) was issued for a line that is not in test mode.
x = 0: No level-2 display codes		
x = 2: Use subroutine X'8D' to display level-2 codes. These codes are described in Table 26.		

EP/PEP - Display of Character Control Block (CCB)

Use this function to display a character control block (CCB) for any installed line. The selected CCB areas are displayed only once in MSA fields f and l. These fields also display information on the function progression (see Table 39).

Table 29. EP/PEP - Display of Character Control Block (CCB)

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	CA selected, go to step 5.	
3	CA not selected, go to next step.	
4	DATA==> **0x00** FUNCTION==> **2** CCU LVL3==> **Y**	0x=channel adapter number (0-F) For MSLA error code, see the last figure at the end of this section.
5	SEND	
6	DATA==> **xxyy** FUNCTION==> **6** CCU LVL3==> **Y** SEND	xx= CCB area to be displayed (see note 2 below). Display first CCB area X'38' to verify that CCBSUBCH is for the subchannel that you want to display. yy= subchannel address.
7	To display another or the same area, go to step 6.	
8	If no more CCB areas to display, no other action is required.	

Notes:

1. xx is the offset into the CCB of the 4 bytes to be displayed.
2. The CCB areas are defined in *NCP Data Areas*, LY30-5603.

EP/PEP - Line Trace and Scanner Interface Trace (SIT)

Use this function to start or stop a trace on one or all defined lines as well as on the scanner interface. The line trace and SIT functions are documented in *Emulation Program for IBM Communication Controllers: Installation, Resource Definition, and Diagnosis*, SC30-3338.

The level-2, level-3, and scanner interface traces are EP optional functions. They are included at EP generation time unless LINETRC=NO is specified in the BUILD macro.

After deactivating the trace, you may get a storage dump of the 3745 using dump utility or dynamic dump utility program.

The line trace table in the storage dump is as follows:

- The line trace table pointer is in the upper part of the storage, after the EP load module.
- Look at the right-hand side of the dump for the 'START TRACE'. The trace table pointer area starts four fullwords below.
- Line trace table pointer area:

  First word: Latest entry address in the trace table (this entry was written before terminating the line trace).

  Second word: Address of the trace table beginning.

  Third word: Address of the trace table upper limit.

The SIT buffer may be located as follows:

- The EP-TLNVT fields (beginning at X'840') contain SW pointer to the SIT control blocks in the order they were started.
- The SIT CCB contains pointers to the two SIT buffers at X'28' and X'2C'.
- The SIT data and buffer leader are described in *Advanced Communications Function for Network Control Program; Emulation Program: Reference Summary and Data Areas*.

Notes:

1. A trace can degrade EP performance.
2. To start a line or a scanner interface trace with the dynadump utility trace, the Trace Active bit must be off.
3. The format of the trace table entries is given in *NCP/EP Reference Summary and Data Areas*.
4. When you start a SIT, there may be a delay of up to 25 seconds in displaying the MSA fields.

Table 30. EP/PEP - Line Trace and Scanner Interface Trace (SIT)

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	CA Selected, go to step 5.	
3	CA not selected, go to next step.	
4	DATA==> **0x00** FUNCTION==> **2** CCU LVL3==> **Y**	0x=channel adapter number (0-F) For CA error code, see the last figure at the end of this section.
5	SEND	
6	DATA==> **WXY0zz** FUNCTION==> **4** CCU LVL3==> **Y** SEND	To start a trace. Values w, x, y, and zz are given on the next page.
7	DATA==> **wxy1zz** FUNCTION==> **4** CCU LVL3==> **Y** SEND	To stop a trace. Values w, x, y, and zz are given on the next page.

The following gives the values that you need to start a trace.

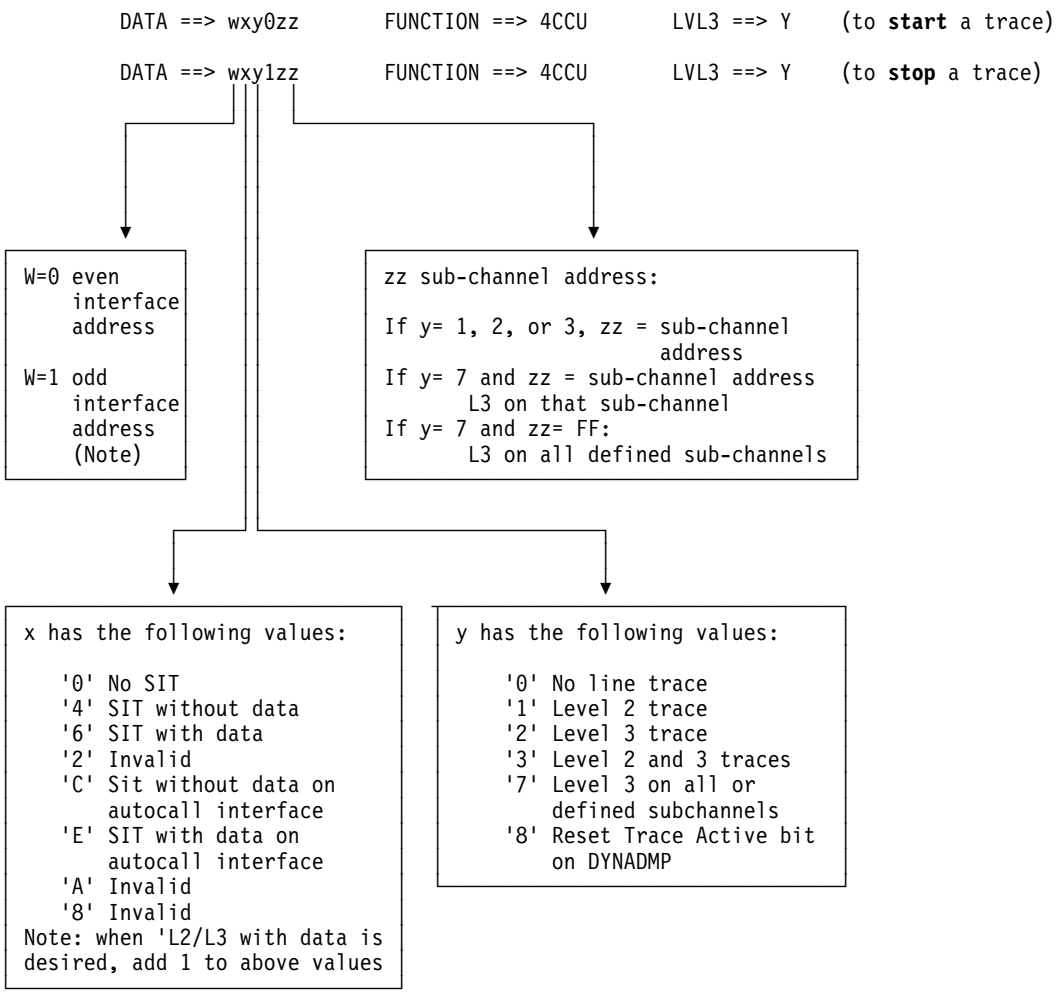


Figure 6. Required Parameters for Tracing

Note: If tracing online, w=0 will result in a trace of both transmit and receive.

If tracing during a Wrap Test, w=0 will result in tracing only the transmit address, and w=1 will result in tracing only the receive address. Both even and odd addresses may be traced simultaneously while performing a wrap.

Table 31. Display Codes for Line Trace and Scanner Interface Trace

MSA Field f	MSA Field l	Description
X71:0000xx	X72:00yyzz	The trace request was successful. xx = number of active SITs yy = number of traced lines on level 2 zz = number of traced lines on level 3.
X71:00FFFF	X72:00FFFF	An invalid trace was rejected.
X71:004001	X72:004001	Unable to service the SIT request.
X71:004002	X72:004002	Line not available.

EP/PEP - Present Status on Channel

Use this function to dynamically release a locked sub-channel without reinitializing the 3745 or the hosts. The sub-channel may have not been released because of an error condition. The ending status channel end (CE), device end (DE), and unit check (UC) are presented to the host for the selected sub-channel.

Notes:

1. Sense command X'04' from the host after ending status of CE, DE, or UC will receive an Equipment check.
2. Make sure that the sub-channel that you are releasing is not in a valid operation. When bit 5 of CCBCMD is on, the sub-channel is not in a valid operation. To display CCBCMD use EP function Display of CCB.

Table 32. EP/PEP - Present Status on Channel

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **3xyy** FUNCTION==> **2** CCU LVL3==> **Y** SEND	x= logical channel adapter number (0-F) yy= sub-channel address. For 'x' and 'yy' values, refer to the table on page 122.

Table 33. 3745 Channel Adapter Logical and Physical Addresses

Physical Address (PA)	Logical Address (LA)		x and yy Values Required to Present Status on Channel	
	Models 130, 170, 17A	Models 210, 310, 410, 610 21A, 31A, 41A, 61A	X=(0 to F)	YY=(00 to FF) See Note Below
1		8	8	
2		9	9	
3		10	A	
4		11	B	
5	0	0	0	
6	1	1	1	
7	2	2	2	
8	3	3	3	
9		12	C	
10		13	D	
11		14	E	
12		15	F	
13		4	4	
14		5	5	
15		6	6	
16		7	7	

Note: The sub-channel address (yy) is the one you can find in the PEP generation deck (from VTAM LST). It is defined in the ADDRESS keyword of the LINE statement.

```
Example:     L072 LINE ADDRESS=(072,26-2)

                   072 is the line number
                    26 is the sub-channel address
                     2 is the CA logical address
```

Table 34. MSA Fields f and l Values for Present Status on Channel

MSA Field f	MSA Field l	Description
X71:000000	X72:000300	Ending status CE, DE, UC presented to the host.
X71:00FFFF	X72:000301	Rejected.

EP - Display of Storage

Use this function to display two halfwords of storage in MSA fields f and l (Table 36).

Table 35. EP - Display of Storage

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **xxxxxx** FUNCTION==> **1** CCU LVL3==> **Y** SEND	xxxxxx= storage address.
3	To display more halfwords, go to step 2.	
4	If no more halfwords to display, no other action is required.	

Table 36. MSA Field f and l Values for Display of Storage

MSA Field f	MSA Field l	Description
X71:00FFFF	X72:00FFFF	Invalid address or function.
X71:00xxxx	X72:00yyyy	xxxx = first storage halfword yyyy = second storage halfword.

EP/PEP - Channel Adapter Reset

Use this function to simulate a system reset from any attached channel if the access method terminates abnormally (abend) and you have to release the sub-channels and lines.

The Channel Adapter Reset function resets only the sub-channels and lines associated with the channel adapter that you specified, and has no effect on the normal operation of other channels.

Table 37. EP/PEP - Channel Adapter Reset

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **1xyy** FUNCTION==> **2** CCU LVL3==> **Y** SEND	x= channel adapter number (0-F) yy= 00 no status presentation yy= FF CE/DE/UC presented on all associated sub-channels.
3	When the channel adapter is reset, the MSA displays the following: field f: X71: 000000 field l: X72:00010x For other codes, see later in this section.	

EP - Subchannel Switching (MSLA)

Use this function to switch sub-channel/line associations when the host access method does not issue disable commands. When a line is used with an access method that does not issue disable commands, the line cannot be accessed by another sub-channel via host-issued commands.

Criteria regulating sub-channel/line switching are as follows:

- The subchannels to which the line can be associated must be identified at generation time.
- The switch is performed only if the line does not have an active command other than ENABLE or PREPARE.

The sub-channel switching function does not change the physical state of the line. For example, an enabled line remains enabled.

Table 38. EP - Sub-channel Switching (MSLA)

Step	Procedure	Comments
1	F2 ■ D E X SEND	To select the data exchange function.
2	DATA==> **2xyy** FUNCTION==> **2** CCU LVL3==> **Y** SEND	x= channel adapter number (0-F) yy= sub-channel address.
3	When the switch is performed, the MSA displays the following: field f: X71: 000000 field l: X72:000202 or X72:000203 For other codes, see later in this section.	

Table 39. MSLA and Select CA Function Error Codes

MSA Field f	MSA Field l	Description
X71:00FFFF	X72:00FFFF	Invalid subroutine.
X71:00FFFF	X72:00CACA	Invalid channel adapter.
X71:00FFFF	X72:00CA00	Requested CA not available.
X71:00FFFF	X72:000201	Sub-channel entered outside the HI/LO range.
X71:00FFFF	X72:000202	Non-MSLA USCCB or NCP line test function active for the line.
X71:00FFFF	X72:000203	Line is currently active.
X71:00FFFF	X72:000204	MSLA USCCB currently active.
X71:000000	X72:00000x	Channel adapter x selected (x = channel adapter number 0-F).
X71:000000	X72:00000x	Channel adapter x selected.
X71:000000	X72:00010x	Channel adapter x reset.
X71:000000	X72:00010x	Channel adapter x reset.
X71:000000	X72:000201	Sub-channel is already using the line.
X71:000000	X72:000202	Successful switch.
X71:000000	X72:000203	Switch is performed - ENABLE or PREPARE aborted.

Disk Functions (DIF) and Microcode Changes

This section describes:

How to manage your disk and diskettes (using the MOSS DIF function as explained in the next table).
How to perform a microcode change.
How to restore the disk from diskettes.

- To perform the **DIF**, MOSS must be **alone** or **offline**.
  - To set MOSS alone, go to page 12.
  - To set MOSS offline, go to page 243.

DIF Options	Go to page
Save a disk onto diskettes to: • Create a backup copy of the initial diskettes. • Copy the MOSS disk files after new microcode fixes have been applied. • Copy the disk after changing link IPL ports, CDF, and control program procedures. This will enable you to restore the disk from diskettes if the disk becomes unusable due to wrong information on the disk or physical damage.	136
Format (initialize) a diskette.	144
Power Off the disk/diskette.	145

- To perform a **microcode change**, you must start from the control panel. Refer to “Diskette Information” and “Installing a Microcode Engineering Change (EC)” on page 129.
- To **restore** a disk from diskettes, refer to page 138.

  Restore the disk if:

  - You suspect a disk problem.
  - Your disk has been replaced.
  - You suspect that the new release or the latest EC update in your files has disturbed your applications.

Selecting Disk Functions


```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                         DISK FUNCTION SELECTION

 - SELECT ONE OF THE FOLLOWING FUNCTIONS ==>


      2 = SAVE DISK ONTO DISKETTES

      6 = DISKETTE INITIALIZATION

      7 = POWER OFF DISK/DISKETTE


===>

F1:END           F3:ALARM
```

From the above screen:

If you selected option:

- **2 = SAVE DISK ONTO DISKETTE**, go to page 136.
- **6 = DISKETTE INITIALIZATION**, go to page 144.
- **7 = POWER OFF DISK/DISKETTE**, go to page 145.

Diskette Information

- Use PC* diskettes with part number 2HC 6109660 or equivalent (double-sided, high-capacity, size 5.25 in.).
- The diskettes must be compatible with the MOSS disk format. Use either:
  - The five backup diskettes for a 3745, or
  - Diskettes formatted with the Diskette Initialization option described under “Formatting a Diskette” on page 144. Label the diskettes and their envelopes to indicate clearly what they are.

All diskettes for initial installation, new engineering changes (ECs), or microcode fixes (MCFs) are supplied by IBM in two sets.

If you have a Model 210, 310, 410, or 610, you receive 10 diskettes: two sets of five diskettes, one set labeled "normal" and one set labeled "backup."

If you have a Model 21A, 31A, 41A, or 61A, you receive 12 diskettes: two sets of six diskettes, one set labeled "normal" and one set labeled "backup."

Use the *normal* diskettes for the first installation or first application of microcode fixes, then use the *backup* set for the saving procedure.

Installing a Microcode Engineering Change (EC)

Before starting a new EC installation, ensure that the disk contents have been saved to a current set of backup diskettes. These diskettes are used to restore the disk if the installation of the new EC failed or disturbed applications.

The installation of new microcode can only be done from diskette.

If the disk has just been formatted, the first EC installation must be done with the “Restoring the Disk from Diskettes” function. Refer to page 138 for details.

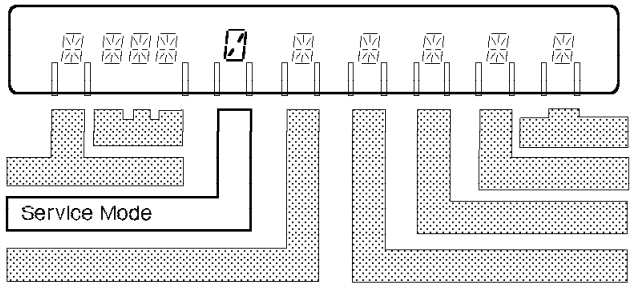
Installing a microcode engineering change requires the following actions to be performed in sequence:

- Preparing for installation (steps 1 to 8)
- Checking the diskettes (steps 9 to 11)
- Copying the diskettes to the disk (steps 12 to 16)
- Applying any microcode fixes contained in the new microcode EC diskettes (steps 17 and 18).

Step 1 Power on the local console.

Step 2 Select the service mode on the control panel.

1) Press **Service Mode** repeatedly until **0** is displayed.

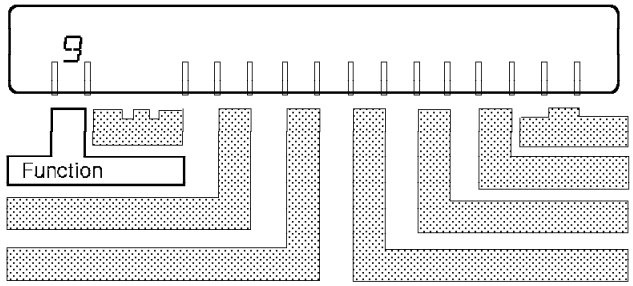


2) Press **Validate**.

Step 3 Insert the first (primary) diskette from the set labeled "normal".

Step 4 Select the function:

1) Press **Function** repeatedly until **9** is displayed.



2) Press **Validate**.

Step 5 If the 3745 is powered off, press **Power On Reset** on the control panel.
If it is already powered on, go to the next step.

Step 6 MOSS IML starts. Wait a few minutes until the MOSS is IMLed, then the following screen is displayed:

```
                    DISKETTE MODE


     - SELECT ONE OF THE FOLLOWING FUNCTIONS  ==>

          1 = GENERAL IPL
          2 = DISK FUNCTIONS




 ===>
```

Step 7 Select option 2 (DISK FUNCTIONS) and press ENTER, then the following screen is displayed:

```
                    DISK FUNCTION SELECTION


     - SELECT ONE OF THE FOLLOWING FUNCTIONS  ==>

          1 = EC MICROCODE INSTALLATION
          3 = RESTORE DISK FROM DISKETTE




 ===>

 F1:END
```

If one of the following hex codes is displayed on the control panel:

- **0E4**: The diskette may be wrongly inserted (upside down). Insert it correctly.
- **14A**: The diskette is missing. Insert the primary diskette.

Step 8 Select function 1 (EC MICROCODE INSTALLATION) and press ENTER.

The the following screen **may** be displayed **if is necessary to format** the remainder of the disk:

```
                    EC MICROCODE INSTALLATION


  - INCREASING DISK SIZE (UP TO 80MB) - PLEASE WAIT SEVERAL MINUTES
```

If during the process some tracks are found to be in error, the screen shown on page 145 may be displayed. Refer to that page for more details.

This screen is displayed:

```
                    EC MICROCODE INSTALLATION


  - MOUNT PRIMARY DISKETTE, THEN PRESS SEND




 ===>

 F1:END                                          F6:QUIT
```

From the above screen:

- If you have already inserted the primary diskette in step 3, press SEND.
- Otherwise, mount the primary disk, and press SEND.

Step 9 Check the 'EC NUMBER' shown at **A** .

- If it is the correct one, type Y then press ENTER.
- If it is not the correct number, enter N; then insert the correct primary diskette.

Ignore 'INTERNAL ID' at **B** . Leave as it is.

```
                        EC MICROCODE INSTALLATION

 MOUNTED PRIMARY DISKETTE IDENTIFICATION:

       EC NUMBER    = 198198 A
       INTERNAL ID  =    B

 - PLEASE CONFIRM YOUR SELECTION (Y OR N) ==>




 ===>

 F1:END           F3:ALARM          F6:QUIT
```

EC numbers are compared and the program checks if the diskette belongs to the set. During the diskette checking, the following message is displayed:
PRIMARY DISKETTE CHECKING IN PROGRESS

Wait a few minutes until the following message is displayed:
MOUNT SECONDARY DISKETTE, THEN PRESS ENTER

Step 10 Insert the second (secondary), third, fourth, and fifth diskettes in order. Do not forget to press SEND after you have inserted a diskette.

Step 11 If all the diskettes match, go to step 12.

If any of the diskettes do not match, it is because either the EC number or the internal identifier of the subsequent diskettes does not match that of the primary diskette.

```
                        EC MICROCODE INSTALLATION

 DISKETTES DO NOT BELONG TO THE SAME SET:

      PRIMARY   EC NUMBER : 198198 INTERNAL ID: 00:20:38  B
      SECONDARY EC NUMBER : 198198 INTERNAL ID: 00:20:38
      THIRD     EC NUMBER : 198198 INTERNAL ID: 00:00:00  B
 - PRESS SEND




 ===>

 F1:END            F3:ALARM          F6:QUIT
```

The above screen:

Shows a mismatch between the primary and third diskette internal identifiers (**B**).
In this case, insert the correct diskette and then press SEND.

Step 12 Insert the primary diskette, then press SEND.

Wait until the primary diskette is copied.

If new formatting of the disk is necessary due to an extension of the disk size/capacity, the following message may be displayed:
COPY FILE IN PROGRESS - PLEASE WAIT SEVERAL MINUTES -

Step 13 Insert the secondary diskette, then press SEND. Repeat the procedure for the third, fourth, and fifth diskettes.

The following screen is displayed:

```
                        EC MICROCODE INSTALLATION


 - MOUNT FIFTH   DISKETTE, THEN PRESS SEND

      WARNING: PRESSING F1 CAUSES MOSS DOWN
                  AND DISK DATA DESTROYED




             EC INSTALLATION FROM FIFTH DISKETTE IN PROGRESS

 F1:END
```

Note: For Models 21A, 31A, 41A, and 61A there is a sixth diskette to mount and copy.

When the EC installation is completed, the following screen is displayed:

```
                        EC MICROCODE INSTALLATION

 EC xxxxxx CORRECTLY INSTALLED
 - POWER OFF THEN POWER ON THE 3745
 - PERFORM MOSS IML FROM CONTROL PANEL WITH FUNCTION 1









 ===>

 F1:END        F3:ALARM
```

Step 14 Remove the last diskette then power off the 3745.

Step 15 Wait 10 seconds. On the control panel, press **Function** repeatedly until 1 is displayed then press **Validate**.

Step 16 Power on the 3745. MOSS IML starts.

When the MOSS IML is finished:

- **F0E** is displayed on the control panel.
- The 3745 CA Interface Display screen is displayed on the MOSS console.

If it is not necessary to apply MCFs, the EC install procedure is finished.

An EC to the microcode may also contain microcode fixes (MCFs).

Step 17 Once you have installed the new release, apply any MCFs (if any), which are now on your disk, by selecting the MCF function, option 2 (Automatic Upgrade of the Microcode):

If no MCFs exist, you will get the message MCF FILE EMPTY. If there are non-applied MCFs, they will automatically be applied on the disk.

If MCFs are applied

- **IML the MOSS**, this is a mandatory operation.
- **IML the scanners** (MOSS IMS function), this is a mandatory operation only if an MCF applies to scanners.

For more information on the MCF function, refer to page 235.

Step 18 Once you have installed the new EC and applied MCFs, you should save your disk on your backup diskettes. Go to “Saving Disk onto Diskettes” on page 136.

If you have any diskette problems, use the set of diskettes labelled "normal" and request a second set from IBM.

Saving Disk onto Diskettes

This function should be used to:

- Create a backup copy of normal (initial) diskettes.
- Copy the MOSS disk files after new microcode fixes have been applied.
- Copy the disk after changing link IPL ports, CDF, and control program procedures.

This will enable you to restore the disk from diskettes if the disk becomes unusable due to bad information on the disk, or physical damage.

D I F SEND . 2 SEND

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        SAVE DISK ONTO DISKETTES

 DATE: 01/01/83 (MM/DD/YY)
 - ENTER SAVE ID (FROM 1 TO 8 CHARACTERS) ==> C


 - WARNING : YOU MUST SAVE THE COMPLETE SET OF DISKETTES




===>

F1:END       F3:ALARM         F6:QUIT
```

From the above screen:

- Enter a save identifier **C**. Each diskette of the set is labelled with the same ID. It will help you identify the level of the diskettes.
- Press SEND.
- From now on, follow the procedure on the screen carefully. You will have to save the complete set of diskettes.

When you have saved a diskette, label it as follows:

- The first one: PRIMARY
- The second one: SECONDARY
- The third one: THIRD
- The fourth one: FOURTH
- The fifth one: FIFTH.
- For Models 21A, 31A, 41A, and 61A, the sixth one: SIXTH.

When all diskettes are saved, the following screen is displayed:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        SAVE DISK ONTO DISKETTES



 DISK CORRECTLY SAVED. TAKE NOTE OF THE FOLLOWING INFORMATION:
      DATE        =   mm/dd/yy (MM/DD/YY)
      EC          =   xxxxxx
      SAVE ID     =   yyyyyy
      INTERNAL ID =   09:27:01
 THEN PRESS SEND


===>

F1:END        F3:ALARM
```

Do not forget to note on the diskettes and diskette envelopes the information displayed on this screen: date, EC number, save, and internal identifiers.

Restoring the Disk from Diskettes

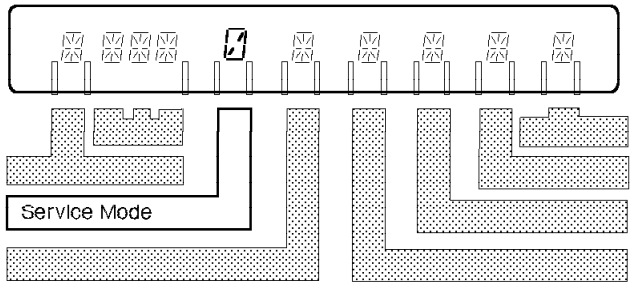
IMPORTANT NOTES:

1. **Unless the MOSS is ALONE you must do a GENERAL IPL of the 3745 after using this procedure**. To set the MOSS alone see page “How to Set the MOSS Alone” on page 12.
2. **Restoring the disk from diskettes can only be done in diskette mode**, and requires the following actions to be performed in sequence:
   - Preparing for restoration in diskette mode (steps 1 to 6)
   - Checking the diskettes (steps 7 to 10)
   - Copying the diskettes to the fixed disk (steps 11 to 14).
3. You can restore the fixed disk only from the diskettes that you created using the Save Disk onto Diskettes option (page 136).

Step 1 Power on the local console and go to the control panel.

Step 2 Select the service mode on the control panel:

1) Press **Service Mode** repeatedly until **0** is displayed.

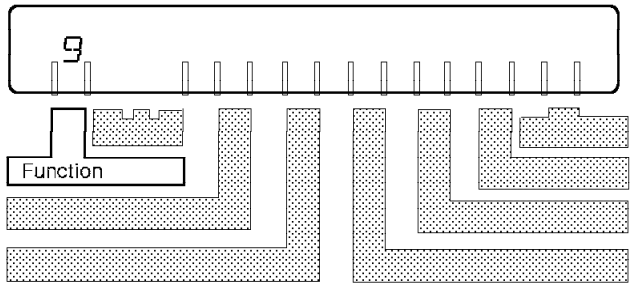


2) Press **Validate**.

Step 3 Insert the primary diskette from the set labeled "normal".

Step 4 Select the function:

1) Press **Function** repeatedly until **9** is displayed.



2) Press **Validate**.

Step 5 If the 3745 is powered off, press **Power On Reset** on the control panel.
If it is already powered on, go to the next step.

MOSS IML starts. Wait a few minutes until the MOSS is IMLed, then the following screen is displayed:

```
                    DISKETTE MODE


     - SELECT ONE OF THE FOLLOWING FUNCTIONS  ==>

          1 = GENERAL IPL
          2 = DISK FUNCTIONS




 ===>
```

Step 6 Select option 2 (DISK FUNCTIONS), press ENTER, and the next screen is displayed:

```
                    DISK FUNCTION SELECTION


     - SELECT ONE OF THE FOLLOWING FUNCTIONS  ==>

          1 = EC MICROCODE INSTALLATION
          3 = RESTORE DISK FROM DISKETTE




 ===>

 F1:END
```

If one of the following hex codes is displayed on the control panel:

- **0E4**: The diskette may be wrongly inserted (upside down). Insert it correctly.
- **14A**: The diskette is missing. Insert the primary diskette.

Step 7 Select option 3 = RESTORE DISK FROM DISKETTES. The the following screen **may** be displayed **if is necessary to format** the remainder of the disk:

```
                    EC MICROCODE INSTALLATION


  - INCREASING DISK SIZE (UP TO 80MB) - PLEASE WAIT SEVERAL MINUTES
```

If during the process some tracks are found to be in error, the screen shown on page 145 may be displayed. Refer to that page for more details.

The following screen is displayed:

```
                    RESTORE DISK FROM DISKETTE


  - MOUNT PRIMARY DISKETTE, THEN PRESS SEND



 ===>
 F1:END                                          F6:QUIT
```

Insert the primary diskette and press SEND.

The following screen in displayed:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        RESTORE DISK FROM DISKETTES


 MOUNTED PRIMARY DISKETTE IDENTIFICATION :

      CREATED ON  = mm/dd/yy /MM/DD/YY)  D
      SAVE ID     = yyyyyy    E
      INTERNAL ID = 00:20:38  F
      EC LEVEL    = xxxxxx

 - PLEASE CONFIRM YOUR SELECTION (Y OR N) ==>


===>

F1:END      F3:ALARM       F6:QUIT
```

D Is the saving date.

E Is the save identification you entered when you saved the fixed disk onto the diskettes.

F Is the internal save identification automatically created during the save.

Step 8 Check that the displayed information matches the information you wrote on the diskette envelopes:

- If they match, enter Y and press SEND.
- If they do not match, enter N; then insert the correct primary diskette.

Step 9 Insert the secondary diskette, then the third, fourth, and fifth diskettes.

Note: For Models 21A, 31A, 41A, and 61A there are six diskettes to be checked in this step. Press SEND after you have inserted each diskette.

- If all the diskettes match, go to the next step.
- If the secondary, third, fourth, or fifth diskettes do not match the primary diskette, the following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        RESTORE DISK FROM DISKETTES


 DISKETTES DO NOT BELONG TO THE SAME SET

                CREATED    SAVE ID   INTERNAL ID   EC LEVEL

   PRIMARY     00/00/00    xxxxxxxx    xxxxxxxx     A4720
   SECONDARY   00/00/00    yyyyyyyy    yyyyyyyy     A4721


 - PRESS SEND


===>

F1:END       F3:ALARM       F6:QUIT
```

When all the diskettes are correctly checked, the disk restoration starts.

Step 10 Remove the write protect tab (if present) from the primary diskette, insert the diskette, then press SEND.

When the primary diskette is copied, repeat the procedure with the secondary, third, fourth, and fifth diskettes.

When the restoration is completed, the following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        RESTORE DISK FROM DISKETTES

 DISK CORRECTLY RESTORED

SELECT ONE OF THE NEXT ACTIONS:

 - IF YOU HAVE DONE CONCURRENT DISK REPLACEMENT,      A
   PERFORM MOSS IML FROM CONTROL PANEL.

 - IN ALL OTHER CASES, POWER OFF THE 3745             B
   AND THEN DO POWER ON.

===>

F1:END      F3:ALARM
```

Step 11 Remove the last diskette then, as shown on the above screen, select one of the following actions:

- **A When the disk restore function is performed by the service representative**:
  Do not power off the 3745 if you have replaced a disk during a concurrent maintenance.

  Perform only MOSS IML from the control panel (function 1 and service 0).

- **B When the disk restore function is performed by the customer from a backup copy**:

  a. Power off the 3745.
  b. Wait 10 seconds.
  c. On the control panel, press **Function** repeatedly until 1 is displayed then press **Validate**.
  d. Power on the 3745. MOSS IML starts.

     When the MOSS IML is finished:
     – **F0E** is displayed on the control panel.
     – The 3745 CA Interface Display screen is displayed on the MOSS console.

Step 12 After restoring the disk, the default password is **IBM3745**. You can refer to “Passwords (PSW)” on page 265 to update the password.

Step 13 After restoring the disk from diskette, the NCP is no longer accessible. You must reload NCP. The RLA procedure (remote loading activation) may be used if the restore disk is performed on a remote controller.

This ends the procedure "Restoring the Disk from Diskettes".

Formatting a Diskette

D I F SEND . 6 SEND

Follow the procedure on the screen carefully.

If the diskette formatting (initialization) ends without errors, the message: DISKETTE INITIALIZATION SUCCESSFULLY COMPLETED is displayed.

If there are errors, the following message is displayed:
DISKETTE INITIALIZATION UNSUCCESSFULLY COMPLETED
with the number of tracks in error. When this message is displayed, **you must press F1**, then the error and its associated alarm will be recorded for further analysis.

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK FUNCTIONS

                        DISKETTE INITIALIZATION


 DISKETTE INITIALIZATION  UNSUCCESSFULLY  COMPLETED:

      NUMBER OF TRACK(S) IN ERROR WHILE FORMATTING:  000
      NUMBER OF TRACK(S) IN ERROR WHILE CHECKING  :  001

 WARNING: DO NOT USE THIS DISKETTE TO SAVE YOUR DISK



===>

F1:END        F3:ALARM        F6:QUIT
```

- Remove the diskette and make sure that it is not damaged.
- Insert the diskette and make sure that:
  - It is correctly inserted.
  - The drive latch is correctly closed.
- Repeat the formatting procedure. If the procedure is again unsuccessful, repeat the procedure with a new diskette.
  - Discard the diskette that did not format correctly.
  - If the problem persists: ☎

Powering Off Disk/Diskette (Models 130, 150, 160, 170, and 17A)

This function is used by the IBM service representative to manually power off the disk/diskette drive for maintenance purposes.

Messages on Installing an EC and Restoring Disk from Diskette

The following screen is displayed when the remainder of the disk has been reformatted to its maximum 80 MB.

```
                    ALTERNATE TRACK ASSIGNMENT MAP

 DEFECTIVE        ALTERNATE        DEFECTIVE        ALTERNATE
 TRACK            TRACK            TRACK            TRACK

 HEAD-CYLINDER    HEAD-CYLINDER    HEAD-CYLINDER    HEAD-CYLINDER

 1  0664          0  0001          4  0684          1  0001
 4  0685          2  0001          4  0686          ENTRY NOT USED
 ENTRY NOT USED   ENTRY NOT USED   ENTRY NOT USED   ENTRY NOT USED
 ENTRY NOT USED   ENTRY NOT USED   ENTRY NOT USED   ENTRY NOT USED

 FORMAT ERRORS: xx   ID ERRORS: xx   DATA ERRORS: xx

===>

F1:END                              F6:QUIT        F8:FORWARD
```

Press F1 or F6.

Return to the step you left and continue installing the EC microcode or restoring the disk.

NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY

Cause: The disk has been initialized without any defective tracks.

Action: This message is in the sequence of events described under the message INCREASING IN DISK SIZE - PLEASE WAIT SEVERAL MINUTES on page 146.

Return to the step you left and continue installing the EC microcode or restoring the disk.

HARD DISK FAILURE, PLEASE CHANGE YOUR DISK

Cause: Unrecoverable errors were found on the last part of the disk. There is not enough usable disk space to install the new microcode.

Action: Contact your service representative to have the disk replaced.

NOT ENOUGH SPACE AVAILABLE ON DISK - CHANGE YOUR DISK

Cause: The physical disk capacity is 45MB and cannot support the new microcode EC.

Action: Contact the service representative to have the disk replaced.

INCREASING IN DISK SIZE (80MB) - PLEASE WAIT SEVERAL MINUTES

Cause: Only for Models **31A and 61A**: the physical disk capacity is 80MB but it is not yet fully formatted.

Action: During or after the formatting is performed, one of the following messages may be displayed:

- **READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES**
- **FORMAT COMPLETED, NO DEFECTIVE TRACK, ALTERNATE ASSIGNMENT MAP EMPTY**

Return to the step you left and continue installing the EC microcode or restoring the disk.

OPTION REFUSED: PERFORM RESTORE DISK FROM DISKETTE

Cause: The disk has been reformatted, and the option EC Microcode Installation selected. The EC Microcode can only be installed on a formatted but empty disk using the Restore Disk from Diskette function.

Action: Select the Restore Disk from Diskette function to install the EC Microcode.

READ CHECKING IN PROGRESS - PLEASE WAIT SEVERAL MINUTES

Cause: Only for Models **31A and 61A**: the disk is being reformatted up to 80MB, and read checking is in progress.

Action: This message is in the sequence of events described under the message INCREASING IN DISK SIZE (UP TO 80 MB)- PLEASE WAIT SEVERAL MINUTES on page 146.

Wait for the next message or next screen.

Disk IPL Information (DII)

Use the DII function to:

1. Display the name of the control program that is running
2. Display the name of disk load modules with associated status which have been saved with the option 'SAVE MOD=YES' of the command 'VARY ACT'
3. Display the name of the control program dump with time and date
4. Display the name of the active disk load module
5. Set or reset the active disk load module
6. Change the setting of the automatic dump/load options which have been set with the option 'DUMPLOAD=YES' of the command 'VARY ACT'
7. Purge the NCP/PEP dump
8. Copy the NCP/PEP load module from the hard disk to the diskette
9. Copy the NCP/PEP load module from the diskette to the hard disk to allow loading and activation of NCP/PEP on a remote 3745 through switched subarea links for use with remote load activation (RLA) function
10. Display Timed IPL information
11. Rename Load Modules.

For Models 17A, 21A, 31A, 41A, and 61A:

NCP dumps are automatically transferred to the larger MOSS-E disk on the on the service processor.

They are accessed using the MOSS-E function 'Transfer NCP Dump' in the Service Processor Problem Management menu.


```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION


                 1 - DISK IPL INFORMATION

                 2 - DISKETTE MANAGEMENT

                 3 - TIMED IPL INFORMATION

                 4 - RENAME LOAD MODULE MANAGEMENT

 SELECT AN OPTION THEN PRESS SEND ===>


 ===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

- Select option 1 (DISK IPL INFORMATION) to perform actions 1 to 6 (listed at the top of the page). Go to pages 148 through 157.
- Select option 2 (DISKETTE MANAGEMENT) to perform actions 7 or 8 (listed at the top of the page). Go to page 157.
- Select option 3 (TIMED IPL INFORMATION) to perform action 9 (listed at the top of the page). Go to page 167.
- Select option 4 (RENAME LOAD MODULE MANAGEMENT) to perform action 10 (listed at the top of the page). Go to page 174.

Disk IPL Information (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

 CONFIGURATION: SINGLE

                     CCU-A
CP RUNNING:
DISK CONTENTS:               SAVE DATE/TIME
   LOAD MODULES:     PETITB4 (mm/dd/yy hh:mm:ss)
                     RPETITB (mm/dd/yy hh:mm:ss)

   DUMP:
AUTO DUMP/LOAD:      YES       A
ACTIVE LOAD MODULE:  RPETITB   B

===>

F1:END F2:MENU2 F3:ALARM F4:CHG DMP/LD  F5:PURGE DMP F7:DATE F8:CHG ACT LM
```

From the above screen:

- Press F4 to **change** the setting of the auto dump/load option. If YES is displayed (**A**) and if a load module is active (**B**), on the next abend, the control program will be loaded from the disk and not from the host.
- Press F5 to **purge** the NCP dump. You will be asked to confirm your intention to purge the dump.
- Press F6 to return to the "DISPLAY IPL INFORMATION" screen.
- Press F7 to **display** either the date and time the load module was generated (GEN) or saved (SAVE).
- Press F8 to **activate/deactivate** a load module. (Go to “Load Module Activation/Deactivation” on page 151.)
- Press SEND to refresh the information displayed on this screen.

Disk IPL Information (Models 410, 41A, 610, and 61A)


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


       C                    D
CONFIGURATION: TWIN         OPERATING MODE: DUAL

                     CCU-A                          CCU-B
CP RUNNING:          xxxxxxxx                       xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME                 SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      Yes                          Yes
ACTIVE LOAD MODULE:  xxxxxxxx


===>

F1:END F2:MENU2 F3:ALARM F4:CHG DMP/LD  F5:PURGE DMP F7:DATE F8:CHG ACT LM
```

From the above screen:

- Press F4 to **change** the setting of the auto dump/load option. (Go to page 150.)
- Press F5 to **purge** the NCP dump. (Go to page 154.)
- Press F6 to return to the "DISPLAY IPL INFORMATION" screen.
- Press F7 to **display** either the date and time the load module was generated (GEN) or saved (SAVE).
- Press F8 to **activate/deactivate** a load module. (Go to “CCU Selection on Models 410, 41A, 610, and 61A” on page 151.)
- Press SEND to refresh the information displayed on this screen.

The format of the screen changes depending upon the CCU configuration and operating mode.

Configuration C and **Operating Mode D**:

If the configuration is twin, the operating mode **D** is also given on the same line. If the operating mode is twin-backup mode, a fallback message appears if either CCU is supporting the whole configuration.

Changing the auto load/dump settings, and purging the dump can be done at each CCU.

Changing the Automatic Dump/Load Option (Models 410, 41A, 610, and 61A)

If your 3745 is in twin-dual or twin-backup mode, when you press F4 on the screen of page 149, you are prompted to select a CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxxx                     xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES          A
ACTIVE LOAD MODULE:  xxxxxxxx                     xxxxxxxx     B


- SELECT A CCU (A or B) THEN PRESS SEND  ==>  B

===>

F1:END  F2:MENU2  F3:ALARM                      F6:QUIT
```

After you select a CCU, the operation continues.

If YES is displayed (**A**) and if a load module is active (**B**), on the next abend, the control program will be loaded from the disk and not from the host.

You can use F6 to return to the previous screen without performing the change.

If your 3745 is in single or twin-standby mode, the operation is performed immediately.

Load Module Activation/Deactivation

CCU Selection on Models 410, 41A, 610, and 61A

You are prompted to select a CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxxx                     xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:                               xxxxxxxx


- SELECT A CCU (A or B) THEN PRESS SEND  ==>  B

===>

F1:END  F2:MENU2  F3:ALARM                      F6:QUIT
```

After you select a CCU continue with the next screen.

Load Module Activation/Deactivation

You are prompted to activate or deactivate a load module on the following screen:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxxx                     xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:                               xxxxxxxx


- USE F KEYS TO ACTIVATE OR DEACTIVATE LOAD MODULE

===>

F1:END  F2:MENU2  F3:ALARM   F6:QUIT  F7:ACTIVE LM  F8:DEACTIVE LM
```

If you want to:

- **Activate a load module**

  Press the F7 key to activate the load module.

  Two cases:

  1. There are two load modules on the selected CCU. Enter the load module name on the following screen and press SEND.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                    CCU-A                        CCU-B
CP RUNNING:         xxxxxxxx                     xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:    xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                    xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:            xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:     YES                          YES
ACTIVE LOAD MODULE:                              xxxxxxxx


ENTER NAME OF THE LOAD MODULE TO ACTIVATE THEN PRESS SEND ==> yyyyyyyy

===>

F1:END  F2:MENU2  F3:ALARM                       F6:QUIT
```

2. There is only one load module on the selected CCU:
   The load module is automaticaly active.

On the following screen, the load module is set active by pressing the F8 key.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO



CONFIGURATION: TWIN         OPERATING MODE: DUAL

                    CCU-A                        CCU-B
CP RUNNING:         xxxxxxxx                     xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:    xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                    xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:            xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:     Yes                          Yes
ACTIVE LOAD MODULE: yyyyyyyy                     xxxxxxxx


===>  ACTIVE LOAD MODULE CHANGED

F1:END F2:MENU2 F3:ALARM F4:CHG DMP/LD  F5:PURGE DMP F7:DATE F8:CHG ACT LM
```

- **Deactivate a load module**

  Press F8 key to deactivate the load module.

  On the following screen, the active load module is reset by pressing the F8 key.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO



CONFIGURATION: TWIN         OPERATING MODE: DUAL

                     CCU-A                         CCU-B
CP RUNNING:          xxxxxxxx                      xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME                SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      Yes                           Yes
ACTIVE LOAD MODULE:  xxxxxxxx


===>  ACTIVE LOAD MODULE CHANGED

F1:END F2:MENU2 F3:ALARM F4:CHG DMP/LD  F5:PURGE DMP F7:DATE F8:CHG ACT LM
```

NCP Dump Purge (Models 410, 41A, 610, and 61A)

If your 3745 is in twin-dual or twin-backup mode, when you press F5, you are prompted to select a CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                         CCU-B
CP RUNNING:          xxxxxxxx                      xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (m
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (m
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (m
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:  xxxxxxxx                     xxxxxxxx


- SELECT A CCU (A or B) THEN PRESS SEND  ==>  A

===>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

Before the dump is purged, you are asked to confirm your intention to purge the dump.

You can use F6 to return to the previous screen without performing the purge.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO


CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                         CCU-B
CP RUNNING:          xxxxxxxx                      xxxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
                     xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxxx (mm/dd/yy hh:mm:ss) xxxxxxxx (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      YES                          YES
ACTIVE LOAD MODULE:  xxxxxxxx                     xxxxxxxx


- PLEASE CONFIRM THE DUMP PURGE (Y OR N) THEN PRESS   ==>  Y

===>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

If the dump does not exist, an error message is displayed.

For Models 17A, 21A, 31A, 41A, and 61A, if the dump exists and there is a problem on the MOSS to MOSS-E link, an error message is displayed.

Otherwise, if the dump exists and there is no problem, it is purged.

After the function is complete, the main screen is refreshed and error messages, if any, are displayed.

Field Meanings (All Models)

CP RUNNING: The name of the control program running in the CCU is visible in the CP RUNNING field. This information is read from CCU storage at an address passed from NCP to MOSS during initialization. The information is available only when NCP has been properly initialized. This field is blank when no control program is running.

LOAD MODULES: This field is blank when there are no load modules on the disk.

The load module information gives:

1. The name and status of any load modules that reside on the hard disk. If there is only one disk load module, the related information is placed in the first associated line.

   Rename Load Module: You can rename the load module from the host by using the following VTAM modify load command:
   F NET,LOAD,.....**ACTION=RENAME,LOADMOD=**ncpa, **NEWNAME**=ncpb,.....
   Then the active load module 'ncpa' on the MOSS disk is renamed onto 'ncpb'.

   On the screen 'DISK IPL INFO', the 'ACTIVE LOAD MODULE' becomes 'ncpb' but the 'CP RUNNING' stays 'ncpa'.

   Refer to VTAM documentation for further details.

2. The generation date and time of any load modules. MOSS retrieves this information from the NCP load module. If the appropriate information is not found, the screen field contains zeros.

3. The date and time of the save are given when the load module has been completely saved onto the disk.

   When performing the initial loading of a **remote controller** (using the diskette management procedure), the displayed date and time reflect the date and time that the load module was saved on the **local controller** hard disk. The copy from diskette to the remote controller hard disk does not change the date and time. (See “Diskette Management Overview” on page 157.)

If the load module has not been completely loaded, one of the following messages is displayed:

- SAVE IN PROGRESS: A non-disruptive save from the host to the hard disk is in progress.
- SAVE SUSPENDED: A non-disruptive save may be in progress, but there has been no host activity on this load module for more than 5 minutes. It is assumed that communication with the host has been broken, and the associated file may be used for a subsequent save, if needed.

Incomplete load modules will be purged at the next IPL.

DUMP: If an NCP dump is present on the MOSS disk (for Models 17A, 21A, 31A, 41A, and 61A, on the MOSS-E disk), its name and the time and date of the dump are indicated. During a dump transfer between the MOSS and the MOSS-E the words SAVE DATE/TIME are replaced by XFER IN PROGRESS.

The statuses of the automatic dump/load switches are given as the AUTO DUMP/LOAD option. The switches must always be set or reset together. If both are set, YES is displayed. If the switches are not set, NO is displayed.

If the dump occurred during NCP initialization before the location of the dump name (in CCU storage) was passed to the MOSS, a default name of CCUDUMP appears. This default name is also given to the dump if the MOSS was unable to read the dump name from CCU storage at the time the dump occurred.

AUTO DUMP/LOAD: The automatic dump/load options are set or reset together. They may be set only if an active load module resides on the disk.

The auto dump/load default settings are:

- Load from disk
- Dump to disk.

and are used only:

- The first time a load/dump occurs
- After a disk restore.

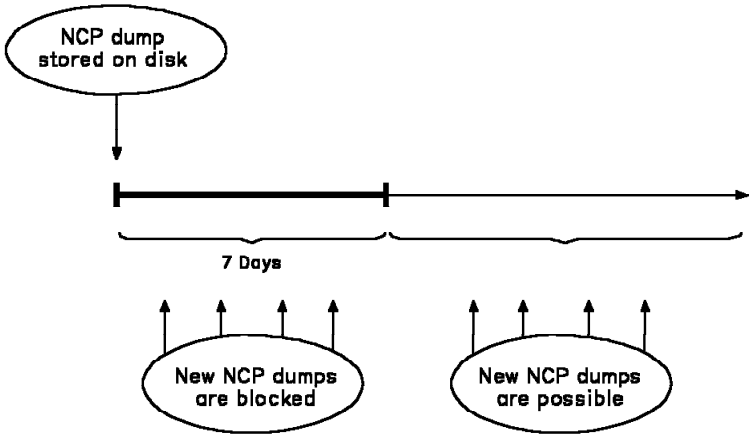
The auto dump/load information is stored in the MOSS. It will trigger an IPL from the disk if:

- Auto dump/load flag is ON and
- There is an active load module.

The active load module is used for the IPL.

When using the DISKETTE MANAGEMENT option, and after a copy from the diskette to the disk, the auto dump/load option is set to YES. (See **F5** in Figure 7 on page 157.)

Dump Overlay: An NCP dump stored on the 3745 disk must be retrieved and/or erased as soon as possible. If it is not, when the next CCU problem occurs (on the same CCU), an automatic NCP dump cannot be taken. This obstruction lasts seven days, and, as illustrated, if an NCP dump is not retrieved and/or erased from the disk during this time, it is not possible to record a new NCP dump concerning the same CCU during this period.



ACTIVE LOAD MODULE: This field displays the name of the disk load module currently active on the disk. It does not imply that it is running in the CCU. This

load module will be currently active and running in the CCU at the next load from disk. If no load module residing on the disk is active, the field is blank. The load module can be made active from VTAM application. This is accomplished through the SAVEMOD and DUMPLOAD on the vary command. (Refer to *VTAM Operation*, SC23-0113 documentation.)

Since much of the information on the screen can be changed by a host operator, the information is refreshed after a purge dump or change auto dump/load operation.

When using the DISKETTE MANAGEMENT option, and after a copy from the diskette to the disk, the active load module name is updated. (See **F5** in Figure 7.)

Diskette Management Overview

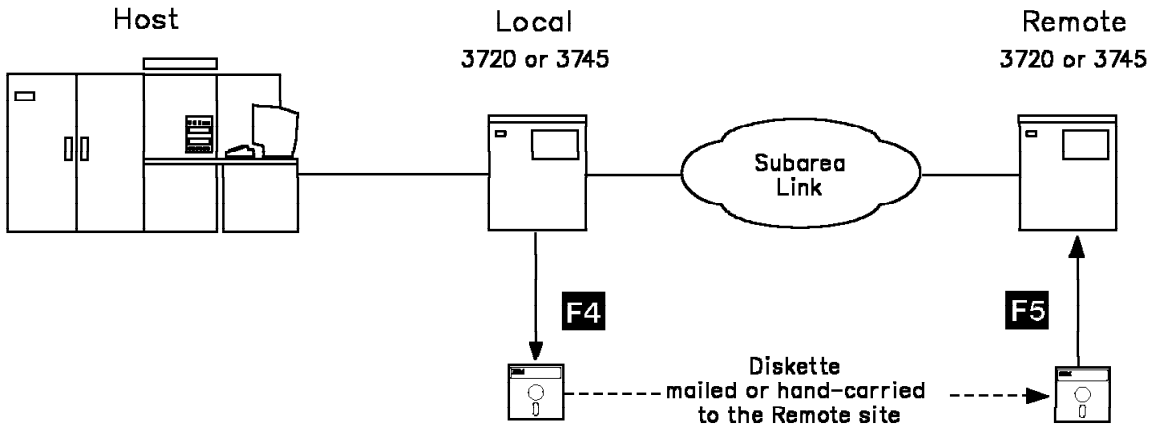


Figure 7. DII Function (Diskette Management)

When the subarea link to the remote controller is token-ring, switched X.21, switched or non-switched X.25, an active NCP/PEP configuration must be initially loaded into the remote 3745 or 3720 for subsequent activation and loading.

A minimal NCP/PEP load module (less than 1 Megabyte) is generated at the host and transferred to the local controller hard disk. This minimal NCP/PEP is copied from the hard disk onto a diskette which is mailed or hand-carried to the remote controller and then copied to the remote hard disk.

Formatting and copying diskettes

The diskette must be formatted first. This can be done on a PC/AT* or on 3720/3745 controllers using the MOSS disk function. Refer to “Formatting a Diskette” on page 144.

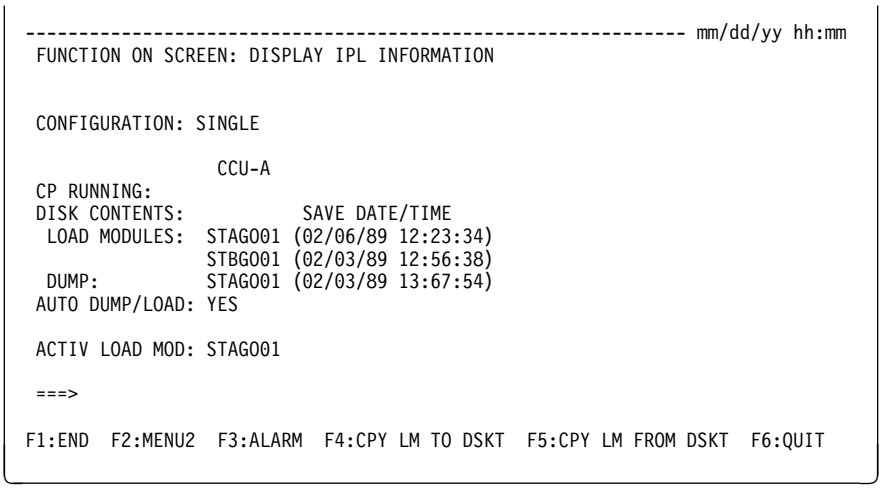
Use 5.25 inches diskettes, double-sided, and high capacity to support 1.2 Megabytes.

No track in error must be found at the end of the diskette formatting operation. This could lead to unexpected results when copying. Only use error free diskettes.

When copying diskettes on a PC, AT, or PS/2, the DOS command DISKCOPY must be used.

Diskette Management (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)

D I I SEND ■ 2 SEND



```
------------------------------------------------------------------ mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION


 CONFIGURATION: SINGLE

                  CCU-A
 CP RUNNING:
 DISK CONTENTS:            SAVE DATE/TIME
  LOAD MODULES:  STAGO01 (02/06/89 12:23:34)
                 STBGO01 (02/03/89 12:56:38)
  DUMP:          STAGO01 (02/03/89 13:67:54)
 AUTO DUMP/LOAD: YES

 ACTIV LOAD MOD: STAGO01

 ===>

F1:END  F2:MENU2  F3:ALARM  F4:CPY LM TO DSKT  F5:CPY LM FROM DSKT  F6:QUIT
```

From the above screen:

- **Press F4** and go to:
  "Copying the Load Module to a Diskette (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)" on page 160.
- **Press F5** and go to:
  "Copying the Load Module from a Diskette (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)" on page 161.
  This action sets the load module active and sets the automatic DUMP/LOAD option **(for the next IPL)**.

Copying the Load Module to a Diskette (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)

(See **F4** on Figure 7 on page 157.)

- This operation is done on the local 3745.
- The NCP/PEP or minimal NCP/PEP load module size must be less than 1 Megabyte.
- The NCP/PEP load module generated on the host has been stored on the local controller disk using the VTAM command MODIFY LOAD.
- After pressing F4 on the screen shown on page 159, the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: SINGLE


                  CCU-A
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34)
                STBGO01 (02/03/89 12:56:38)
   DUMP:        STAGO01 (02/03/89 13:67:54)

 AUTO DUMP/LOAD: YES
 ACTIV LOAD MOD: STAGO01

 ENTER NAME OF THE LM TO BE COPIED TO DSKT THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                  F6:QUIT
```

- Enter the load module name then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

You must get the COMMAND COMPLETED message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed. (Appendix D, “Messages” on page 463 includes diskette management messages.)

- Then mail or hand-carry the diskette to the remote site.

Copying the Load Module from a Diskette (Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A)

(See **F5** in Figure 7 on page 157.)

- This operation is done on the remote 3745.
- From the diskette created by the local 3745, a minimal or complete NCP/PEP load module is copied on to the remote controller disk and set active.

  Setting a load module active means that this load module is the one to be used in case an IPL is requested from the console or follows an NCP abend or a hard-check.
- After pressing F5 on the screen shown on page 159, the following screen is displayed:

```
------------------------------------------------------------------ mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: SINGLE

                  CCU-A
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34)
                STBGO01 (02/03/89 12:56:38)
   DUMP:        STAGO01 (02/03/89 13:67:54)

 AUTO DUMP/LOAD: YES
 ACTIV LOAD MOD: STAGO01

 PLEASE CONFIRM THE COPY OF THE DSKT LM (Y OR N) THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

- Confirm the copy of the load module and then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

  You must get the COMMAND COMPLETED message

  You must restart the load module copy when the following three conditions are met:

  1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
  2. **COMMAND COMPLETED** is not displayed.
  3. No other diskette management message is displayed.
     (Appendix D, “Messages” on page 463 includes diskette management messages.)

  – If a load module with the same name exists on the hard disk, it will be replaced.

  – If space is available on the hard disk, the load module from the diskette will be added.
  If space is not available, the oldest load module will be replaced.
  Refer to SAVE DATE/TIME on the screen to identify the oldest load module.
- For backup purposes it is suggested that you make a copy of this diskette.
- Then continue with the next step of the procedure you left.

Diskette Management (Models 410, 41A, 610, and 61A)

D I I SEND . 2 SEND

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: TWIN              OPERATION MODE: BACKUP

                  CCU-A                              CCU-B
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME              SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34) STBGO01 (02/06/89 15:34:31)
                STBGO01 (02/03/89 12:56:38)
  DUMP:         STAGO01 (02/03/89 13:67:54) STBGO01 (02/06/89 12:23:11)

 AUTO DUMP/LOAD: YES                        YES

 ACTIV LOAD MOD: STAGO01                    STBGO01

 ===>

F1:END  F2:MENU2  F3:ALARM  F4:CPY LM TO DSKT  F5:CPY LM FROM DSKT  F6:QUIT
```

From the above screen:

- **Press F4** and go to:
  “Copying the Load Module to a Diskette (Models 410, 41A, 610, and 61A)” on page 163.
- **Press F5** and go to:
  “Copying the Load Module from a Diskette (Models 410, 41A, 610, and 61A)” on page 165.
  This action sets the load module active and sets the automatic DUMP/LOAD option **(for the next IPL)**.

Copying the Load Module to a Diskette (Models 410, 41A, 610, and 61A)

(See **F4** in Figure 7 on page 157.)

- This operation is done on the local 3745.
- The NCP/PEP or minimal NCP/PEP load module size must be less than 1 Megabyte.
- The NCP/PEP load module generated on the host has been stored on the local controller disk using the VTAM command MODIFY LOAD.
- After pressing F4 on the screen shown on page 162, the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: TWIN              OPERATION MODE: BACKUP

                  CCU-A                                 CCU-B
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME               SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34) STBGO01 (02/06/89 15:34:31)
                STBGO01 (02/03/89 12:56:38)
  DUMP:         STAGO01 (02/03/89 13:67:54) STBGO01 (02/06/89 12:23:11)

 AUTO DUMP/LOAD: YES                          YES
 ACTIV LOAD MOD: STAGO01                      STBGO01

 SELECT A CCU (A OR B) THEN PRESS SEND ===>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

- Select the CCU then press SEND.
- The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
⅞FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: TWIN              OPERATION MODE: BACKUP


                  CCU-A                                 CCU-B
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME               SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34) STBGO01 (02/06/89 15:34:31)
                STBGO01 (02/03/89 12:56:38)
   DUMP:        STAGO01 (02/03/89 13:67:54) STBGO01 (02/06/89 12:23:11)

 AUTO DUMP/LOAD: YES                          YES
 ACTIV LOAD MOD: STAGO01                      STBGO01

 ENTER NAME OF THE LM TO BE COPIED TO DSKT THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

- Give a load module name then press SEND.
- When the copy is successful, the message **COMMAND COMPLETED** is displayed.

You must get the COMMAND COMPLETED message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
   (Appendix D, “Messages” on page 463 includes diskette management messages.)

- Then mail or hand-carry the diskette to the remote site.

Copying the Load Module from a Diskette (Models 410, 41A, 610, and 61A)

(See **F5** in Figure 7 on page 157.)

- This operation is done on the remote 3745.
- From the diskette created by the local 3745, a minimal or complete NCP/PEP load module is copied on the remote controller disk, and set active.

  Setting a load module active means this load module is the one to be used in case an IPL is requested from the console or follows an NCP abend or a hard-check.
- After pressing F5 on the screen shown on page 162, the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: TWIN              OPERATION MODE: BACKUP

                  CCU-A                              CCU-B
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME               SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34) STBGO01 (02/06/89 15:34:31)
                STBGO01 (02/03/89 12:56:38)
   DUMP:        STAGO01 (02/03/89 13:67:54) STBGO01 (02/06/89 12:23:11)

 AUTO DUMP/LOAD: YES                         YES
 ACTIV LOAD MOD: STAGO01                     STBGO01

 SELECT A CCU (A OR B) THEN PRESS SEND ===>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

- Select the CCU, press SEND, and the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION

 CONFIGURATION: TWIN              OPERATION MODE: BACKUP

                  CCU-A                              CCU-B
 CP RUNNING:
 DISK CONTENTS:           SAVE DATE/TIME               SAVE DATE/TIME
  LOAD MODULES: STAGO01 (02/06/89 12:23:34) STBGO01 (02/06/89 15:34:31)
                STBGO01 (02/03/89 12:56:38)
    DUMP:       STAGO01 (02/03/89 13:67:54) STBGO01 (02/06/89 12:23:11)

 AUTO DUMP/LOAD: YES                         YES
 ACTIV LOAD MOD: STAGO01                     STBGO01

 PLEASE CONFIRM THE COPY OF THE DSKT LM (Y OR N) THEN PRESS SEND ==>

F1:END  F2:MENU2  F3:ALARM                 F6:QUIT
```

- Confirm the copy of the load module from the diskette and press SEND.
- When the copy is successful, the **COMMAND COMPLETED** message is displayed.

You must get the COMMAND COMPLETED message

You must restart the load module copy when the following three conditions are met:

1. The MOSS keyboard is unlocked (the keyboard is locked during the copy).
2. **COMMAND COMPLETED** is not displayed.
3. No other diskette management message is displayed.
   (Appendix D, “Messages” on page 463 includes diskette management messages.)

  - If a load module with the same name exists on the hard disk, it will be replaced.
  - If space is available on the hard disk, the load module from the diskette will be added.
    If space is not available, the oldest load module will be replaced.
    Refer to SAVE DATE/TIME on the screen to identify the oldest load module.

- For backup purposes it is suggested that you make a copy of this diskette.
- Then continue with the next step of the procedure you left.

Displaying Scheduled IPL Information

It is possible to display the assigned timed IPL of each load module of a 3745 hard disk.

1. Logon to the 3745 MOSS console.
2. Type: D I I SEND

The next screen: DISPLAY IPL INFORMATION is obtained.

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION


                1 - DISK IPL INFORMATION

                2 - DISKETTE MANAGEMENT

                3 - TIMED IPL INFORMATION

                4 - RENAME LOAD MODULE MANAGEMENT

 SELECT AN OPTION THEN PRESS SEND ===>


 ===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

Select the option: 3 - TIMED IPL INFORMATION

3 SEND

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxx                      xxxxxxx
DISK CONTENTS:                    DATE/TIME                    DATE/TIME
   TIMED IPL :       xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss)

       ALERT :       xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss)


===>

F1:END F2:MENU2 F3:ALARM                  F6:QUIT
```

CONFIGURATION SINGLE for 3745 Models 130, 150, 170, 17A, 210, 21A, 310, and 31A
TWIN for 3745 Models 410, 41A, 610, and 61A.

OPERATING MODE Used in twin configuration (for Models 410, 41A, 610, and 61A), to specify the operating mode of the two CCUs.

- **DUAL** Both CCUs are operational simultaneously, each controlling a part of the network and if one CCU fails, its part of the network is no longer controlled.
- **STANDBY** Only one CCU is operational, the other CCU is in standby mode and becomes operational when the current CCU fails.
- **BACKUP** Both CCUs are operational simultaneously, each controlling a part of the network and also one acts as a backup of the other.

CCU-A CCU-B Information is displayed under CCU B only for 3745 Models 410, 41A, 610, and 61A.

CP RUNNING Name of load modules running in CCU A and CCU B.

DISK CONTENTS The information in front of TIMED IPL and ALERT is displayed only if a load module is present on the 3745 hard disk with timed IPL set.

TIMED IPL Displays the load module name and its scheduled IPL time. The time is the 3745 MOSS time.

ALERT Displays the load module name and the time that the associated alert must be sent to NetView*. The time is the 3745 MOSS time.

===> If no timed IPL is scheduled, the following message is displayed:
NO TIMED IPL ACTIVE ON ALL LOAD MODULES

Timed IPL Alarms and Alert

ALARM D8: CCU-x LM=xxxxxxx: TIMED IPL CANCELLED hhmmss ref code

Cause:

- The battery is down.
- The scheduled IPL date and time is passed for this load module (or for one of the load modules in the case of 'multiple load module').
- At the scheduled IPL time the MOSS status did not allow for an automatic IPL. **The MOSS must be online.**

Action:

- Check if there is also the associated alarm:
  A5: ASK SERVICE PERSONNEL TO REPLACE BATTERY

  In this case,  to have the MOSS battery replaced.
- Check the status of the MOSS and use the DII function to check the timed IPL information.
  Refer to “Displaying Scheduled IPL Information” on page 167.
  Use the appropriate VTAM command to restart the operations.

Note:
The alarm D8 is not generated on receipt of the following VTAM commands from the host:

- IPL (with the option SAVE) which replaces a load module for which timed IPL was set.
- Modify Load Module command (MLM) for canceling a timed IPL.
- Modify Load Module command (MLM) for replacing or purging a load module for which timed IPL was set.

ALARM D9: CCU-x TIMED IPL TO OCCUR IN hh:mm CHECK VALIDITY hhmmss ref code

Cause:
Network operator.

Action:
No action if the IPL time, mentioned with the alarm, corresponds to the scheduled IPL time; otherwise, if the time does not correspond, contact the network operator for investigation.

3745 Alert Reference Code D9

Alert Condition: An IPL of the control program is going to occur soon.

The elapsed time between the receipt of this alert and the IPL has been specified in the NOTIFY keyword of the VTAM 'MODIFY LOAD' command.

To obtain the full benefit of NetView alerts, NPDA (NetView Hardware Monitor Facility) can be used to monitor all alerts displayed. The NetView Automation Table can be updated to recognize the Timed IPL Alert and generate an

appropriate message. (No alert is displayed if the The NetView Automation Table is not updated.)

MOSS Console Alarm Message

ALARM D9 : CCU-x TIMED IPL TO OCCUR IN hh:mm CHECK VALIDITY

NetView Alert - Dynamic

TIMED IPL TO OCCUR SOON: NETWORK OPERATOR

Subvector and Subfield Keys	Code Points	Causes and Actions
Alert ID Number SV X'92'		X'C8C275DF'
Alert Type SV X'92'	X'11'	Impending
Alert Description SV X'92'	X'B00A'	Timed IPL to occur soon
Probable Causes SV X'93'	X'7003'	Network operator
User Causes SV X'94' SF X'01'	X'7006'	Network operator
Actions SV X'94' SF X'81'	X'3110' X'F0A0' X'82' SF X'0170' X'01A1' X'82' SF X'32A0' X'82' SF	Contact Communications Systems Programmer For: (Communication Control Unit (X'34')) Verify impending event should occur Verify: (Time hh:mm (X'91')) Report the following: (Product alert reference code (X'F0')) 'D9'
Install Causes SV X'95' SF X'01'	(None)	
Failure Causes SV X'96' SF X'01'	(None)	

Rename Load Module

This function is used for changing the external name of the Communication Controller Load Module on the MOSS disk.

It allows the user to keep all load module changes transparent to the operations staff.

Renaming the Load Module is executed:

- **From the host,** by using VTAM commands, to rename a load module on the 3745 hard disk only.

It is mandatory that, at host level, the associated load module names which are members of VTAMLST and NCPLOAD libraries are renamed too.

- **From the MOSS console,** by using the MOSS DII function, to rename the load module on the 3745 MOSS hard disk.

  The renaming from the MOSS **must only be done on recovery action.** This means that previously the corresponding load module on the hard disk was already renamed from the host, and MOSS should be 'ALONE'.

- You can rename, on a 3745 hard disk (local or remote), a load module which has one of the following statuses:
  - An active load module with or without timed IPL set.
    If the renamed load module was the active load module, then it will remain the active load module even though it has a different name. The automatic dump/load switches will also remain unchanged.
  - An inactive load module with or without timed IPL set.
    If the renamed load module was not the active load module, it will remain not active. The automatic dump/load switches will remain unchanged.

Recovery from the MOSS Console

Load Module Rename Restriction

1. Renaming a load module on the 3745 hard disk (MOSS DII function) **must only be used for error recovery**
2. A load module must not be renamed on the hard disk if it has not been previously renamed using VTAM 'modify load' command.

Also for recovery action, from the MOSS, it is possible to activate and deactivate a load module on a hard disk. This is done from the MOSS DII function with the MOSS status 'ALONE'.
MOSS must be alone in order to avoid unexpected usage of rename.

Disk IPL Information (DII)

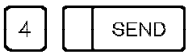
After logging on to the 3745 MOSS console with **MOSS alone**:

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN: DISPLAY IPL INFORMATION


                 1 - DISK IPL INFORMATION

                 2 - DISKETTE MANAGEMENT

                 3 - TIMED IPL INFORMATION

                 4 - RENAME LOAD MODULE MANAGEMENT

 SELECT AN OPTION THEN PRESS SEND ===>


 ===>

F1:END  F2:MENU2  F3:ALARM
```

From this screen:

Select the option:
4 - RENAME LOAD MODULE MANAGEMENT.



If the MOSS is online or offline, the following message is displayed.

```
AUTO DUMP/LOAD:      NO                          YES
ACTIVE LOAD MODULE:  xxxxxxx                     xxxxxxx


===>  MOSS IS NOT ALONE - FUNCTION NOT AVAILABLE

F1:END F2:MENU2 F3:ALARM F4:RENAME LM  F6:QUIT F7:ACTIV LM  F8:DEACTIV LM
```

If the MOSS is alone, the following screen id displayed:

The information displayed on the right side concerning the CCU B applies only to the IBM 3745 Models 410, 41A, 610, and 61A. These models have two CCUs. Models 130, 150, 170, 17A, 210, 21A, 310, and 31A have only one CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: DUAL

                     CCU-A                       CCU-B
CP RUNNING:          xxxxxxx                     xxxxxxx
DISK CONTENTS:                SAVE DATE/TIME              SAVE DATE/TIME
   LOAD MODULES:     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      Yes                         Yes
ACTIVE LOAD MODULE:  xxxxxxx                     xxxxxxx


===>

F1:END F2:MENU2 F3:ALARM F4:RENAME LM  F6:QUIT F7:ACTIV LM  F8:DEACTIV LM
```

From the above screen:

- Press F4 to change the name of a load module.
- Press F7 to activate a load module.
- Press F8 to deactivate a load module.
- Any other displayed key to access common MOSS options.

Note: The load module must first have been renamed using VTAM 'modify load' command. If this is not the case results will be unpredictable.

For 3745 models with twin CCUs (410 and 610), the next screen for CCU selection is displayed. For other models, go to “Load Module Selection” on page 174.

CCU Selection (Models 410, 41A, 610, and 61A)

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxx                      xxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:  xxxxxxx                      xxxxxxx

- SELECT A CCU (A or B) THEN PRESS SEND  ==>  B

===>

F1:END F2:MENU2 F3:ALARM F4:RENAME LM  F6:QUIT F7:ACTIV LM  F8:DEACTIV LM
```

From the above screen:

Select the CCU (A or B) for which you want to rename a load module.

In a twin CCU configuration, if the operating mode is: STANDBY, this screen is not displayed. The running CCU is automatically selected.

Load Module Selection

On the following screen, the information displayed on the right side concerning the CCU B applies only to the IBM 3745 Models 410, 41A, 610, and 61A. These models have two CCUs. Models 130, 150, 170, 17A, 210, 21A, 310, and 31A have only one CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxx                      xxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxx A xx (mm/dd/yy hh:mm:ss) xxx A xx (mm/dd/yy hh:mm:ss)
                     xxx A xx (mm/dd/yy hh:mm:ss) xxx A xx (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:  xxxxxxx                      xxxxxxx

 ENTER NAME OF THE LOAD MODULE TO BE RENAMED THEN PRESS SEND  ==>  xxxxxxx

===>

F1:END  F2:MENU2  F3:ALARM                       F6:QUIT
```

From the above screen:

1. Enter the name of the load module to be renamed, (one of the load modules referenced **A** on the screen).
2. Press SEND.

The following error messages may be displayed:

- LOAD MODULE NOT FOUND ON DISK, CANNOT BE RENAMED
  When the load module does not exist on the disk.
- LOAD MODULE NEVER RENAMED FROM VTAM, FUNCTION NOT AVAILABLE

  A load module can only be renamed from the MOSS if it was previously renamed from VTAM.

  Renaming a load module from the MOSS must only be done for recovery action.

New Name Entry

On the following screen, the information displayed on the right side concerning the CCU B applies only to the IBM 3745 Models 410, 41A, 610, and 61A. These models have two CCUs. Models 130, 150, 170, 17A, 210, 21A, 310, and 31A have only one CCU.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                          CCU-B
CP RUNNING:          xxxxxxx                        xxxxxxx
DISK CONTENTS:                SAVE DATE/TIME                 SAVE DATE/TIME
   LOAD MODULES:     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                             YES
ACTIVE LOAD MODULE:  xxxxxxx                        xxxxxxx

 ENTER NEW NAME THEN PRESS SEND  ==>  xxxxxxx

===>

F1:END  F2:MENU2  F3:ALARM                       F6:QUIT
```

When you enter the new name, if you obtain the following message, you must provide another name.

```
AUTO DUMP/LOAD:      NO                             YES
ACTIVE LOAD MODULE:  xxxxxxx                        xxxxxxx

 ENTER NEW NAME THEN PRESS SEND  ==>  xxxxxxx

===> NEW NAME ALREADY EXISTS

F1:END  F2:MENU2  F3:ALARM                       F6:QUIT
```

Then you will be prompted with the next screen to confirm the new name.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISK IPL INFO

CONFIGURATION: TWIN         OPERATING MODE: BACKUP

                     CCU-A                        CCU-B
CP RUNNING:          xxxxxxx                      xxxxxxx
DISK CONTENTS:                SAVE DATE/TIME               SAVE DATE/TIME
   LOAD MODULES:     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
                     xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
   DUMP:             xxxxxxx  (mm/dd/yy hh:mm:ss) xxxxxxx  (mm/dd/yy hh:mm:ss)
AUTO DUMP/LOAD:      NO                           YES
ACTIVE LOAD MODULE:  xxxxxxx                      xxxxxxx

 CONFIRM NEW NAME:  xxxxxxx  (Y/N) THEN PRESS SEND ==> _

===>

F1:END  F2:MENU2  F3:ALARM                       F6:QUIT
```

Display Long (DLO)

Use the DLO function to display on the same screen, one of the following:

- 128 bytes of CCU storage. Example: If you enter S1234, 128 bytes are displayed, starting from the byte at address 1234.
- 16 LSRs. Example: If you enter L4, 16 LSRs are displayed, starting from LSR 4.
- All work registers. Enter only W to display all the work registers.
- CCU input registers from X'70' to X'7F'. Enter only I to display all CCU input registers from X'70' to X'7F'.


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: DISPLAY LONG
          - ENTER:   S   FOLLOWED BY STORAGE ADDRESS     ==>  I
                     L   FOLLOWED BY LSR NUMBER
                     W   (WORK REGISTERS)
                     I   REGISTERS X'70' TO X'7F'
           I 70      000000  000000  000000  000000

           I 74      1F1992  000000  000000  000000

           I 78      000000  000000  012E99  000000

           I 7C      000000  000000  000000  000000


===>

F1:END  F2:MENU1  F3:ALARM    F5:BT BUFFER F6:STR
```

From the above screen:

- Press F5 to display the branch trace buffer (page 179).
- Press F6 to start the CCU.

Differences between the Display/Alter and Display Long Functions

Table 40. Differences between the Display/Alter and Display Long Functions

Function	Display/Alter	Display Long
Number of lines displayed	One	Several
Data displayed	One of the following: • 16 bytes of storage • Four LSRs, or • Four work registers.	One of the following: • 128 bytes of storage • 16 LSRs • All work registers, or • All CCU input registers from X'07' to X'7F'.
Alters data	Yes	No
Displays on same screen: • CCU storage • LSRs • Work registers.	Yes	No
Uses Refresh command	Yes	No

Displaying the Branch Trace Buffer

To display the branch trace buffer:

The first 128 bytes of the branch trace buffer are displayed. The contents of the first 24 bytes are:

bytes 0-1	Buffer length excluding header (maximum X'FFF0')
bytes 2-3	Reserved
byte 4	Branch trace options (x = insignificant bit)
xx1. ..x.	branch trace active
xx.1 ..x.	WRAP
xx.. 1.x.	BT STOP ON AC
xx.. .1x.	CCU STOP
xx.. ..x1	MOSS interrupt requested (address compare function)
bytes 5-7	Lower limit address
byte 8	Program level interrupt traced:
01.. ..00	level 1
0.1. ..00	level 2
0..1 ..00	level 3
0... 1.00	level 4
0... .100	level 5
bytes 9-11	Upper limit address
byte 12	Reserved
bytes 13-15	Address of the first branch trace entry (buffer address + X'18')
byte 16	Reserved
bytes 17-19	Address + 8 of the last branch trace buffer entry used, when the branch trace was stopped
byte 20	Reserved
bytes 21-23	Address of the last branch trace buffer entry of the buffer.

Each branch trace entry is eight bytes long and contains:

byte 1	Come-from program level interrupt (04 means level 4)
bytes 2-4	Come-from address
byte 5	Go-to program level interrupt
bytes 6-8	Go-to address.

ESS Interface Display (EID)

Use the Ethernet Interface Display (EID) function to display information on the basic characteristics of an ESS line (parameters) and, if the line is active, the flow characteristics (counters).

Note: Particular attention should made to ensure that the correct addressing has been used when defining Ethernet lines, especially with regard to gateway specifications. Additionally, when an Ethernet LAN is attached to the 3745, the SQE TEST switch on the MAU must be set to ENABLE. If this is not done, operation of the Ethernet LAN may be interrupted.


```
------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

           - ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....









==> ...
F1:END   F2:MENU2  F3:ALARM
```

Displaying Line Parameters

If you enter a valid line address (1056 - 1071) and then press SEND, the parameters screen is displayed:

```
------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

           - ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....



           LINE xxxx  xx IN ADAPTER x

        ADAPTER TYPE                          : ESS
        ESS UNIVERSALLY ADMINISTERED ADDRESS : xxxxxxxxxxxx
        ESS LOCALLY ADMINISTERED ADDRESS     : xxxxxxxxxxxx
        ESS CURRENT ADDRESS                   : xxxxxxxxxxxx

        COUNTER LIMIT FOR ALL OPERATIONS          (HEX VALUE) : xxxxxxx
        COUNTER LIMIT FOR UNSUCESSFUL OPERATIONS  (HEX VALUE) : xxxxxxx



===> ...
F1:END  F2:MENU2  F3:ALARM           F5:REFRESH            F7:COUNTERS
```

This screen shows the line parameters of the line address entered.

Adapter Type ESS

Universally Administered Address 6 bytes in hexadecimal form. This is the address assigned to the EAC card at time of manufacture. It can be displayed even when the line is not activated.

Locally Administered Address 6 bytes in hexadecimal form. If available, this address is provided by the control program sysgen. It is valid only when the line is activated.

Current Address 6 bytes in hexadecimal form. This shows the address currently used by the ESS, as specified in the control program sysgen.

Counters Limit 4 bytes in hexadecimal form. The limits are specified by the control program sysgen. Each time the specified limit has been reached, all counters are reset to zero.

You may enter a new line address at the top of the screen, and the characteristics of that line will be displayed.

Pressing F7 will display the counters data for the line displayed.

Displaying Counters Data

The counters data for a given line can only be displayed by selecting F7 from the parameters screen. The following screen is displayed:

```
------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: ESS INTERF DISPLAY

           - ENTER A DECIMAL LINE ADDRESS FROM 1056 TO 1071 ==> ....


            LINE xxxx  xx IN ADAPTER x      LINE ACTIVATED
                                     EXCESS COLLISION (XMIT)     : xxxxxxxx
CURRENT COUNTERS :                   TIME DOMAIN REFLECT. (XMIT) : xxxxxxxx
----------------                     LATE COLLISION (XMIT)       : xxxxxxxx
TOTAL XMIT FRAMES LOST : xxxxxxxx    NO BUFFER AVAILABLE (RCV)   : xxxxxxxx
TOTAL RCVD FRAMES LOST : xxxxxxxx    CRC ERROR (RCV)             : xxxxxxxx
TOTAL XMIT FRAMES      : xxxxxxxx    FRAMING ERROR (RCV)         : xxxxxxxx
TOTAL RCVD FRAMES      : xxxxxxxx    FRAME > 1518 BYTES (RCV)    : xxxxxxxx
                                     DEFERRED (XMIT)             : xxxxxxxx
                                     ONE RETRY (XMIT)            : xxxxxxxx
                                     MORE THAN ONE RETRY (XMIT)  : xxxxxxxx


===> ...
F1:END  F2:MENU2  F3:ALARM        F5:REFRESH   F6:LINE PARAMETERS
```

From the above screen:

To display the line parameters of this line, press F6.
To display the line parameters of another line, enter the line number and press SEND.
To display counter information of a line other than that displayed, enter the line number and press SEND, then press F7.

Total XMIT Frames Lost The total of the Excess Collision and Late Collision counters.

Total RCVD Frames Lost The total of the No Buffer Available, CRC Error, Framing Error and Frame >1518 counters.

Total XMIT Frames The total transmitted frames, including the Total XMIT Frames Lost.

Total RCVD Frames The total received frames, including the Total RCVD Frames Lost.

Excessive Collisions This counter is incremented when a frame cannot be transmitted after 16 attempts because of collisions on the medium.

Time Domain Reflectometry Associated with the Excessive Collisions counter, this is a 10-bit counter that starts when the transmission of a frame commences and counts until a collision is detected. When the apparent collision is a result of a fault on the medium, the Time Domain Reflect. gives twice the propagation time between the ESS and the fault, in units of 0.1 microseconds.

Late Collisions The number of collision errors that occurred when a transmit frame was lost because the collision took place after the maximum time that should be required to detect a collision.

No Buffer Available The number of receive congestion errors which occurred when the adapter was unable to receive a frame because its buffers were full.

CRC Error The number of errors which occurred when a receive frame was discarded due to a problem detected by the cyclic redundancy check.

Framing Error The number of errors due to a received frame not ending on a byte boundary.

Frame > 1518 Bytes The number of errors that occurred when a receive frame was longer than the maximum allowed frame size for the media.

Deferred This counter is incremented when the transmission of a frame is deferred because carrier was sensed on the media.

Retry The number of frames that required one retry in order to complete successfully.

More Than One Retry The number of frames that required more than one (2-16) retry attempt in order to complete successfully.

Event Log Display (ELD)

The box event record file collects information on errors and events. Each piece of information is referred to as a BER.

- A BER created for an **error** is always associated with an alarm. This alarm immediately follows the BER. In this case, perform the action required for that alarm.
- A BER created for an **event** requires no specific action.

When the BER log is full, the next BER to arrive overrides the oldest BER in the file. BERs are stored in the order of arrival.

Use the ELD function [E] [L] [D] [SEND] to display:

- The summary of all the BERs and alarms
- The list of all the BERs and alarms
- Details of a specific BER.

The BER file may be printed at the host. The print procedure, as well as the transfer of the file to the host, is described in *NCP, SSP,and EP Diagnosis Guide*.

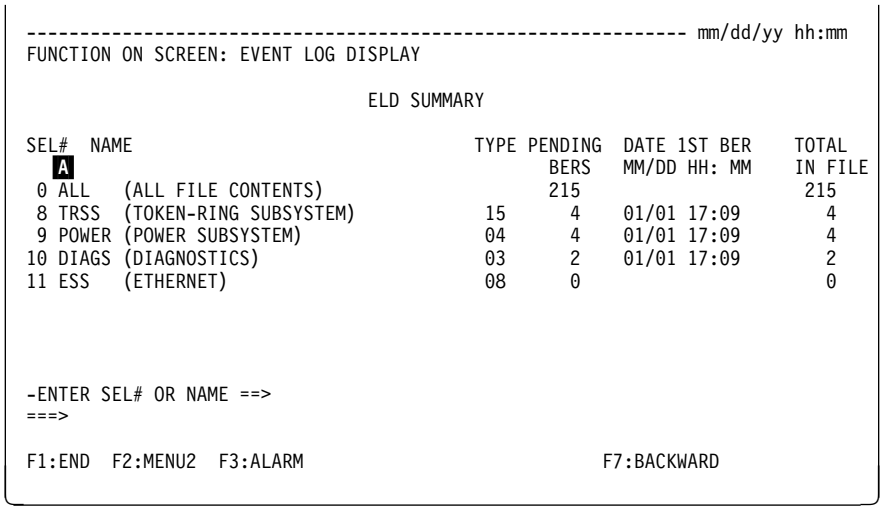
ELD Summary (BER Summary)

When you select the Event Log function, the Summary screen is first displayed. Two screens are necessary to display the complete summary of BERs.

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                              ELD SUMMARY

SEL#  NAME                                TYPE PENDING DATE 1ST BER TOTAL
  A                                             BERS   MM/DD HH:MM IN FILE
0 ALL  (ALL FILE CONTENTS)                       380                 380
1 CA   (CHANNEL ADAPTERS)                 10      1   10/07 11:29     1
2 TSS  (TRANSMISSION SUBSYSTEM)           11      0                   0
3 CP   (CONTROL PROGRAM)                  12      0                   0
4 CCU  (CENTRAL CONTROL UNIT)             13      0                   0
5 IOC  (I/O CONTROL)                      14      2   10/07 11:26     2
6 MOSS (MAINTENANCE OPERATOR SUBSYSTEM)   01     61   10/06 09:37    61
7 ALARM                                   02     78   10/06 09:37    78

-ENTER SEL# OR NAME ==>
===>

F1:END  F2:MENU2  F3:ALARM                                  F8:FORWARD
```

From the above screen:

- Press F8:FORWARD to display the continuation of the Summary screen.



From the above screen:

- **Press F7:BACKWARD** to display the beginning of the Summary screen.
- **Press F8:FORWARD** to display the continuation of the Summary screen.
- **Enter a SEL# or a NAME** to display the list of all the BERs for that specific component (page 187).
  (NAME means acronyms: CA, TSS, CP, .. and so on .. **A** .)
  - Select ALARM to display the list of all the alarms recorded in the BER file.
  - Select ALL to display the list of all the BERs and alarms recorded in the BER file.

TYPE and PENDING BERS: Service personnel only.
DATE 1ST BER: The date and time of the oldest BER in this category that is not flagged (pending BER).
TOTAL IN FILE: The total number of BERs.

ELD List (BER List)

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                                MOSS      LIST
                                                          TOTAL: 202

SEL# DATE/TIME FLAG   NAME   TYPE ID   EVENT DESCRIPTION
455 10/13 09:32  MOSS          01 19   IML COMPLETE
453 10/13 09:28  MOSS MIOC     01 02   INVALID OUT MBOX ON LVL4
451 10/13 09:18  MOSS APPL     01 06   IPL COMPLETE WITH ERROR
450 10/13 09:18  MOSS          01 44   MOSS CODE DATA FOR PROBLEM
449 10/13 09:07  MOSS SCRN     01 05   SCANNER FAILURE DURING IPL
448 10/13 09:06  MOSS APPL     01 21   IPL STARTED
446 10/13 09:05  MOSS          01 19   IPL COMPLETE
443 10/13 09:02  MOSS APPL     01 06   IPL CHECK OF61
442 10/13 09:02  MOSS APPL     01 21   IPL STARTED
441 10/13 09:02  MOSS APPL     01 21   IPL STARTED
ENTER SEL# OR NAME ==>
===>

F1:END  F2:MENU2  F3:ALARM  F4:SUMMARY            F7:BACKWARD
```

From the above screen:

- Press F4:SUMMARY to display the Summary screen.
- Enter a SEL# to display the details of a specific BER (page 187).

TOTAL: The total number of BERs for the selected component is displayed on the first line.
SEL#: Use this number to display the details of a specific BER.
DATE/TIME: The date and time at which the BER was recorded. The date is four digits defining month and day. The time is four digits defining hours and minutes.
FLAG, TYPE, and ID: Service personnel only.
NAME: This origin name should not be confused with the component name. It may also be used to list all the BERs having the same origin.
EVENT DESCRIPTION: An asterisk (*) at the end of the description indicates that the description is truncated. To display the full description of the BER, enter the SEL# of the BER.

ELD Detail (BER Detail)

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: EVENT LOG DISPLAY
                                ELD DETAIL
SEL#:448  FLAG:00 DATE: 10/13 TIME: 09:06  TYPE:01  ID:21

         BER Detail Information                ref. code









===>

F1:END  F2:MENU2  F3:ALARM  F4:SUMMARY  F5:LIST  F7:PREVIOUS  F8:NEXT
```

From the above screen:

- Press F4:SUMMARY to display the Summary screen.
- Press F5:LIST to display the BER List screen.
- Press F7:PREVIOUS to display the BER Detail screen of the previous BER.
- Press F8:NEXT to display the BER Detail screen for the next BER.
- The reference code is the last string of characters on the BER detail line.

Fallback (FBK) Models 410, 41A, 610, and 61A

The normal fallback procedure is automatic but you can perform fallback manually.

Fallback in Twin-Standby Mode

The fallback function allows you to switch the configuration onto the standby CCU (refer to page 190).

With the **fast fallback** capability **(hot standby)**, the standby CCU is already pre-loaded with the active load module. This assumes that:

- The appropriate control program is used (NCP Version 5 Release 2.1 or later release) and defined to support 'hot standby'.
- The save and auto/dump options have been set appropriately.
- The load module has been saved on the disk and made active (at host level).
- The standby CCU has been pre-loaded with a copy of the active load module at the last stand-alone IPL.
- There is no control program dump on the disk. If this is the case, the network operator will be requested to purge the dump.

Otherwise, the standby CCU IPL will be automatically performed.

Fallback in Twin-Backup Mode

The fallback function allows you to add the configuration of one CCU to the other one (refer to page 191).

Twin-Standby Mode

To select the Fallback function.

F B K SEND

The following screen is displayed if your 3745 is in **twin-standby mode**:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK









- SELECT THE FALLBACK PHASE (1, 2) ==>

     1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
     2 = PERFORM FALLBACK


===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

Select the fallback phase:

- Enter 1 if you want to request network deactivation. An alert is sent to the host. Wait for confirmation from the network operator.
- Enter 2 to perform fallback.

The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK









- SELECT THE FALLBACK PHASE (1, 2) ==>    2

     1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
     2 = PERFORM FALLBACK

- PLEASE CONFIRM YOUR SELECTION: Y or N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

- Enter Y to confirm fallback procedure. In this case, you cannot cancel or terminate the fallback process. You will then get the function selection rules screen. An automatic IPL is started.
- Enter N if you do not want to perform fallback. In this case, you will get the message PRESS SEND TO EXIT THE FUNCTION.

If there is an active load module on the disk and the standby CCU has been pre-loaded, the automatic IPL after fallback is not needed. In this case, there will be a tentative re-IPL of the CCU that was previously active. Also, a dump is taken to allow problem determination. Once this CCU is successfully pre-loaded, it is ready for subsequent fallback provided the dump has been purged in the meantime.

Twin-Backup Mode

To select the Fallback function.

The following screen is displayed if your 3745 is in **twin-backup mode**:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

    - SELECT THE CCU THAT WILL SUPPORT THE WHOLE CONFIGURATION (1,2) ==>

           1 = CCU-A
           2 = CCU-B


    - SELECT THE FALLBACK PHASE (1, 2) ==>

     1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
     2 = PERFORM FALLBACK


===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

Select the CCU that will support the whole configuration by entering either 1 or 2.
Select the fallback phase:

- Enter 1 if you want to request network deactivation. An alert is sent to the host. Wait for confirmation to continue with the fallback procedure.
- Enter 2 to perform fallback.

Note: In order to use the inactive CCU again, you have to perform the SWITCHBACK function (SBK on page 313). The message READY will appear in the MSA under the backup CCU when fallback is entered.

Then you will get the following screen:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

- SELECT THE CCU THAT WILL SUPPORT THE WHOLE CONFIGURATION (1,2) ==> 1

     1 = CCU-A
     2 = CCU-B


- SELECT THE FALLBACK PHASE (1, 2) ==> 2

     1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
     2 = PERFORM FALLBACK

- PLEASE CONFIRM YOUR SELECTION: Y or N, THEN PRESS SEND ==> Y
===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

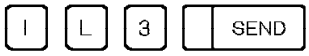
- Enter Y to confirm the fallback procedure. As soon as fallback is confirmed, you cannot cancel or terminate the fallback process. You will get the following screen.
- Enter N if you do not want to perform fallback. You will then get the message PRESS SEND TO EXIT THE FUNCTION.

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: FALLBACK

                              FALLBACK




         WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1




===>

F1:END  F2:MENU2  F3:ALARM
```

When fallback is complete, the message FALLBACK COMPLETE appears in the MSA.

CCU Level-3 Interrupt (IL3)

Use the IL3 function to request a CCU level-3 interrupt.



This function is performed immediately.

MOSS IML from the Operator Console (IML)

For all 3745 models, expect 17A, 21A, 31A, 41A, and 61A, you may IML the MOSS from:

- The control panel
- The local or alternate console
- The remote console.

For Models 17A, 21A, 31A, 41A, and 61A, you may IML the MOSS from:

- The control panel
- The service processor
- A LAN-attached or remote console.

All MOSS IML procedures and console logon procedures are documented in the *3745 Basic Operations Guide*.

All Models
except 17A, 21A, 31A, 41A, and 61A

To IML the MOSS from an operator console: [I] [M] [L] [SEND]

1. The message IML IS IN PROGRESS is displayed.
2. The channel interface screen is displayed on the local console at the end of the MOSS IML.
3. Press F4.
4. The password screen is displayed:

```
CUSTOMER ID:                          3745-XXX        SERIAL NUMBER:nnnnnnn


              3745 MICROCODE (C) COPYRIGHT IBM CORP. 1987
                                                          mm/dd/yy hh:mm


                   ENTER PASSWORD ==>









                              F4:Channel Interface Display
```

5. Enter the customer local password.
6. The Function Selection Rules screen is displayed.

When the MOSS is IMLed, the remote console is disconnected.

Models 17A, 21A, 31A, 41A, 61A

To IML the MOSS from the service processor or other console:

I M L Enter

1. The message IML IS IN PROGRESS is displayed.
2. The channel interface screen is displayed on the service processor at the end of the MOSS IML.
3. Press F4.
4. The Function Selection Rules screen is displayed.

Scanner IML from the Operator Console (IMS)

Before you IML a scanner, note that:

- You must stop all the lines on the scanner using access method facilities.
- The MOSS must be **online**. To set the MOSS online, go to page 245.
- If an IPL is in progress, you must either wait until the IPL is completed, or cancel the IPL by pressing F1.

  Note: Canceling an IPL (by pressing F1 during the IPL phase 1) may give unexpected results. (For instance, you cannot upgrade the CDF if you canceled IPL in such a condition.)
- If you do one of the following before the IML is complete, the IML is canceled:
  - Press F1
  - Switch the operator console from normal mode to test mode
  - Power off the operator console.

MSA fields N and O give information on the scanner. Refer to “CCU Information” on page 394 and “Scanner Information” on page 398 for details of these fields.

To IML only one scanner: [I] [M] [S] [ ] [SEND]

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: IML ONE SCANNER


        - ENTER:

             THE SCANNER NUMBER PRECEDED BY S (S1 TO S32)
              OR                                              ==>
             THE LINE ADDRESS (0 TO 1071)
             (0 TO 895 FOR TSS      )
             (1024 TO 1039 FOR HPTSS)
             (1056 TO 1071 FOR ESS  )



===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

- Follow the instructions on the screen to select the scanner you want to IML.
- Press SEND.

When the IML is complete, the following message is displayed:
IML FOR SCANNER xx COMPLETED - SCANNER IS CONNECTED

Reactivate the lines on the scanner using host access method facilities.

3745 IPL from the Operator Console (IPL)

IPL Single-CCU Configuration

Note: For Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A, the 3745 is always considered as single-CCU.

Use this function to IPL the CCU and IML all scanners. You may also IPL the 3745 from the control panel. All 3745 IPLs are documented in the *3745 Basic Operations Guide*.

Before you IPL the 3745, note that:

- You cannot select a menu 2 function before IPL phase 2. The control panel shows FF2 and MSA displays IPL PHASE 2.
- After the 3745 IPL, the MOSS is **online**.
- If you do one of the following before the IPL is complete, the IPL is canceled:
  - Press F1
    Note: Canceling an IPL (by pressing F1 during the IPL phase 1) may give unexpected results. (For instance, you cannot upgrade the CDF if you canceled IPL in such a condition.)
  - Power off the operator console or service processor.

  Also for Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A only:
  - Switch the operator console from normal mode to test mode
  - Switch the operator console to another 3745 with the IBM 7427 Console Switching Unit.

To IPL the 3745 from the operator console or the service processor:


```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)









- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

If you enter Y, the IPL starts immediately.

If you enter N, the following message is displayed:

PRESS SEND TO EXIT THE FUNCTION

Once you have confirmed your selection, the IPL starts.

The following screen is displayed while the IPL is in progress, and remains until you press F1.

The progression of the IPL is displayed in the machine status area described in Appendix A.

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)

                          CCU AND SCANNER IPL


              WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1









===>

F1:END  F2:MENU2  F3:ALARM   F4:STOP F5:RESUME
```

From the above screen:

- Press F4:STOP to stop within a phase.
- Press F5:RESUME to resume the IPL.

When the IPL is complete, IPL COMPLETE and MOSS-ONLINE are displayed in the MSA.

If the automatic IPL/Dump option is set, a control program load module is automatically loaded from the 3745 disk. Otherwise, the 3745 is loaded from the channel or link.

The control program may be loaded from the host or from the disk. To load the control program from the disk:

- A control program load module must have been saved on disk and
- The automatic load option must have been specified in the Disk IPL Information (DII) function (page 147).

IPL Twin-CCU Configuration (Models 410, 41A, 610, and 61A)

If you have a twin-CCU configuration it will be in one of the following modes:

- Twin-dual mode
  (Go to "Twin-Dual Mode")
- Twin-backup mode
  (Go to "Twin-Backup Mode" on page 203)
- Twin-standby mode
  (Go to "Twin-Standby Mode" on page 205).

The mode you have can be found in the CDF by selecting option 9, "CCU Operating Mode."

Twin-Dual Mode

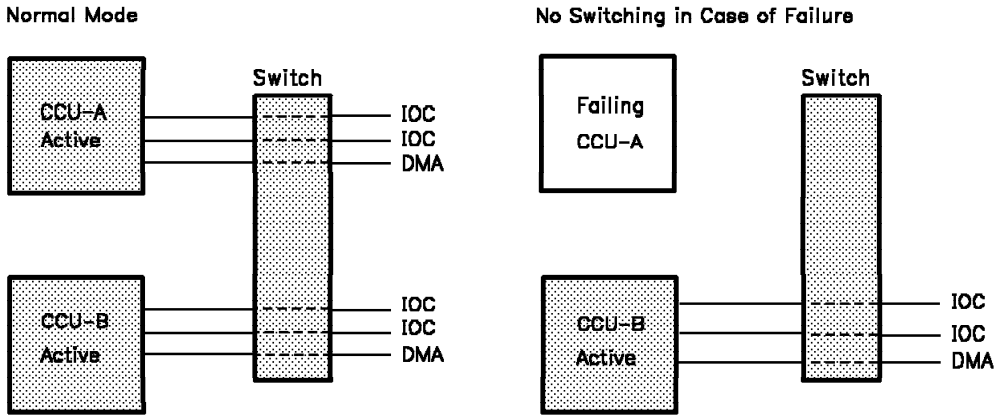


Figure 8. Twin-Dual Mode

When the 3745 is in twin-dual mode:

I P L SEND . 1 SEND

IPL is performed on CCU-A and CCU-B in parallel.

I P L SEND . 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND . 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)


- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==>  1

     1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
     2 = CCU-A
     3 = CCU-B




- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

You are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:

  PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1:

```
CUSTOMER ID:                            3745-XXX         SERIAL NUMBER:
IPL CCU-A            IPL IN PROGRESS                        mm/dd/yy hh:mm

IPL CCU-B            IPL IN PROGRESS


FUNCTION ON SCREEN: IPL CCU(S)
                         CCU AND SCANNER IPL


             WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1







===>

F1:END  F2:MENU2  F3:ALARM   F4:STOP F5:RESUME
```

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.

When the IPL is complete, the following message is displayed in the MSA:

IPL COMPLETE

Twin-Backup Mode

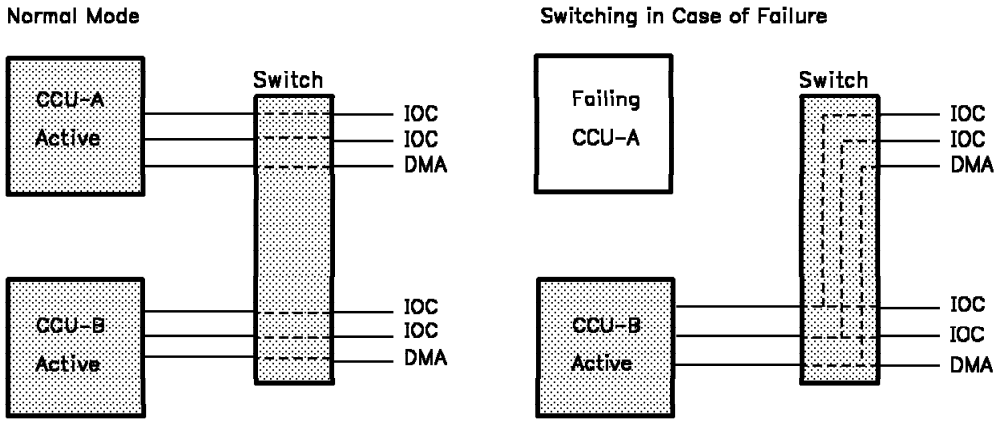


Figure 9. Twin-Backup Mode

When the 3745 is in twin-backup mode:

I P L SEND ■ 1 SEND

1. If the two CCUs are supporting a part of the configuration, IPL is performed on both CCUs.
2. If one CCU is supporting the whole configuration, IPL is performed on this CCU. Fallback has taken place.
3. If no bus is attached to any CCU, IPL is performed on both CCUs.

I P L SEND ■ 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND ■ 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

If the CCU you selected (by option 2 or 3) is standby, the IPL will be performed. If there is no active load module on the disk, the IPL will terminate after phase 1. Otherwise the standby CCU will be loaded with the active load module.

The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)


- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==>    1

     1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
     2 = CCU-A
     3 = CCU-B




- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

Once you have selected the option, you are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:

  PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1:

```
CUSTOMER ID:                            3745-XXX         SERIAL NUMBER:
IPL CCU-A           IPL IN PROGRESS                        mm/dd/yy hh:mm

IPL CCU-B           IPL IN PROGRESS


FUNCTION ON SCREEN: IPL CCU(S)
                         CCU AND SCANNER IPL


             WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1







===>

F1:END  F2:MENU2  F3:ALARM   F4:STOP F5:RESUME
```

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.

When the IPL is complete, the following message is displayed in the MSA:

IPL COMPLETE

Twin-Standby Mode

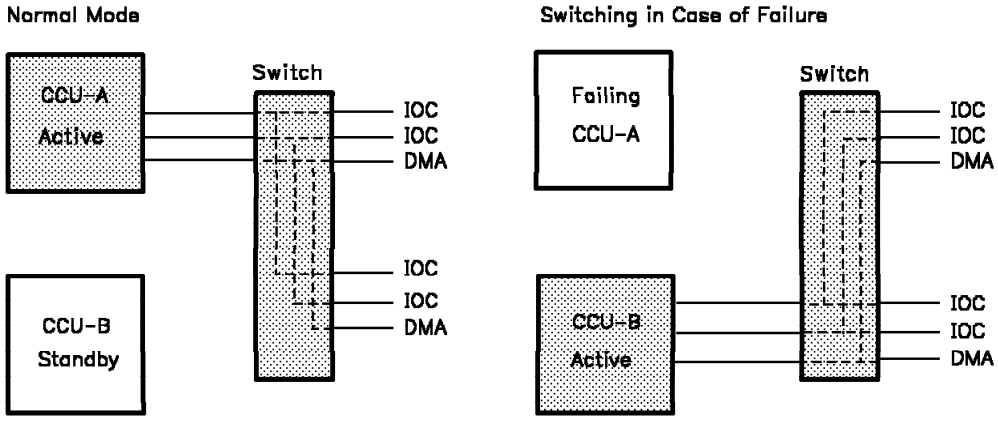


Figure 10. Twin-Standby Mode

When the 3745 is in twin-standby mode, you can request the IPL of:

- Both the active and standby CCUs
- CCU A only or CCU B only.

I P L SEND . 1 SEND

1. If one CCU is running with the whole configuration, IPL is performed on that CCU.
2. If no CCU is running, IPL is performed on the standby CCU.

Note: Look in the configuration data file (see “Configuration Data File (CDF)” on page 11) to find out which is the default CCU.

I P L SEND . 2 SEND

IPL is performed on CCU-A unless it is powered off or down.

I P L SEND . 3 SEND

IPL is performed on CCU-B unless it is powered off or down.

If the CCU you selected (by option 2 or 3) is standby, the IPL will be performed. If there is no active load module on the disk, the IPL will terminate after phase 1. Otherwise the standby CCU will be loaded with the active load module.

The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: IPL CCU(S)


- SELECT THE CCU YOU WANT TO IPL (1 TO 3) ==>    1

     1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
     2 = CCU-A
     3 = CCU-B




- PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

Once you have selected the option, you are requested to confirm the IPL:

- If you enter Y, the IPL starts immediately.
- If you enter N, the following message is displayed:

  PRESS SEND TO EXIT THE FUNCTION

The following screen is displayed while the IPL is in progress, and remains until you press F1:

```
CUSTOMER ID:                            3745-XXX         SERIAL NUMBER:
IPL CCU-A            IPL IN PROGRESS                        mm/dd/yy hh:mm

IPL CCU-B            IPL IN PROGRESS


FUNCTION ON SCREEN: IPL CCU(S)
                         CCU AND SCANNER IPL


             WHEN THIS FUNCTION IS COMPLETE (SEE ABOVE), PRESS F1







===>

F1:END  F2:MENU2  F3:ALARM   F4:STOP F5:RESUME
```

If you selected option 1:

- When the IPL is complete, you will see CCU AND SCANNER IPL at the top of the screen.
- With the fast fallback capability, the standby CCU will automatically be pre-loaded with the active load module. (It is assumed that the load module has been saved on the disk and is active.)

  Refer to “Fallback (FBK) Models 410, 41A, 610, and 61A” on page 189 for more details on the fast fallback capability.

  Otherwise, the standby CCU will only be tested.

If you selected option 2 or 3:

- When the IPL is complete, the following message is displayed in the MSA:

  IPL COMPLETE

No further action is required. However, you may press:

- F4 to stop the IPL progression
- F5 to resume the IPL from phase 1.

Line Interface Display (LID)

When modifying the network or installing terminals, use the LID function to display the following line information:

- Line parameters
  - Line interface standard
  - Line type
  - Line protocol
  - Cable identification
  - Transmission mode
  - Clock type
  - Speed.
- Transmit and receive commands, and command status
- State of the data set leads (interchange circuits)
- 32 bytes of transmitted data
- 32 bytes of received data.

Notes:

1. The control program must be loaded to use the LID function.
2. If a hardware configuration change has been made, for example, a cable change, you must update the configuration data file before using the LID function. See “Configuration Data File (CDF)” on page 11.
3. To display line information for TRSS lines, refer to “TRSS Interface Display (TID)” on page 341.
4. To display line information for ESS lines, refer to “ESS Interface Display (EID)” on page 181.

To start the LID function: L I D SEND

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
          - ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> A









===>

F1:END  F2:MENU2  F3:ALARM
```

A You can enter an address from 0 through 895 for TSS, and from 1024 through 1039 for HPTSS. Enter the address and press SEND. The Line Parameter screen is displayed.

Line Parameters

The parameters of the line that you selected on the previous screen are displayed as shown below.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
         - ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==>    A

         LINE 27  11 IN SCANNER 2  CCITT V24 OR EIA RS232C    B

          CONTROL PROGRAM:   NCP
          LINE TYPE:         NON SWITCHED
          PROTOCOL:          SDLC - NRZI = NO
          TRANSMISSION MODE: HALF DUPLEX
          CABLE ID:          DIRECT ATTACHMENT
          CLOCK:             BUSINESS MACHINE - LOCAL ATTACHMENT
          SPEED:             9600 BPS


===>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS F7:LEADS F8:DATA
```

From the above screen:

- You can display the parameters of another line:
  - Enter its address on line **A** .
  - Press SEND.
- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line. See next screen.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

On line **B** are displayed:

- The line address (example: line 27)
- The line number (11) in the scanner and the scanner number (2) (example: line 11 in line adapter 2)
- The line interface standard

  CCITT V.24 OR EIA 232D
  CCITT V.25 OR EIA RS366
  CCITT X.21
  CCITT X.21 LOW SPEED
  CCITT X.21 WIDE BAND
  WIDE BAND
  CCITT V.35

  CCITT V.24 OR EIA 232D is also displayed when the interface supports the V.25 bis protocol.

  If the lines are not activated, you will see 'INTF STANDARD NOT ACCESSED' instead of 'CCITT V 24 OR EIA 232C' (see **B** on screen of page 214).

LINE TYPE:
SWITCHED or NONSWITCHED **TRANSMISSION MODE:**
DUPLEX, HALF-DUPLEX, or HALF-DUPLEX RTS PERMANENT **CABLE ID:**

BMI - LIC 5
BMI - LIC 6
CABLE NOT INSTALLED
WRAP PLUG
MODEM ATTACHMENT
DIRECT ATTACHMENT
AUTOCALL

If the lines are not activated, you will see CABLE ID NOT ACCESSED. **SPEED:** The speed for internal clock, high-speed lines and direct-attached lines. These speeds are set at NCP generation.

Data Set Leads

If you press F7 on the Line Parameter screen, the Data Set Lead screen is displayed. All the abbreviations used in the Data Set Leads screen are documented in the list of abbreviations at the back of the manual.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
          - ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==> A

          LINE 80  11 IN SCANNER 3  CCITT V24 OR EIA RS232C  B


       C  XMIT CMD: SDLC XMIT DATA         RCV CMD: SDLC RCV DATA
       D       STATUS: IN-PROGRESS             STATUS: IN-PROGRESS

        E    MODEM-OUT DTR ON                MODEM-IN DSR ON  F
                    RTS ON                        RFS ON
                    NS                            RI
                    DRS                           CD
                    MT                            TI


===>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS F7:LEADS F8:DATA
```

From the above screen:

- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

To display the data set leads of another line:

- Enter its address on line **A** .
- Press SEND.
- The Line Parameter screen (page 210) is displayed, press F7 again to obtain the Data Set Lead screen.

When a data set lead has a blank beside it, the lead is off. For example, in the above screen NS means NS OFF.

To interpret the most significant leads displayed on the above screen and take appropriate actions, go to the page indicated below. **The line interface standard is indicated on line B.**	
CCITT V.24	• If nonswitched DCE attachment, go to page 215. • If switched DCE attachment, go to page 216. • If direct attachment, go to page 216.
CCITT V.24 supporting the V.25 bis protocol	You have a switched DCE attachment using a V.25 bis protocol. The data set leads may reflect the status of the line during the call establishment phase or during the data transfer phase. If you are sure that the data set leads displayed apply to the data transfer phase, you can go to page 216. The V.24 switched DCE attachment table can help you on problem determination. Otherwise, it is preferable to refer to the *IBM 3745 Communication Controller: Problem Determination Guide*, SA33-0096, on the chapter which analyzes problems on LIC1 to LIC4 lines.
CCITT V.35	• If direct attachment, go to page 216. • If DCE attachment, go to page 217.
CCITT V.25	• If autocall, go to page 217.
CCITT X.21	• If DCE attachment, go to page 218.
CCITT X.21	• If direct attachment, go to page 218.

B Same as for Line Parameters screen (see page 210)

C The last transmit and receive commands

D The status of the transmit and receive commands

E Modem-out data set leads: DCE-source

F Modem-in data set leads: DTE-source.

Transmit and Receive Data

If you press F8 on the Line Parameter screen or on the Data Set Lead screen, the Transmit and Receive Data screen (TSS only) is displayed.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINE INTERF DSPLY
          - ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1039 ==>        A

          LINE 32  0  IN SCANNER 9     INTF STANDARD NOT ACCESSED  B

     C      XMIT CMD: LINE NOT ACTIVE    RCV CMD: LINE NOT ACTIVE
     D           STATUS:                      STATUS:

          SAMPLING OF XMIT DATA        SAMPLING OF RCV DATA
     G      00 00 00 00 00 00 00 00      00 00 00 00 00 00 00 00   H
            00 00 00 00 00 00 00 00      00 00 00 00 00 00 00 00
            00 00 00 00 00 00 00 00      00 00 00 00 00 00 00 00
            00 00 00 00 00 00 00 00      00 00 00 00 00 00 00 00


===>

F1:END F2:MENU2 F3:ALARM F5:REFRESH F6:LINE PARAMETERS F7:LEADS F8:DATA
```

From the above screen:

- Press F5:REFRESH to refresh displayed information. Press BREAK to cancel the refresh.
- Press F6:LINE PARAMETER to display parameters of the line.
- Press F7:LEADS to display data set leads of the line.
- Press F8:DATA to display the transmitted and received data of the line (TSS only).

To display the transmit and receive data of another line:

- **Enter its address on line A.**
- **Press SEND.**
- **The Line Parameter screen (page 210) is displayed, press F8 again to obtain the Transmit and Receive Data screen.**

B Same as for Line Parameters screen

C The last transmit and receive commands

D The status of the transmit and receive commands

G 32 bytes of transmit data from the buffer (the first four are transmit data for SS)

H 32 bytes of receive data from the buffer (the first one is receive data for SS).

V.24 Nonswitched DCE Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
DSR OFF	Check if the DCE is powered on and correctly connected.
DTR OFF	- Activate the line (host side). - Check the DTE-to-DCE cable connection.
Duplex lines: **RTS OFF** and **RFS OFF**	Check if RTS PERMANENT is on Line Parameter screen (press F6). - *If permanent,* activate the line. - *If not permanent*, check the scanner and system generation parameters.
Duplex lines: **RTS ON** and **RFS OFF**	- Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected.
Half-duplex lines: **RTS** and **RFS** do not flash	Because of synchronization between the refresh rate and the transmission rate, data may never appear. To verify if data is being transmitted, press F8. If no data: - Check if the DCE is powered on and correctly connected. - Check the DTE-to-DCE cable connection.
Half-duplex lines: **RTS ON** and **RFS OFF**	- Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected.
Point-to-point: **CD OFF**	Check data transmission. Press F8. *If no data in receive buffer,* suspect network problem.
Multipoint: **CD ON** steady	Check the local DCE, the link, or the remote site (network problem).
TI ON	Reset the DCE test switch to normal operating position.
DRS OFF **DRS ON**	No action required. You may check that the speed matches that displayed on the Line Parameter screen (F6).
MT ON	Reset test condition at the host side.
NS	Not significant.
RI ON	Not significant.
All data set leads are OK but there is traffic only on transmit side	Check terminal configuration at remote site and control program generation parameters (for example, the remote terminal address, NRZ-I or non-NRZ-I).

V.24 Switched DCE Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
108/1 (Connect Data Set to Line) **DTR ON**	Check the system generation parameters and line parameters (press F6). If parameters OK, and RI=ON, check the DCE.
108/2 (Data Terminal Ready) **DTR OFF**	Activate the line (host side).
Auto-answer line 108/1 (Connect Data Set to Line) or 108/2 (Data Terminal Ready) **RI OFF** and **DSR OFF**	Incoming call: - Check the transmission line. - Check the DCE. - Check the DTE-to-DCE cable connection.
RTS and **RFS** do not flash	Check data transmission (press F8). If no data: - Check if the DCE is powered on and correctly connected. - Check the DTE-to-DCE cable connection.
CD OFF	- Check the DCE. - Check the DTE-to-DCE cable connection. - Check the remote site or the system generation parameters.
TI ON	Significant only if DSR is ON. In this case, reset the DCE test switch to the normal operating position.
MT ON	Reset test condition at the host side.
NS	Not significant.

V.24 or V.35 Direct Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
DTR OFF	- Enable the line at the host side. - Check the DTE-to-DCE cable connection.
RFS OFF	Same actions as DTR OFF.
DSR OFF	
RTS OFF	
CD OFF	
All other data set leads are not significant	

V.35 DCE Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
DSR OFF	Check if the DCE is powered on and correctly connected.
DTR OFF	- Activate the line (host side). - Check the DTE-to-DCE cable connection.
Duplex lines: **RTS OFF** and **RFS OFF**	Check if RTS PERMANENT is on Line Parameter screen (press F6). - *If permanent,* activate the line. - *If not permanent,* check the scanner and the system generation parameters.
Duplex lines: **RTS ON** and **RFS OFF**	- Check the DTE-to-DCE cable connection. - Check if the DCE is powered on and correctly connected.

V.25 Autocall

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
PWI OFF	- Check if the automatic calling unit (ACU) is powered on. - Check the ACU-to-DTE cable connection.
CRQ OFF	Activate the ACU line (host side).
DLO OFF	- Check the ACU. - Suspect the ACU-to-DCE cable.
PND does not flash	- Check the ACU. - Suspect the ACU-to-DCE cable. - If the cable is OK, suspect the network.
DPR does not flash	- Check the ACU-to-DCE cable. - If OK, contact the appropriate service representative.
ACR ON	- Check the ACU line. - If OK, suspect the network.
RSE OFF (DSC)	- Check the ACU line. If OK, suspect the network. - Press F6 to display the Line Parameter screen. - Enter the address of the data transmission line, then press SEND. - Check the line parameters. - Press F7 to display the data set leads according to the V.24 - Switched DCE Attachment list, on page 216.

X.21 DCE Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
T OFF **C OFF**	DTE not ready: - Check the line parameters (press F6). - If the problem persists, contact the appropriate 3745 service representative.
R ON **I OFF**	DCE not ready: - Check if DCE is powered on and correctly connected. - If the problem persists, contact the public switched network service representative.

X.21 Direct Attachment

If on the screen, the STATUS of the data set lead is:	Perform the following ACTIONS:
T OFF **C OFF**	DTE not ready: - Check the line parameters (press F6). - If the problem persists, contact the appropriate service representative.
R OFF **I OFF**	Remote 3745 attachment not ready: - Check cable installation. - Check remote 3745 to ensure line is ACTIVE.

Link IPL Ports (LKP)

NOTE:

For Models **17A, 21A, 31A, 41A, and 61A**, to use ESCON* channels as link IPL ports, see the 'Configure ESCON Processors' function in the MOSS-E on the service processor.

Use the LKP function to define the communication link addresses for each IPL port at installation time, or to update them. The parameters of each IPL port that are used to initialize the controller are maintained on the MOSS disk.

Note: If a hardware configuration change has been made which affects, for example, a cable plugged into an IPL port, you must update the configuration data file before using the LKP function.

At installation time, you must:

1. Perform a MOSS IML.
2. Execute the Link IPL Port function to inform the 3745 from which hosts a 3745 initialization can be expected.

   For a *link-attached 3745,* the control program can be transferred via a communication line (SDLC link). You must give the characteristics of the SDLC link that connects both 3745 controllers used for initialization.
3. Perform an IPL.

Note: No priority is assigned to channel adapters or link IPL ports. The first IPL request that comes from a host is taken.

Any modifications become effective with the next IPL.

Models 130, 150, 160, 170, 17A
Models 210, 21A, 310, 31A

L K P SEND

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
 CCU-A                 LINK IPL PORTS

 -SELECT IPL PORT OPTION (0 TO 9) ==>

  0    = CHANNEL ADAPTERS (DISPLAY ONLY)
  1-8  = LINK IPL PORT SLOT
  9    = LINK COMMON OPTIONS
         (CONTROLLER ADDRESS AND TIMERS)

            LINK IPL PORTS

PORT SLOT  :   1    2    3    4    5    6    7    8
LINE ADDRESS: ---- ---- ---- ---- ---- ---- ---- ----  A
===>

F1:END               F3:ALARM
```

From the above screen:

- You can display CAs that have been defined in the 3745 configuration:
  - Select option 0, press SEND.
  - Go to page 222.
- You can define (or update) a link IPL port:
  - Select option 1-8, press SEND.
  - Go to page 223.
- You can delete a defined link IPL port:
  - Select option 1-8, press SEND.
  - Go to page 228.
- You can define (or update) the options common to all the link IPL ports:
  - Select option 9, press SEND.
  - Go to page 229.

The line addresses of the defined link IPL ports are displayed on line **A**.

Models 410, 41A, 610, 61A

L K P SEND

The following screen is displayed if you have a dual-CCU model in either twin-dual or twin-backup mode. If you have any other model, the Select IPL Port Option screen on page 221 is displayed.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
                    LINK IPL PORTS

SELECT CCU (A OR B) ==>

  A = CCU-A
  B = CCU-B









===>

F1:END               F3:ALARM
```

From this screen you must choose either CCU-A or CCU-B.

Then the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
 CCU-A                LINK IPL PORTS

 -SELECT IPL PORT OPTION (0 TO 9) ==>

  0    = CHANNEL ADAPTERS (DISPLAY ONLY)
  1-8  = LINK IPL PORT SLOT
  9    = LINK COMMON OPTIONS
         (CONTROLLER ADDRESS AND TIMERS)

           LINK IPL PORTS

PORT SLOT  :   1    2    3    4    5    6    7    8
LINE ADDRESS: ---- ---- ---- ---- ---- ---- ---- ----  A
===>

F1:END               F3:ALARM                F6:QUIT
```

From the above screen:

- You can display CAs that have been defined in the 3745 configuration:
  - Select option 0, press SEND.
  - Go to page 222.
- You can define (or update) a link IPL port:
  - Select option 1-8, press SEND.
  - Go to page 223.
- You can delete a defined link IPL port:
  - Select option 1-8, press SEND.
  - Go to page 228.
- You can define (or update) the options common to all the link IPL ports:
  - Select option 9, press SEND.
  - Go to page 229.
- Press F6 to return to the main Link IPL Ports Selection screen.

The line addresses of the defined link IPL ports are displayed on line **A** .

Channel Adapter IPL Port Display

Models 130, 150, 160, 170, 17A
Models 210, 21A, 310, 31A

L K P SEND ■ 0 SEND

Models 410, 41A, 610, 61A

L K P SEND ■ A or B SEND ■ 0 SEND

The following screen displays the channel adapters that have been defined in the 3745 configuration.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
 CCU A                 CHANNEL ADAPTERS

CHANNEL ADAPTER IS INSTALLED (Y)
CHANNEL ADAPTER IS NOT INSTALLED (N)


          CA-1  = Y    CA-5  = Y   CA-9  = Y   CA-13 = Y
          CA-2  = Y    CA-6  = Y   CA-10 = Y   CA-14 = Y
          CA-3  = Y    CA-7  = Y   CA-11 = Y   CA-15 = Y
          CA-4  = Y    CA-8  = Y   CA-12 = Y   CA-16 = Y




===>

F1:END               F3:ALARM         F6:QUIT
```

Depending on the selected CCU operating mode, only channel adapters from 1 to 4 and from 9 to 12 may be displayed.

The preceding screen displays channel adapters installed and attached to the CCU A in twin-standby mode.

Note: During IPL phase 4, the LKP for a low/high speed port may show 'N', as a result of being specified as external clock, which means that it cannot be loaded before the host makes contact. Once the host has made contact, the LKP will change to 'Y'.

Defining a Link IPL Port

Models 130, 150, 160, 170, 17A
Models 210, 21A, 310, 31A

L K P [SEND] ■ X [SEND]

X = link IPL port slot (1 to 8)

Models 410, 41A, 610, 61A

L K P [SEND] ■ A or B [SEND] ■ X [SEND]

X = link IPL port slot (1 to 8)

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
     CCU A                LINK IPL PORT 2
     - LINE ADDRESS (0 TO 1039)              ==>  B
     - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) ==>  C

     WARNING : FOR HPTSS PORTS, ENTER LINE ADDRESS ONLY.

     -START ISIT DURING REMOTE LOAD/DUMP (Y = YES, N = NO) ==> N  X




===>

F1:END             F3:ALARM       F6:QUIT                  F8:FWD
```

From the above screen:

- You can define a link IPL port:
  1. Enter a line address **B** .
     The message 'INVALID INPUT' is displayed if a line address out of the allowed range is entered.
  2. Select a clock option **C** .
  3. Press SEND, then go to page:
     - 224 for TSS
     - 227 for HPTSS.
- You can start a link IPL port trace (LIPT) on a remote controller **X** .
  Enter 'Y' to start the link IPL port trace (which is similar to the I-SIT function on a local controller).

B This is the decimal line address that will be used as an IPL port. If you specify a line address for any of the IPL ports, you must also specify the controller SDLC address and link time out values; to do so, use the “Defining Link Common Options” screen page 229.

The address you enter must be that of a 3745 line that has been physically installed and configured.

- If you enter the address of an uninstalled or unconfigured line, CABLE DOES NOT EXIST is displayed.
- If you enter an address in the range 1056 to 1071, the message 'INVALID INPUT' is displayed. This range of addresses is reserved for ESS lines (Ethernet lines).

C If the modem supplies the clock, enter E. If the link-attached 3745 supplies the clock, enter D (direct attachment). See the *3745 Introduction* to determine the direct-attached clock speeds supported.

For example, LIC5 and LIC6 have external clocks, and so E should be entered.

Note: For HPTSS link IPL port, the clocking is automatically set by the system to D (DIRECT-ATTACH) or E (EXTERNAL CLOCK) based on the type of cable connected to the HPTSS port.

X This option is very useful on a **remote controller** to trace all activities between CLDP and the line defined as link IPL port.

This option is similar to the MOSS I-SIT function (internal scanner interface trace) which can be performed on the local controller. The main difference is that the traced data is not displayed on a screen and must be analyzed by the service representative after he has performed a scanner dump.

The trace process in the scanner stays active on the remote controller until NCP is loaded.

Link IPL Port Characteristics: TSS

The following screen is displayed if you selected E (External Clock) on the screen on page 223:

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
     CCU A                  LINK IPL PORT X
 B  - LINE ADDRESS  (0 TO 1039)                 : XXXX
 C  - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E)   : E
 D  - DUPLEX        (D) OR HALF DUPLEX    (H) ==> X
 E  - ENABLE TIMER IN 0.1 SECOND INTERVALS    ==> XXXX
    - LINK INTERFACE OPTIONS (Y = YES, N = NO)  :
 F      TRANSMIT TWO FLAGS ==> X TRANSMIT FLAGS BETWEEN FRAMES ==> X  L
 G      NRZI               ==> X DX FACILITY                   ==> X  M
 H      SWITCHED LINE      ==> X RING INDICATOR                ==> X  N
 I      ANSWER TONE        ==> X ECHO MODE                     ==> X  O
 X  - DATA RATE (H = HIGH, L = LOW)            ==> X
 J  - EXTERNAL LINE SPEED IN KBPS              ==> X
      (1=LOWER OR EQUAL TO 9.6, 2=GREATER THAN 128, 3=OTHER CASES)
 ===>
F1:END              F3:ALARM       F6:QUIT                F8:FWD
```

The following screen is displayed if you selected D (Direct Attach) on the screen on page 223:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
    CCU A                LINK IPL PORT X
 B  - LINE ADDRESS  (0 TO 1039)                : XXXX
 C  - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E)  : D
 D  - DUPLEX        (D) OR HALF DUPLEX    (H) ==> X
 E  - ENABLE TIMER IN 0.1 SECOND INTERVALS    ==> XXXX
    - LINK INTERFACE OPTIONS (Y = YES, N = NO)  :
 F     TRANSMIT TWO FLAGS ==> X TRANSMIT FLAGS BETWEEN FRAMES ==> X  L
 G     NRZI               ==> X DX FACILITY                   ==> X  M



 K  - DIRECT-ATTACH SPEED IN BPS               ==> X
      (1=2400, 2=4800, 3=9600, 4=19200,, 5=38400, 6=55855, 7=245760, 8=RPQ)
 ===>
F1:END              F3:ALARM       F6:QUIT                F8:FWD
```

From the above screen:

- You cannot modify the values of **B** and **C**. These values were entered on the screen on page 223.
- Enter (or modify) the link IPL port characteristics.
- Press SEND. The port characteristics are filed unless there is an error.
- Press F6 and select option 9 to display (or modify) the link common options. If you do not define the link common options, the link IPL port is inoperative. Go to page 229.

D D for duplex.
H for half-duplex.

If you enter D (duplex), you must enter Y at position **M**.

E The enable timer is used by the scanner to limit the waiting time for the proper response from the line interface. Once it is loaded, the control program can change this value. Specify a maximum wait time of zero for modem interface leads to respond to changes in the 3745 interface leads.

For example:

- 'data set ready' coming active in response to 'data terminal ready'
- 'clear to send' coming active after 'request to send' has been raised
- 'clear to send' dropping in response to 'request to send' dropping.

Zero will result in an infinite wait. The default value of the ENABLTO parameter of the BUILD macro is 022 (2.2 seconds). Consult your data communication equipment specifications.

F At the beginning of the transmission, the scanner sends two flags before the SDLC message is transmitted if Y is entered.

G Specifies whether the data terminal equipment at the ends of the SDLC link must operate in non-return-to-zero change-on-ones recording (NRZ-1) mode (NRZI = Y). The NRZ-1 setting must match the NRZ-1 setting generated in the channel-attached controller line macro that represents the SDLC link between the channel-attached and link-attached controllers. If you do not plan to operate the link in NRZ-1 mode, specify NRZI = N.

H (External clocking only) Specifies whether the physical path making up the SDLC link is switched (SWITCHED LINE = Y) or nonswitched (SWITCHED LINE = N). If the path is switched, the controller can monitor the link for the 'ring indicator' signal (RING INDICATOR = Y) and present an answer tone (ANSWER TONE = Y).

LIC Types 4, 5, or 6 do not support switched operation.

I (External clocking only) Specifies whether the link-attached controller is to transmit an answer tone to the calling station (ANSWER TONE = Y) to signify completion of the connection. ANSWER TONE = Y is valid only for incoming calls on switched lines (SWITCHED LINE = Y). An answer tone is required only if the modem at the call-originate location requires an answer tone and the modem at the receiving location is not capable of generating one. Consult your data communication equipment specifications.

Note: LIC types 5 and 6 do not support the answer tone feature. This field must not be altered.

J EXTERNAL LINE SPEED IN KBPS is needed by the scanner to initialize the lines. Select a value from 1 to 3. There is no external line speed for LIC types 5 and 6. This field must not be altered.

K DIRECT-ATTACH SPEED IN BPS. Select a value from 1 to 7. There is no external line speed for LIC types 5 and 6. This field must not be altered. Value 8 is reserved for Request Price Quotation (RPQ). Ignore this field if you are not using RPQ.

L Between two SDLC transmissions the scanner sends the flags continuously. If this parameter is not specified, the TSS will keep the line at a mark level.

M Specifies whether the communication line and modem constitute a half-duplex facility (DX FACILITY = N) or a duplex facility (DX FACILITY = Y).

This should not be confused with half-duplex or duplex data transfer. The entry specifies only the physical characteristics of the communication facility (line and modem).

N (External clocking only) For modems outside the USA that go off-hook when 'data terminal ready' is raised by the 3745, 'ring indicator' is monitored before 'data terminal ready' is raised so that this situation will not occur until an actual connection has been made (RING INDICATOR = Y).

For all other modem types, RING INDICATOR = N (consult your data communication equipment specifications). The Y option is valid only for incoming calls on switched lines (SWITCHED LINE = Y).

Note: The ring indicator is not valid for LIC types 5 and 6. This field cannot be altered.

O (External clocking only) Echo mode is specified only when the TSS is connected to satellite transmission equipment.

X DATA RATE. This feature allows you to select the setting on a modem, if the modem supports Data Rate Select. **This does NOT mean that if this is set to high, HISPEED=YES must be coded in NCP**.

Link IPL Port Characteristics: HPTSS

If you entered an HPTSS line address for the link IPL port, the following screen is displayed.

Notes:

1. For HPTSS link IPL port, the clocking is automatically set by the system to 'D' (DIRECT-ATTACH) or 'E' (EXTERNAL CLOCK) based on the type of cable connected to the HPTSS port.
2. You can define only one port per HPTSS at any one time. If you try to define two, the second one will not be defined.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
     CCU A                  LINK IPL PORT X
     - LINE ADDRESS  (0 to 1039)                : XXXX
     - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E)  : X
     E - ENABLE TIMER IN 0.1 SECOND INTERVALS   ==> XXXX
     P - REPLY TIMER IN 0.1 SECOND INTERVALS    ==> XXXX
     - LINK INTERFACE OPTIONS (Y = YES, N = NO) :
     G     NRZI               ==> X
     F     TRANSMIT TWO FLAGS ==> X
     L     TRANSMIT FLAGS BETWEEN FRAMES ==> X
     O     ECHO MODE          ==> X


     Q

F1:END            F3:ALARM       F6:QUIT               F8:FWD
```

From the above screen:

- Enter (or modify) the link IPL port characteristics.
- Press SEND. The port characteristics are filed unless there is an error.
- Press F6 and select option 9 to display (or modify) the link common options. If you do not define the link common options, the link IPL port is inoperative. Go to page 229.

  You can enable only one port per HPTSS. If you try to enable two, the second one will not be enabled.

E, **F**, **G**, **L**, and **O** same as for TSS. See page 224 for TSS.

P The reply timer defines the amount of time you must wait for data during transmission turnaround time.

Q For HPTSS link IPL port, the message DIRECT-ATTACH SPEED IN KBPS is displayed.

Deleting a Defined IPL Port

You may delete a link IPL port that you already defined.

Models 130, 150, 160, 170, 17A
Models 210, 21A, 310, 31A

L K P [SEND] ■ X [SEND]

X = link IPL port slot (1 to 8)

Models 410, 41A, 610, 61A

L K P [SEND] ■ A or B [SEND] ■ X [SEND]

X = link IPL port slot (1 to 8)

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
     CCU A                LINK IPL PORT 2
     - LINE ADDRESS (0 TO 1039)              ==>  B
     - DIRECT-ATTACH (D) OR EXTERNAL CLOCK (E) ==>

     WARNING : FOR HPTSS PORTS, ENTER LINE ADDRESS ONLY.

     -START ISIT DURING REMOTE LOAD/DUMP (Y = YES, N = NO) ==> N




===>

F1:END             F3:ALARM       F6:QUIT                  F8:FWD
```

From the above screen:

To delete an already defined link IPL port:

- Blank out the address on line **B** .
- Press SEND. The configuration data file is automatically updated.
- The following message is then displayed:

  UPDATE OF THE CDF FILE SUCCESSFUL

Defining Link Common Options

Models 130, 150, 160, 170, 17A
Models 210, 21A, 310, 31A

L K P [SEND] ■ 9 [SEND]

Models 410, 41A, 610, 61A

L K P [SEND] ■ A or B [SEND] ■ 9 [SEND]

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: LINK IPL PORTS
 CCU A              LINK IPL PORT - COMMON OPTIONS

 - SDLC CONTROLLER ADDRESS (1 TO FE) ==>    T
 - TIMER VALUES (1 TO 3 DIGITS IN 0.1 SEC INTERVALS)

     DISABLE TIMER (1 TO 200) ==> 2     R
     LINK ACTIVITY TIMER      ==> 600   S









===>

F1:END               F3:ALARM         F6:QUIT
```

From the above screen:

1. Enter the SDLC controller address **T** that will be used by the link-attached controller when communicating with the channel-attached controller.
   Remote controller address (link attached) and local controller address (channel attached) must recognize each other to be identified at both ends of the link.

   This address is the one that is returned by the responder controller to the requester controller when using the MOSS SAT function (stand-alone link tests).
   Refer to pages 298 and 300 for an illustration of environments in which the SDLC controller address is used.
2. You may modify the disable timer **R** and the link activity timer **S**.
3. Press SEND.

R If the modem interface characteristics at the link-attached controller are the same as at the channel-attached controller, use the value that was generated in the channel-attached controller DSABLTO parameter of the BUILD macro statement. The DSABLTO parameter represents the SDLC link between the channel-attached and link-attached controllers.

The disable timer is used by the scanner as a wait time before checking for the proper response from the line interface when CLDP attempts to disable the line. Once it is loaded, the control program can change this value. Specify the time for the scanner to wait before checking that 'data set ready' has dropped after 'data terminal ready' has dropped. The Common Option screen indicates the default time out used by a local NCP (3 seconds). If the SDLC link is a leased line, the disable timer should be smaller (for example, 0.1 second). Consult your data communication equipment specifications.

S Use the value generated in the link-attached controller ACTIVTO group macro that represents the SDLC link between the channel-attached and link-attached controllers.

The link activity timer specifies the time that the CLDP will wait for communication from the channel-attached host before it abends. Once it is loaded, the control program can change this value. Zero will result in an infinite time out. The Common Option screen indicates the default time out used by a local NCP (600 or 1 minute) for SDLC links.

Microcode Fixes (MCF)

Between two major engineering changes, modifications referred to as microcode fixes (MCFs) may be made to the microcode.

For All Models Except the 17A, 21A, 31A, 41A, and 61A

Microcode modification is a two step process:

1. The MCF MOSS function transfers the MCFs onto the MOSS disk by means of either:
   - A MCF file transfer from RETAIN

     or
   - A set of 5.25 inch diskettes.
2. The MCF MOSS function then applies the MCFs to the existing 3745 microcode.

For Models 17A, 21A, 31A, 41A, and 61A

Microcode modification is a three step process:

1. The MCFs are first transferred onto the MOSS-E disk in groups called MCLs (microcode change levels). This is done by the MOSS-E function 'Manage microcode' using one of the following media:
   - An electronic MCL file transfer from RETAIN
   - An electronic MCL file transfer from a remote console using DCAF
   - A set of 3.5 inch diskettes
   - A magneto-optical disk.
2. The MCF MOSS function transfers the MCL files from the MOSS-E disk to the MOSS disk
3. The MCF MOSS function applies the MCFs to the 3745 microcode.

Preparation

To perform the MCF function, MOSS must be **offline** or **alone** (check the status of the MOSS in MSA field d). To set MOSS offline, go to page 243.

MCF Options

The MCF options are explained in the following table.

MCF Options	Go to Page
Display a history table that lists all upgrades and restores.	234
Apply (upgrade) all MCFs transferred to you.	235
Restore the previous level of the microcode, if you suspect that the MCFs are incompatible with your applications.	236
List old MCFs that have been applied in an earlier upgrade of the microcode. Old MCFs can no longer be restored. They are a permanent part of the code.	236
List new MCFs that have just been transferred, whether applied or not.	236
Transfer the MCFs from the diskette to MOSS disk.	237
Transfer the MCFs from the MOSS-E disk to MOSS disk.	239

Notes:

1. All MCFs transferred together to your disk are applied or restored together. You cannot apply or restore an MCF individually.
2. The group of MCFs applied or restored together is identified by the number of the last MCF in the group.

Selecting the MCF Function

All Models
except 17A, 21A, 31A, 41A, 61A

M C F SEND

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES

 - SELECT ONE OPTION (1 TO 2), THEN PRESS SEND ==>


     1 = MCF MANAGEMENT
         (UPGRADE OR RESTORE MICROCODE, LIST, HISTORY TABLE)

     2 = MCF FILE COPY FROM DISKETTE TO DISK


         EC LEVEL = XXXXXXX


===>

F1:END      F3:ALARM
```

Models 17A, 21A, 31A, 41A, 61A

M C F Enter

The following screen is displayed:

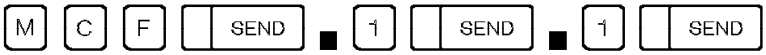
```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FACILITIES

  - SELECT ONE OPTION (1 TO 2), THEN PRESS SEND ==>


      1 = MCF MANAGEMENT
          (UPGRADE OR RESTORE MICROCODE, LIST, HISTORY TABLE)

      2 = MCF COPY FROM MOSS-E DISK TO MOSS DISK


          EC LEVEL = XXXXXXX


===>

F1: END   F2: MENU2  F3: ALARM
```

From the MCF selection screen, if you select option 1 (MCF Management) the following screen is displayed:


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                              MCF MANAGEMENT
                                                LAST APPLIED MCF = M198A 038

 - SELECT ONE OPTION (1 TO 5)  ==>

     1 = DISPLAY HISTORY TABLE
     2 = AUTOMATIC UPGRADE OF THE MICROCODE
     3 = AUTOMATIC RESTORE OF THE MICROCODE
     4 = LIST OLD MCF(S)
     5 = LIST NEW MCF(S)



===>

F1:END      F3:ALARM        F6:QUIT
```

Select an option. If you select option 2 or 3, you are requested to enter the date.

Displaying the MCF History Table




```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                                MCF HISTORY                SCREEN 1/1

 A  MM/DD/YY                                B  LEVEL

    10/04/88  CODE UPGRADED TO LEVEL        M1V9A006
    10/04/88  CODE UPGRADED TO LEVEL        M1V9A008
    10/04/88  CODE UPGRADED TO LEVEL        M1V9A006
    10/04/88  CODE UPGRADED TO LEVEL        M1V9A008
    10/04/88  CODE UPGRADED TO LEVEL        M1V9A015


===>

F1:END      F3:ALARM                F6:QUIT
```

You cannot update the information displayed on this screen.

This screen gives the latest level of the microcode:

A Date when the last MCF was applied or restored.

B The level identified by the last MCF applied or restored.

Upgrading the Microcode

All MCFs are applied automatically as soon as you have selected the apply option.

When all MCFs are applied, the message UPGRADE COMPLETED, PRESS SEND is displayed.

UPGRADE COMPLETED, PRESS SEND

When this message is displayed you must:

- **IML the MOSS**. This is a mandatory operation.
- **IML the scanners** (MOSS IMS function). This is a mandatory operation only if the MCF applies to scanners.

The MCF will be effective after the next IML of the MOSS and scanners.

The IML procedures are given on page 195.

If an MCF cannot be applied, a screen similar to the following one is displayed, telling you why the MCF was not applied.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
 IDENTIFIER                UPGRADE OF MICROCODE            SCREEN 1/2

 M198A001APPLIED
 M198A002 APPLIED
 M198A003 APPLIED
 M198A004 APPLIED
 M198A005 APPLIED
 M198A006 APPLIED
 M198A007 APPLIED
 M198A008 NOT APPLIED: MCF DATA DOES NOT MATCH 'MODULE DATA'


  -UPGRADE ABORTED,  PRESS SEND
===>

F1:END      F3:ALARM
```

From the above screen:

- Press SEND. All applied MCFs will be restored, but the MCF function will not be canceled.

If a disk error occurs while applying MCFs, the MCF function is canceled, the message DISK ERROR: MCF FUNCTION CANCELED is displayed, and MCFs are not restored. Restart the MCF function. If the problem persists, contact the personnel responsible for problem determination.

Restoring the Microcode

If you think that the most recently applied MCFs are incompatible with your applications, you may restore the microcode to the previous level. All the last-applied MCFs are restored automatically as soon as you select the Restore MCF option.

M C F SEND . 1 SEND . 3 SEND

When all the MCFs are restored, the message RESTORE COMPLETED, PRESS SEND is displayed. IML the MOSS and scanners. The IML procedures are given on page 195.

Listing Old MCFs

Old MCFs are those already applied in an earlier upgrade of the microcode. They can no longer be restored.

M C F SEND . 1 SEND . 4 SEND

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
 IDENTIFIER                      OLD MCF(S)                  SCREEN 1/1

 M1V9A001 A ==> S COMMAND REJECT TO A V.25 CALL OUT.  A
 M1V9A002 A ==>   200MS TIMEOUT FROM CCLID PROCESSING CAUSESUNEXPECTED
 M1V9A003 A ==>   CCU DIAG HG HH HI RUN ALL OK
 M1V9A004 A ==>   BYPASS SUPERBER LOGGING
 M1V9A005 A ==>   V.25 BIS CALLOUT DOES NOT TRANSMIT THE DIAL DIGITS
 M1V9A006 A ==>   C8, CC, CE PROBLEM WHEN RUNNING BURLOOP ASPIC ROUTINE
 M1V9A007 A ==>   UNLOCK AUTOBER
 M1V9A008 A ==>   DUMMY REFCODES INTERPRETATION LEAD TO NO MESSAGES
 (A=APPLIED, OLD MCF(S) ARE ALWAYS APPLIED)
 -TO SCAN AN MCF, ENTER S AGAINST IDENTIFIER
===>

F1:END      F3:ALARM    F5:BOTTOM  F6:QUIT                F8:FORWARD
```

From the above screen:

You can scan an MCF. To do so:

- Enter S against the MCF identifier, as shown on line **A**.
- Press SEND.

Listing New MCFs

New MCFs are those in the last group transferred or received with new diskettes, whether they are applied or not.

M C F SEND . 1 SEND . 5 SEND

The screen is similar to that shown under Displaying Old MCFs.

Transferring MCFs from Diskette to Disk

All Models
except 17A, 21A, 31A, 41A, 61A

Make sure that MOSS is offline (or alone). If it is online, set it offline (page 243). To transfer MCFs, follow the procedure given below.


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                                  MCF FILE COPY

- MOUNT THE NEW DISKETTE THAT CONTAINS MCF FILE, THEN PRESS SEND









===>

F1:END      F3:ALARM           F6:QUIT
```

Messages displayed in response to transfer problems are defined in Appendix D, Messages.

1. Mount the secondary diskette containing the MCF.

2. Press SEND. The following screen is displayed:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FIXES
                                MCF FILE COPY

     DISK INFORMATION                    DISKETTE INFORMATION

 EC NUMBER:        XXXXXXX            EC NUMBER:        XXXXXXX
 LAST MCF NUMBER:  XXXXXXXX           LAST MCF NUMBER:  XXXXXXXX
 LAST APPLIED MCF: XXXXXXXX


 - PLEASE CONFIRM (Y OR N), THEN PRESS SEND ==>



===>

F1:END      F3:ALARM          F6:QUIT
```

From the above screen:

- Confirm the transfer: Y then SEND .

  or

- To leave the function: N then SEND .

3. When all MCFs are successfully transferred, the message MCF FILE COPIED ON DISK is displayed.
4. Apply the MCFs that are on the MOSS disk (page 235).
   When all MCFs are applied, the message UPGRADE COMPLETED, PRESS SEND is displayed.
5. Press SEND.
6. IML MOSS in order to use the new microcode (page 195).

EC NUMBER: Is the EC level of the MOSS microcode.

LAST MCF NUMBER: Is the number of the last MCF on the file (disk or diskette).

LAST APPLIED MCF: Is the number of the last MCF applied on the MOSS disk file.

- If the EC levels of the diskette and of the MOSS disk are different, the message DISK AND DISKETTE EC NUMBERS ARE DIFFERENT is displayed. This message will be displayed until the correct diskette is mounted. To leave the function, type N or press F1.
- If the last MCF number of the diskette is lower than or equal to that of the MOSS disk, the message DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR is displayed. This message will be displayed until the correct diskette is mounted. To leave the function, type N or press F1.
- When a previous operation of applying or restoring MCFs cannot run to completion, the message 'FUNCTION CANCELED: UPGRADE/RESTORE RECOVERY PENDING' is displayed, and the function is canceled. The MCF apply or restore operation which failed must be restarted and completed before transferring a new MCF file.

- To apply the MCFs that are on the MOSS disk, see “Upgrading the Microcode” on page 235.

Transferring MCLs from MOSS-E Disk to MOSS Disk

Models 17A, 21A, 31A, 41A, 61A

Make sure that MOSS is offline (or alone). If it is online, set it offline (page 243).

Transfer of MCFs is made in groups or 'bursts' called MCLs (microcode levels), which have been stored on the MOSS-E disk from diskettes or RETAIN. To transfer MCLs (each containing several MCFs) follow the procedure given below.

1. M C F Enter ■ 2 Enter

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FACILITIES

              MCF COPY FROM MOSS-E DISK TO MOSS DISK

          LAST MCF COPIED:             yyyyyyyy (MCLxxx)

 - DO YOU WANT TO COPY MCF(S) xxxxxxxx-yyyyyyyy (MCLxxx) (Y/N)? ==>

 - PRESS SEND


===>
F1: END   F2: MENU2
```

From the above screen:

- Confirm the transfer of the first MCL: Y then SEND.

  or

- To leave the function: N then SEND .

Messages displayed in response to transfer problems are defined in Appendix D, Messages.

In all cases where your request was canceled use the F6 key to return to the main MCF menu.

2. When the first or next MCL has been successfully copied:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: MICROCODE FACILITIES

             MCF COPY FROM MOSS-E DISK TO MOSS DISK


          MCF(S) xxxxxxxx-yyyyyyyy (MCLxxx) SUCCESSFULLY COPIED

 - DO YOU WANT TO COPY MCF(S) OF THE NEXT MCL (Y/N)?  ==>


 - PRESS SEND

===>
F1: END   F2: MENU2
```

From the above screen:

Confirm the transfer of the next MCL:

Y then SEND.

or

- To leave the function: N then SEND .

3. Repeat step 2 for each MCL to be copied to the MOSS disk.
4. When you have copied all available MCLs the following message appears:

```
 - NO MORE MCF(S) TO BE COPIED


===>

F1: END   F2: MENU2                    F6: QUIT
```

From the above screen:

- F1 to leave the function.

or

- F6 to return to the MCF main menu.

Machine Level Table (MLT)

Use the MLT function to display the modification level of the microcode and control programs. This function displays the following information:

- The control program version that is loaded in each CCU
- The control program load name (8 characters) for each CCU
- The control program load id (8 characters) for each CCU
- NCP level modifications
- EC level of microcode
- The last MCF applied.
- The date of the last MCF applied.

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: MACHINE LVL TABLE

     CONTROL PROGRAM LOADED ON CCU A:  NCP            PETITB4   VER5REL2
     VERSION: 04  LEVEL: 03  MODIFICATION: 01
                                                 A
     CONTROL PROGRAM LOADED ON CCU B:  NCP            RPETITB4  VER5REL2
     VERSION: 04  LEVEL: 03  MODIFICATION: 01

     EC LEVEL : A47004              B



     LAST APPLIED MCF : M198A038  ON  11/04/86      C

===>

F1:END  F2:MENU2  F3:ALARM   F4:MENU1
```

You cannot update the information displayed on this screen.

Note: Only CCU A is displayed for models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31Aand 310.

Use the following F keys when they are displayed on the screen. Press:

- F4 to display the Menu 1 functions
- F6 to display the Rules screen.

A Control program identification. If no control program is loaded, NO CONTROL PROGRAM LOADED is displayed.

B Last EC level of microcode.

C Last-applied MCF and the date it was applied.

MOSS Off-Line (MOF)

Use the MOF function to set the MOSS off-line (logical disconnection between MOSS and the control program). You cannot set MOSS off-line while transferring a MOSS or scanner dump to the host, or when the CCU is stopped.

To set the MOSS **off-line**:

- If the MOSS is **on-line**, use the MOSS off-line function:

  To set the MOSS off-line on models 410, 41A, 610, and 61A:
  proceed as for the other models but each CCU must be selected and reset.
  Refer to “CCU Selection/Release (CSR) Models 410, 41A, 610, and 61A” on page 79.
- If the MOSS is **alone**, first IPL the 3745 (page 199), then select the MOSS on-line functions.

  This function is performed immediately, and the following message is displayed:

  MOSS OFFLINE IS IN PROGRESS.

When the function is performed, MSA field d displays MOSS-OFFLINE.

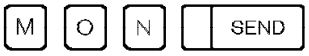
If you press the BREAK key while the MOSS off-line function is in progress, the following F keys are displayed:

- F4:IGNORE BREAK
- F5:QUIT
  When F5 is pressed, the MOSS off-line operation is canceled, the MOSS status stays on-line, even if the alarm B7 is already displayed. The alarm B7 must be ignored in this case.

MOSS On-Line (MON)

To set the MOSS on-line:

- If MOSS is **off-line**, use the MOSS on-line function:

  To set the MOSS on-line on models 410, 41A, 610, and 61A:
  proceed as for the other models but each CCU must be selected and reset, refer to page 79.

- If MOSS is **alone**, IPL the 3745 (page 199).

When the function is performed, MSA field d displays MOSS-ONLINE.

If you press the BREAK key while the MOSS on-line function is in progress, the following F keys are displayed:

- F4:IGNORE BREAK
- F5:QUIT
- F6:STR (start CCU).

Power Services (POS) Models 210 to 61A

You can select the Power Services (POS) function from Menu 1. It allows you to:

- Display power supply information
- Power up or power down a particular power supply
- Display airflow detector status.

Scheduled power ON

Do not forget to set POWER CONTROL = 2 on the control panel of the 3745.

This will enable:

- The scheduled power ON.
  Scheduled power ON is described in the *3745 Basic Operations Guide.*
- An automatic restart of the 3745 if the AC power is lost then restored.

P O S SEND The following screen is displayed:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES

- SELECT ONE OPTION (1 TO 5, OR D), THEN PRESS SEND ==>

   1 = DISPLAY 3745                   4 = DISPLAY 3746-L13
   2 = DISPLAY 3746-A11               5 = DISPLAY 3746-L14
   3 = DISPLAY 3746-A12               6 = DISPLAY 3746-L15


          D = DISPLAY AIRFLOW DETECTOR STATUS




===>

F1:END               F3:ALARM
```

Options 2 to 6 display screens only if the frames they refer to are installed.

Displaying Power Information for 3745 Frames

Select the appropriate option from the Power Services selection screen. If you select option 1, for example, the following screen is displayed for the 3745:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES
                    POWER INFORMATION: 3745
PS ID       STATUS    SUB-SYSTEM(S)      PS ID       STATUS    SUB-SYSTEM(S)

   1        UP         MOSS               8         UP        LA       1
   2        UP         CCU      A         9         NOREPLY   LA       3  ,4
   3        UP         CCU      B         10        UP        LA       5
   4        UP         CA       1         11        UP        LA       7  ,8
   -        -                              12        UP        LIC-UNIT  1
   6        UP         CA       5         13        UP          -
   -        -

-ENTER UXX OR DXX TO POWER-UP OR POWER-DOWN PS ID  XX ==>

===>

F1:END               F3:ALARM  F4:HELP  F6:QUIT  F8:FORWARD
```

From the above screen:

- Enter UXX to power up power supply XX
- Enter DXX to power down power supply XX.

An asterisk (*) at the right of the PS ID number denotes the presence of a LIC Type 5 or 6.

If while this screen is displayed a power supply for the 3745 gets a new status, the screen is automatically updated.

The help screen displays the meanings of the power supply statuses. See “Help Screen” on page 249.

The subsystems shown are the ones installed. If, for example, CA 8 is not installed, only CA 7 will be displayed.

When a power supply is not installed, a minus sign (-) is displayed in the status column and there is a blank in the subsystem column.

Confirming or Canceling a Power-Off Request

When you issue a power-off request for a CCU that is running, a channel adapter that is in the chain or a line adapter that is connected, you will get a warning/decision screen for each particular case. This will ask you to confirm or cancel the power-off operation by entering either Y or N.

After you confirm or cancel the power-off request, the Power Services Selection screen will be displayed again.

To display power information for the 3746-A11 and 3746-A12, or the 3746-L13 and 3746-L14, 3746-L15, select the appropriate option from the Power Services Selection screen. You will get screens similar to the 3745 screen.

Airflow Detector Status

To display the airflow detector status, select option D from the Power Services Selection screen.

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES

                         AIRFLOW DETECTOR STATUS


  AIRFLOW ID :  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
  STATUS     :  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

  AIRFLOW ID : 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
  STATUS     :  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

  STATUS MEANING : '*'  AIRFLOW OK OR NOT PRESENT
                   'F'  AIRFLOW AT FAULT

===>

F1:END               F3:ALARM                  F6:QUIT
```

If the airflow detector is functioning or not present, the status will be indicated by an asterisk (*). If the airflow detector is faulty, the status will be indicated by 'F'.

Help Screen

To display the help screen, press F4.

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: POWER SERVICES
                    MEANING OF PS ID STATUSES

 -      : POWER SUPPLY NOT INSTALLED
 UP     : POWER SUPPLY IS UP
DOWN    : POWER SUPPLY IS DOWN DUE TO AN OPERATOR REQUEST OR AN AIR FLOW FAULT

OCFAULT : POWER SUPPLY IS DOWN DUE TO AN OVERCURRENT
PSFAULT : POWER SUPPLY IS DOWN DUE TO AN OVER OR UNDERVOLTAGE
THERMAL : POWER SUPPLY IS DOWN DUE TO A THERMAL FAULT

NOREPLY : UNKNOWN STATUS DUE TO NO REPLY FROM POWER SUPPLY CONTROL CARD
INTERKO : UNKNOWN STATUS DUE TO A BUS ERROR
MMIO ERR: STATUS VALUE IS UNKNOWN
===>

F1:END               F3:ALARM                  F6:QUIT
```

The help screen displays the meanings of power supply statuses.

Port Swap File (PSF)

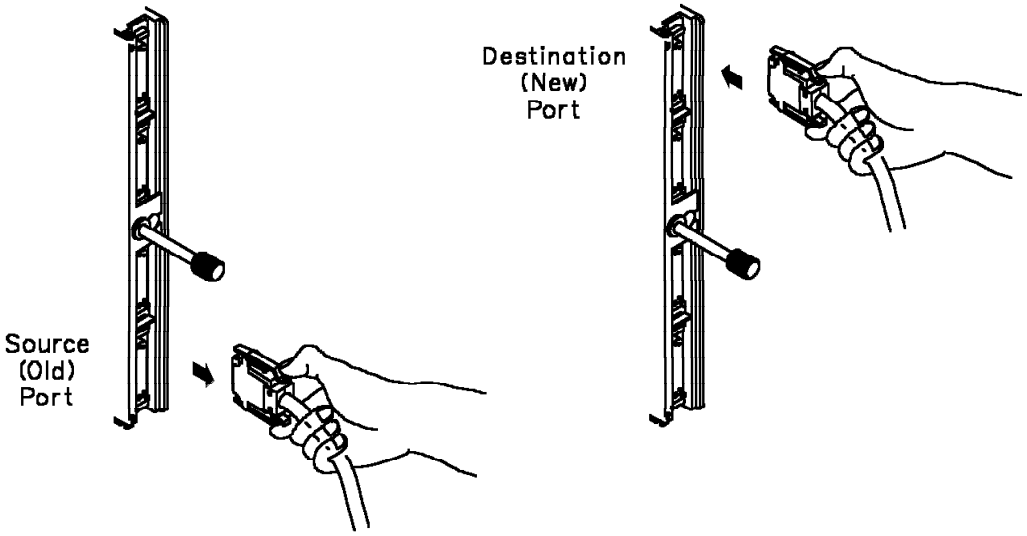
If a link to a port is unusable because of the failure of a line, LIC, or line adapter, you may **logically** and **physically** switch that link from its source port to a spare one (destination port).

Use the Port Swap File function to **logically** switch the ports and to create or update the MOSS port swap file.

In this procedure:

- The **source port**, sometimes called old port, is the one from which the line is disconnected.
- The **destination port**, sometimes called new port, is the one to which the line is reconnected.

Refer to the following figure as an example of a 3745 LIC.



The following table summarizes the recommended MOSS statuses before selecting a PSF option. You may display the port swap file at any time to verify the ports that are logically switched.

PSF Options	MOSS Status	Go to page
Create a port swap	Online	259
Reset a port swap	Alone Online	263
Display a port swap	Alone Offline Online	264

You can switch ports within the:

- TSS group. You can swap ports on line interface couplers (LIC)s of the same type, and on LICs of different types provided that these are compatible.
- HSS group.

- TRSS group. You can swap ports on token-ring interface couplers (TICs) type 1 or 2 connected to the same or to different token-ring adapters.
- ESS group. You can swap an ESS port only with another ESS port.
- The TIC3s on the 3746-900. You can swap ports on token-ring interface couplers (TICs) type 3 connected to the same or to different token-ring adapters.
- CLP group on the 3746-900. You can swap ports on LIC type 11 and its associated LCB and ARCs, and LIC type 12 of the same type, and on LICs/ARCs of different types provided that these are compatible.
- ESCP group on the 3746-900. No swapping allowed.

For Models 17A, 21A, 31A, 41A, and 61A you **cannot** connect a 3745 TIC1 or TIC2 to a 3746-900 TIC3.

In any case, you must comply with the following port swapping rules.

- **General rules**
  - The source port and the destination port must be connected to the same line adapter type, and for the line addresses 0000 to 1095 to **the same CCU**.
  - Check that the AUI cable is plugged for the destination port.
  - A port swap cannot be made on a line being traced (internal or external trace).
  - A port swap cannot be performed in an EP environment.
  - The line parameters of the destination port must be the same as the ones of the source port.
  - The line connected to the port to be swapped must be **inoperative (deactivated)**. It must not be an autocall line, or a line using a customer-implemented protocol unless the control blocks for LINES have been generated using COMPACB=YES in NCP system generation.
  - The NCP SYSGEN parameters of the source port will be applied to the destination port which must not be defined in the NCP SYSGEN.

    For TIC3 on the 3746-900 there must be a difference of a multiple of 32 port numbers between the source port and the destination port (port 2080 cannot be used for port swapping).
  - For the 3745 refer to “Configuration Data File (CDF)” to check that swapped port CDF descriptions (clock and cable information) are the same.

    For the 3746-900 there is no display or checking at the MOSS-E for clock and cable information.
  - If any hardware configuration change is required (for example, LIC change or cable change), the MOSS configuration data file (CDF) must have been updated before making a port swap. See “Configuration Data File (CDF)” on page 11. The MOSS-E CDF-E is automatically updated.
  - Refer to the *3745 Connection and Integration Guide* to locate and identify boards, LICs, TICs, and HSS ports on the machine.
  - For the CLP port swapping rules on the 3746-900, go to page 255

- **Swapping TSS ports**

  Two port swap situations can occur:

  1. Swapping ports between LICs of same type:
     for instance: LIC1 to LIC1, or LIC3 to LIC3.
  2. Swapping ports between LICs of different but compatible type:
     for instance: LIC1 to LIC3, or LIC1 to LIC5.

  The following table summarizes the LIC type compatibility for port swapping.

From/To	LIC1	LIC3	LIC4	LIC5	LIC6
LIC1	Yes	Yes		Yes	Yes
LIC3	Yes	Yes			Yes
LIC4			Yes		
LIC5	Yes			Yes	
LIC6	Yes	Yes			Yes

  1. **Swapping ports between LICs of same type**

     General rules apply to this swapping (refer to page 252).

  2. **Swapping ports between LICs of different but compatible type**

     – From the PSF menu, when you select the option 'CREATE A PORT SWAP', the system prompts you with another screen on which you must select the option: **2 = SWAP PORTS OF COMPATIBLE TYPE**. Below this option you can read the following message: **MISUSE OF THIS FUNCTION MAY GIVE UNEXPECTED RESULTS**. In this case there is no checking of the line parameters. It is obvious that performing this action requires a good knowledge of the affected network.

     – Swapping ports between a LIC1 or a LIC3 (with local modem) and a LIC5 or a LIC6 (with integrated modem) implies that modem characteristics at both ends of the link are compatible.

     – Check that the generated parameters are compatible with all the physical characteristics of the link. You may refer to the LID function to check these parameters.

     Notes:

     a. Swapping ports from a LIC3 to a LIC1 or a LIC6 is only possible if the transmission speed on the LIC3 was previously limited to 128 kbps. The NCP source for this LIC3 cannot have HISPEED=YES.

     b. When swapping ports of different but compatible LIC types, a configuration change may be required at the remote end.

- **Swapping HSS ports**

  General rules apply to this swapping (refer to page 252).

- **Swapping TRSS ports**
  Port swapping between two TICs connected to the same token-ring adapter or different token-ring adapters is allowed when the following conditions are met:
  - The source port and the destination port must be connected to the same ring.
  - The speed (4 or 16 Mbps) supported by the token-ring adapter of the destination port must be the same as the speed of the token-ring adapter of the source port.
  - The appropriate level of NCP must be used.
- **Swapping ESS ports**
  Port swapping between two connectors (J1 or J2) of the same or different Ethernet LAN adapters (ELA) is allowed when the following conditions are met:
  - The source port and the destination port must be connected to the same Ethernet type LAN.
  - The appropriate level of NCP must be used.

- **Swapping CLP ports on 3746-900**

  The general rules for ARC, LCB, LIC11, and LIC12 swapping are:

  – The total of ports which can be swapped is limited to 32.

  – The spare hardware for ARC, LIC11, and LIC12 and free ARC positions should be available according to the action to be done listed in the Table 42 on page 256.

  – The ARC type, cable type, and clocking parameters must be identical or compatible. There is **no automatic checking** of hardware compatibility. If a compatibility error is made during the swapping, a configuration error/mismatch is reported by an alert when the line is activated.

  – After swapping, check (in the active CDF-E) that the status of the resource is available.

Port Swap Compatibility: The following table summarizes the LIC/ARC type compatibility for port swapping.

Table 41. Port Swapping Compatibility

From/To	LIC11	LIC12	ARC1A1	ARC1A2	ARC1B	ARC1C	ARC1D	ARC3A1	ARC3A2	ARC3B	ARC3C	ARC3D	ARC4A1	ARC4A2	ARC4A3	ARC4A4	ARC4B	ARC4C	ARC4D
LIC11	Y																		
LIC12		Y						Y[1]	Y[1]	Y[1]			Y[1]	Y[1]			Y[1]		
ARC1A1			Y	Y[2]															
ARC1A2			Y[2]	Y															
ARC1B					Y														
ARC1C						Y													
ARC1D							Y												
ARC3A1		Y[1]						Y	Y[2]										
ARC3A2		Y[1]						Y[2]	Y										
ARC3B		Y[1]								Y									
ARC3C											Y								
ARC3D												Y							
ARC4A1		Y[1]											Y	Y[2]					
ARC4A2		Y[1]											Y[2]	Y					
ARC4A3															Y	Y[2]			
ARC4A4															Y[2]	Y			
ARC4B		Y[1]															Y		
ARC4C																		Y	
ARC4D																			Y

Y = Port swapping compatibility is Yes
[1] = Depending on clock speed and limited to up 256Kbps
[2] = Depending on cable length

Swapping ports between ARC or LICs of different but compatible type

- From the PSF menu, when you select the option 'CREATE A PORT SWAP', the system prompts you with another screen on which you must select the option: **2 = SWAP PORTS OF COMPATIBLE TYPE**. Below this option you can read the following message:
  MISUSE OF THIS FUNCTION MAY GIVE UNEXPECTED RESULTS.
  In this case there is no checking of the line parameters. It is obvious that performing this action requires a good knowledge of the affected network.
- Check that the generated parameters are compatible with all the physical characteristics of the link. You may refer to the LID function to check these parameters.

The following table describes the action to be done when swapping a suspected element, according to the number of lines which are failing.

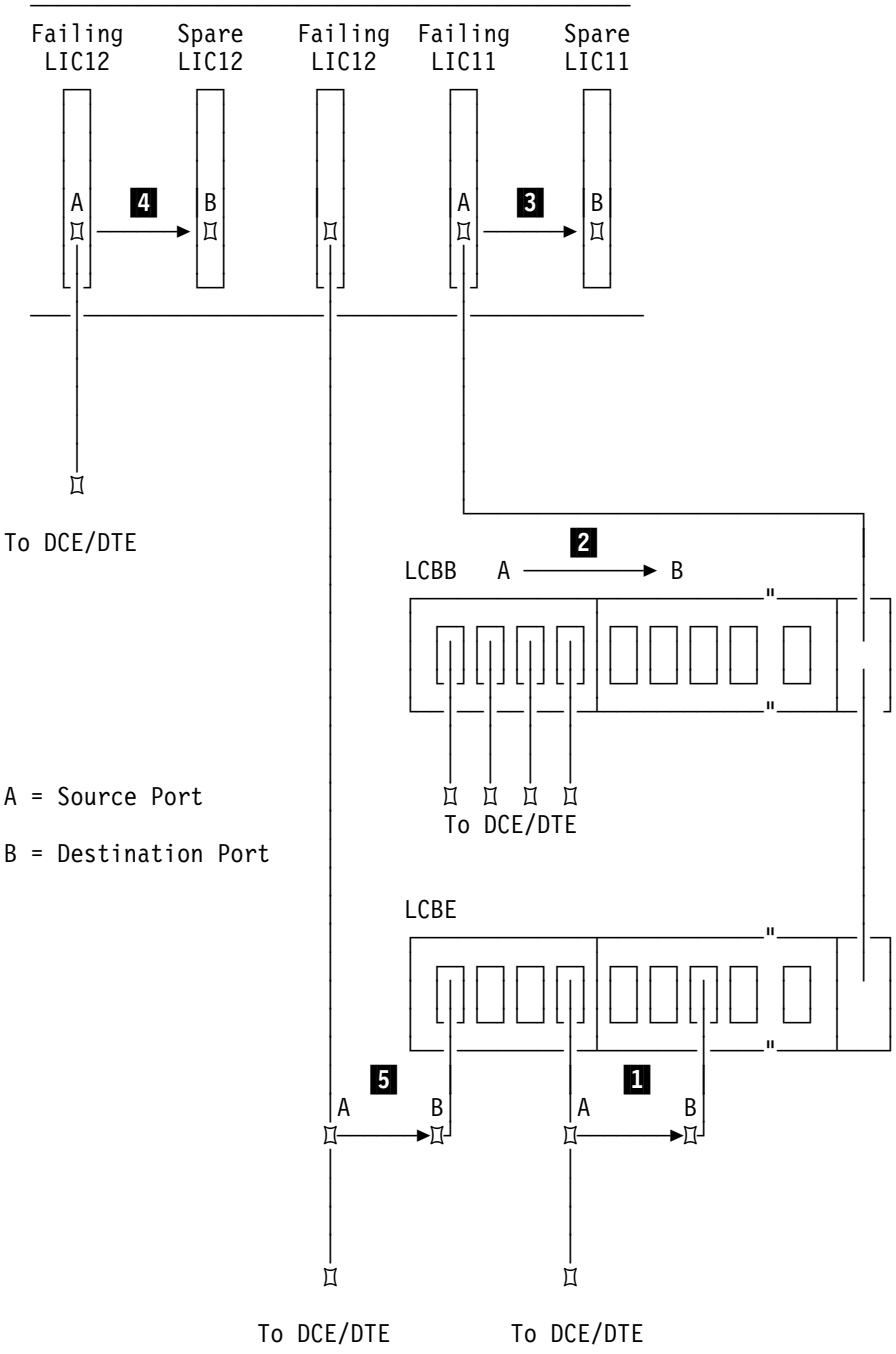
Table 42. Action to be Done

Number of Failing Lines	Suspected Element	Action to Be Done
One ARC line	Single ARC	Swap the end cable of the failing ARC with the end cable of a spare ARC **1**. See Note.
Four adjacent lines on an ARC group	ARC group	Unplug the four ARCs and plug them into four free LCB positions **2**. See Note.
15 or 30 lines on the same LIC11	LCBB or LCBE	Unplug the 15 or 30 ARCs and plug them into 15 or 30 free LCB positions. See Note.
Up to 30 lines on the same LIC11	LIC11	Unplug the cable from the suspected LIC11 and plug it into a spare LIC11 **3**.
One line on LIC12	LIC12	Unplug the cable from the suspected LIC12 and plug it into a spare LIC12 **4**. Or swap the end cable of the suspected LIC12 with the end cable of the spare ARC **5**. Refer to Table 41 on page 255 for details on LIC12/ARC compatibility.

Note: An ARC at 256Kbps clock speed must be alone in an ARC group.

1 **2** **3** **4** **5** : Refer to the next page for port swapping example.

Example of PORT Swapping



Selecting Port Swap

P S F SEND

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE


   - SELECT ONE PORT SWAP OPTION (1 TO 5) THEN PRESS SEND ==>

       1 = CREATE A PORT SWAP
       2 = RESET A PORT SWAP
       3 = DISPLAY PORT SWAPS OF CCU-A
       4 = DISPLAY PORT SWAPS OF CCU-B
       5 = DISPLAY PORT SWAPS OF CCU-A AND CCU-B

WARNING: IF ESS, CHECK AT TAILGATE AUI CABLE IS PLUGGED FOR THE DEST. PORT
                DEST. PORT



===>

F1:END  F2:MENU2  F3:ALARM
```

Note: The above screen is displayed for a model 410 and 610 with MOSS online. For 3745 Models 41A and 61A SEND is replaced by ENTR and F3:ALARM is not displayed.

Displayed options depend on the model and the status of the MOSS. For instance, for **Models 130, 150, 160, 170, 17A, 210, 21A, 310, and 31A,** only options 1, 2, and 3 are available.

Creating a Port Swap

Swapping ports is done in two main steps: physical switching and logical switching with acknowledgment from the control program. It is recommended that you follow the procedure in this order:

1. The MOSS must be online.
2. If the line at the host is active, deactivate it.
3. Physically move the cable from the source port to the destination port.
4. If a hardware configuration change has been made (for example, a cable change), make sure that the configuration data file has been updated.
5. If a swap is performed between ports of a different but compatible LIC type, make sure that the parameters of the source and destination lines are the same (refer to 'Swapping TSS Ports' on preceding pages).
6. Select the port swap function.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE


   - SELECT ONE OPTION (1 OR 2) THEN PRESS SEND ==>

       1 = SWAP PORTS OF SAME TYPE

       2 = SWAP PORTS OF COMPATIBLE TYPE
           (MISUSE OF THIS FUNCTION MAY GIVE UNEXPECTED RESULTS)







===>

F1:END  F2:MENU2  F3:ALARM            F6:QUIT
```

Enter 1 for port swap operation(s) between ports of the same type:

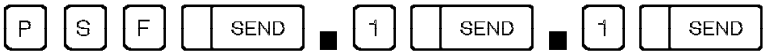
- TSS
- ESS
- HPTSS
- TRSS
- CLP (if there is a 3745-900 installed).
- TIC3 (if there is a 3745-900 installed). TRSS and TIC3 ports cannot be swapped.

Enter 2 for port swap operation(s) between ports of different but compatible types. For example, a port swap between a LIC type 1 and a LIC type 5. In this case, there is no checking of the functional line parameters.

Warning

When switching remote lines attached to ports on LICs of different types, operator intervention may be required at the remote site.

Swapping Ports of Same Type



Swapping Ports of Different but Compatible Type

Once you have selected the create option, the port swap file is displayed. For example:

All Models
except 17A, 21A, 31A, 41A, 61A

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                          PORT SWAP CREATION

    PORT     ATTACHED TO     SWAPPED TO    PORT    ATTACHED TO     CCU


      80   LIC 41  TYPE 5                   81   LIC 41  TYPE 5    A




 - SWAP PORT ==> G     TO PORT ==> H
===>

F1:END  F2:MENU2  F3:ALARM              F6:QUIT
```

Models 17A, 21A, 31A, 41A, 61A

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                          PORT SWAP CREATION ON CCU-A
     A         B                          C         D
    PORT     ATTACHED TO     SWAPPED TO    PORT    ATTACHED TO     CCU


      80   LIC 41  TYPE 5                   81   LIC 41  TYPE 5    A

    2144   3746 900 TIC3                  2176   3746 900 TIC3     A,B
    2368   3746 900 L11                   2432   3746 900 L11      A,B
     E
     F


 - SWAP PORT ==> G     TO PORT ==> H
===>

F1:END  F2:MENU2                          F6:QUIT
```

A The number of the source port.

B The number and type of the LIC to which the source is attached, if a TSS port.

C The number of the destination port.

D The number and type of the LIC of the destination port, if a TSS port.

E Status message area for CCU A.

F Status message area for CCU B.

See Appendix D, “Messages” on page 463 for the status messages.

From the above screen:

To create a new port swap:

- Enter the decimal address of the source port in **G** .
- Enter the decimal address of the destination port in **H** .
- Press SEND. The Port Information screen is displayed (see next example screen).

Note: For port swaps on HPTSS or TRSS lines, only the addresses of the source and destination ports are given.

Every time the CCU is re-initialized, all the ports that you have switched logically (listed in the port swap file) are switched again. The only way to stop a logical port swap is to reset the ports.

It may happen, at this time, that a switched port can no longer be switched logically. This is indicated in the port swap file by the message REFUSED BY CTL PGM followed by the reason for the refusal.

If you move any cable from one position to another, or change a LIC, you must update the configuration data file.

After creating a new port swap all port swap information is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                            PORT INFORMATION


    A                                   B                C
 PORT:  80   ATTACHED TO CCU: A   SCANNER NUMBER: 10    LIC NUMBER: 41
                                  SCANNER TYPE  : TSS   LIC TYPE  :  5


 PORT:  81   ATTACHED TO CCU: A   SCANNER NUMBER: 10    LIC NUMBER: 41
                                  SCANNER TYPE  : TSS   LIC TYPE  :  5

   - PRESS SEND IF YOU WISH TO CREATE ANOTHER SWAP


 - SWAP PORT ==>  80  TO PORT ==>  81
===>    CREATE IS COMPLETE

F1:END  F2:MENU2  F3:ALARM              F6:QUIT
```

Models 17A, 21A, 31A, 41A, 61A

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                              PORT INFORMATION


    A                                    B
 PORT: 2144  ATTACHED TO CCU: A   TYPE:  3746 TIC3
             ATTACHED TO CCU: B


 PORT: 2176  ATTACHED TO CCU: A   TYPE:3746 TIC3
             ATTACHED TO CCU: B
     E
     F

  - PRESS SEND IF YOU WISH TO CREATE ANOTHER SWAP
  - SWAP PORT ==> 2144 TO PORT ==> 2176
===>    CREATE IS COMPLETE

F1:END  F2:MENU2  F3:ALARM               F6:QUIT
```

If the swap was successful[1], **CREATE IS COMPLETE** is displayed.

From the above screen:

If the swap was successful:

- Press SEND.
- Activate the lines.

If the port swap was not successful, an error message is displayed.
You may request another port swap creation:

- Press SEND. The port swap file is updated.
- Enter the address of the next source port to be switched and the address of the new destination port.

Once you have created the required port swaps, you must ask the host operator to activate the lines for the newly swapped ports.

A Port addresses:

- The range of TSS port numbers is from 0 to 895.
- The range of HPTSS port numbers is from 1024 to 1039.
- The range of ESS port numbers is from 1056 to 1071.
- The range of TRSS port numbers is from 1088 to 1095.
- The range of 3746-900 port numbers is from 2048 to 3159.

[1] For at least one CCU. The 3746-900 port swap function is automatically sent to one or both CCUs that have the MOSS **ONLINE** and recognizes the 3746-900 in the CDF.

B Scanner number and type (TSS, HPTSS, ESS, or TRSS) for each port:

- TSS scanner number is in the range from 1 through 32.
- HPTSS scanner number is in the range from 1 through 8.
- ESS scanner number is in the range from 1 through 8.
- TRSS scanner number can be 1, 2, 5, or 6.
- 3746-900 adapter type:
  - L11 = LIC type 11
  - L12 = LIC type 12
  - TIC3 = TIC type 3

C LIC number and type for each port, if the scanner type is TSS.

E Status message area for CCU A.

F Status message area for CCU B.

See Appendix D, “Messages” on page 463 for the status messages.

Resetting a Port Swap

P S F SEND ■ X SEND

Note: The **X** value depends on options displayed on the screen shown on page 258. These options depend themselves on the model and the status of the MOSS.

To reset a port, you are prompted to enter the decimal address of the destination port (RESET PORT ==>) and that of the source port (TO PORT ==>). When you reset ports (swap back ports), the port swap file is updated. When the port is logically reset, activate the line.

For 3745 lines, the CDF must be updated using the CDF LA Update option (for example, if cables are swapped or the LIC changed).

The 3746-900 port swap may be accepted on one CCU and rejected on the other. See the footnote on page 262.

Displaying Swapped Ports

Use the Display option to display the port swap file.

Note: The **X** value depends on options displayed on the screen shown on page 258. These options depend themselves on the model and the status of the MOSS.

If you have two CCUs (for Model 41A or 61A) the following example screen shows the port swap display for CCU-A and CCU-B:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PORT SWAP FILE
                      PORT SWAP DISPLAY ON CCU-A & CCU-B

    PORT     ATTACHED TO     SWAPPED TO    PORT    ATTACHED TO     CCU


      88   LIC 45  TYPE 5                    90   LIC 46  TYPE 5    A

      80   LIC 41  TYPE 5                    81   LIC 41  TYPE 5    A
    2144   3746 900TIC3                    2176   3746 900TIC3      A,B
    2368   3746 900 L11                    2432   3746 900 L11      A,B
     E
     F


 - SWAP PORT ==>      TO PORT ==>
===>    END OF PORT SWAP FILE

F1:END  F2:MENU2               F4:DISP.A  F5:DISP.B    F6:QUIT
```

For Models 17A, 21A, 31A, 41A, and 61A there are additional message areas:

E Status message area for CCU A.

F Status message area for CCU B (not for 3745 Models 17A, 21A, or 31A).

See Appendix D, “Messages” on page 463 for the status messages.

Passwords (PSW)

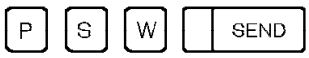
NOTE:

For **Models 17A, 21A, 31A, 41A, and 61A** this function has been separated and made part of three different MOSS-E functions: 'Manage Passwords', '3746-900 Installation', and 'Manage Remote Operations'.

Use the PSW function to update and display the passwords as explained in the following table.

When the 3745 is initialized for the first time or after the hard disk has been formatted or restored, use the password update options to create your passwords.

PSW Options	Go to page
Update Management Password	266
Update Local Console Password	266
Update Remote Console Password	266
Update Maintenance Password	267
Display Passwords	269
Allow service personnel to have one-time access to the 3745	269
Allow service personnel to have a permanent access to the 3745	269
Deactivate Maintenance Password	270
Display/Reset/Update Logon Attempt Counters	270
Update Customer Identification	271
Update time out for remote console disconnection	272



The following screen is displayed:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS

- ENTER MANAGEMENT PASSWORD THEN PRESS SEND ==> IBM3745   (A)

   AVAILABLE FUNCTIONS:

      UPDATE/DISPLAY/ACTIVATION/DEACTIVATION OF PASSWORDS

      DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS

      UPDATE CUSTOMER IDENTIFICATION

      UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION

===>

F1:END                F3:ALARM
```

Default password

A When you select the passwords function for the first time, the password is IBM3745. Then press SEND.

Once you have entered the management password, the following screen is displayed:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
-SELECT ONE OPTION (1 TO 11), THEN PRESS SEND ==>

  1 = UPDATE MANAGEMENT PASSWORD
  2 = UPDATE LOCAL PASSWORD
  3 = UPDATE REMOTE CONSOLE PASSWORD
  4 = UPDATE MAINTENANCE PASSWORD
  5 = DISPLAY PASSWORDS
  6 = TEMPORARY ACTIVATION OF MAINTENANCE PASSWORD
  7 = PERMANENT ACTIVATION OF MAINTENANCE PASSWORD
  8 = DEACTIVATION OF MAINTENANCE PASSWORD
  9 = DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS
 10 = UPDATE CUSTOMER IDENTIFICATION
 11 = UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION

===>

F1:END               F3:ALARM
```

Updating the Management Password

P S W SEND ■ **PASSWORD** SEND ■ 1 SEND

This password allows you to have access to the password function in order to modify or display all 3745 passwords.

If you forget the management password, contact your service representative for assistance.

Warning: All data not saved on the backup diskette set will be lost.

Updating the Local or Alternate Console Password

P S W SEND ■ **PASSWORD** SEND ■ 2 SEND

This password allows an operator to have access to the local or alternate console.

Updating the Remote Console Password

P S W SEND ■ **PASSWORD** SEND ■ 3 SEND

This password allows an operator to have access to the 3745 from the remote console.

When logging on the remote console, you cannot enter an incorrect password more than three times. If you do, the console is disconnected.

The logon attempt counters must be reset at the local console. The remote console password must differ from the maintenance password.

The following screen is an example of the display obtained once you have made the selection:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                    UPDATE XXX PASSWORD









-ENTER NEW MAINTENANCE PASSWORD, THEN PRESS SEND ==>  xxxxxxx
      (5 TO 8 ALPHANUMERIC CHARACTERS)

===>
F1:END           F3:ALARM                            F6:QUIT
```

xxxxxxx is the password you enter.

Each password is from five to eight alphanumeric characters (blanks not allowed).

You are invited to enter the new password. All default passwords are initially IBM3745 except for the maintenance password, for which there is no default password. **Update them as soon as the 3745 is initialized.**

When you have successfully updated a password, the following message is displayed: PASSWORD HAS BEEN UPDATED

Updating the Maintenance Password

Use this option to create or update the maintenance password.


```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                    UPDATE REMOTE MAINTENANCE PASSWORD









-ENTER NEW MAINTENANCE PASSWORD, THEN PRESS SEND  ==> XXXXX
       (5 to 8 ALPHANUMERIC CHARACTERS)

===>   PASSWORD HAS BEEN UPDATED

F1:END          F3:ALARM        F4:SPECIFY RSF MODEM TRAN. MODE
```

From the above screen:

- Enter a new maintenance password.
- Press SEND.
- Press F4 to specify the RSF modem transmission mode. Enter either:
  - F (U.S.A. and Canada) for modem clock, 1200 bps or 2400 bps (V.22 bis), or
  - H for MOSS clock, 1200 bps only (V.23), then
  - Press SEND.
- The maintenance password that you have just created is not active. The service personnel cannot use it. To activate it, select option 6 or 7. Go to page 269.

This password allows the service representative to use the local, remote, or RSF console in maintenance mode. The maintenance password must differ from the customer remote console password and the local customer password. Keep the maintenance password separate (from the other passwords) so as to avoid problems. The customer is responsible for this password.

Problems can occur if a console is inadvertently in Maintenance Mode. Functions that are intended only for the service representative are documented elsewhere.

Warning: No indication that maintenance mode is in effect is displayed on a console. Misuse can cause unpredictable or disruptive results. It is the user's responsibility to maintain all passwords consistent with site standards and good business practice.

Displaying Passwords

Use this option to display all passwords and the status of the maintenance password.

P S W SEND ■ **PASSWORD** SEND ■ 5 SEND

A screen similar to the following is displayed:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
  PASSWORDS ARE:

   MANAGEMENT PASSWORD         =             xxxxxxx

   LOCAL      PASSWORD         =             xxxxxxx

   REMOTE CONSOLE PASSWORD     =             xxxxxxx

   MAINTENANCE     PASSWORD    =  B          xxxxxxx

   MAINTENANCE PASSWORD STATUS =  C

===>

F1:END               F3:ALARM    F6:QUIT
```

B If the maintenance password has not been defined yet, the following message is displayed here:

(NOT YET DEFINED)

and the maintenance password entry field will be blanked out.

C The maintenance password status can be: TEMPORARY, PERMANENT, or DEACTIVATED.

Temporary Activation of the Maintenance Password

Use this option to allow service personnel to have one-time access to the 3745.

P S W SEND ■ **PASSWORD** SEND ■ 6 SEND

Once selected, the function is immediately performed and the following message is displayed:
MAINTENANCE PASSWORD HAS BEEN TEMPORARILY ACTIVATED

Permanent Activation of the Maintenance Password

Use this option to allow service personnel to have a permanent access to the 3745.

P S W SEND ■ **PASSWORD** SEND ■ 7 SEND

Once selected, the function is immediately performed and the following message is displayed: MAINTENANCE PASSWORD HAS BEEN PERMANENTLY ACTIVATED

Deactivating the Maintenance Password

Use this option to prevent service personnel from having access to the 3745.

P S W SEND ■ **PASSWORD** SEND ■ 8 SEND

Once selected, the function is immediately performed and the following message is displayed:
MAINTENANCE PASSWORD HAS BEEN PERMANENTLY DEACTIVATED

Displaying, Resetting, or Updating Logon Attempt Counters

Each time you enter an incorrect password, the attempt is recorded and a message is displayed on the initial password screen **A**. The message remains until you reset the counter of unsuccessful logon attempts.

The maximum number of unsuccessful logon attempts is 3 by default. When the count of unsuccessful logon attempts on a remote or RSF console is reached, that console is disconnected and the message UNAUTHORIZED ACCESS-TERMINAL DISCONNECTED is displayed. The local operator has to reset the counter before the disconnected console can be used.

You can display, reset, or update this counter (for remote and RSF maintenance consoles, update only). Use the Display/Reset/Update Logon Attempt Counters option. The authorized counter value is from 1 to 99.

P S W SEND ■ **PASSWORD** SEND ■ 9 SEND

A screen similar to the following is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
                    DISPLAY/RESET/UPDATE LOGON ATTEMPT COUNTERS

  11 UNSUCCESSFUL ATTEMPTS FOR LOCAL LOGGING
  03 UNSUCCESSFUL ATTEMPTS FOR REMOTE LOGGING          A
  00 UNAUTHORIZED ATTEMPTS FOR MAINTENANCE LOGGING




-ENTER R TO RESET THE COUNTERS OR U TO UPDATE, THEN PRESS SEND ==>
 (YOU CAN UPDATE ONLY THE REMOTE/MAINT.  COUNTER)


===>

F1:END               F3:ALARM    F6:QUIT
```

To **reset** the counters, enter R followed by SEND. All counters are reset at once. The following message is displayed:
COUNTERS HAVE BEEN RESET

To **update** the counter value of the remote console, enter U followed by SEND.

The following screen is displayed:

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
      UPDATE COUNTER OF AUTHORIZED REMOTE/MAINT.  LOGON ATTEMPTS









-ENTER THE NEW COUNTER VALUE, THEN PRESS SEND ==>


===>

F1:END               F3:ALARM    F6:QUIT
```

From the above screen:

- Enter a counter value. It is an integer in the range 01 through 99.
- Press SEND.

The following message is displayed:
REMOTE/MAINT. LOGON COUNTER HAS BEEN UPDATED

Updating the Customer Identification

Use this option to update the customer identification.


```
CUSTOMER ID: xxxxxxxxxx          3745-XXX        SERIAL NUMBER:


------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS









- ENTER CUSTOMER IDENTIFICATION (1 TO 16 CHARACTERS) ==>

===>
F1:END       F3:ALARM       F6:QUIT
```

From the above screen:

From this screen:

- Enter the customer identification.
- Press SEND.

The following message is displayed:
CUSTOMER IDENTIFICATION HAS BEEN UPDATED

The CUSTOMER ID is always displayed on the top left-hand corner of your screen.

Updating the Time Out for the Remote or RSF Console Disconnection

Use this option to set the time a remote or RSF console can be inactive. The time out must be set to a value from 05 to 30 minutes. The default time out is 30 minutes.


```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: PASSWORDS
         UPDATE TIMEOUT FOR REMOTE CONSOLE DISCONNECTION









-ENTER THE NEW TIMEOUT IN MINUTES, THEN PRESS SEND ==>


===>

F1:END                F3:ALARM   F6:QUIT
```

The following message is displayed:
TIME OUT FOR REMOTE CONSOLE DISCONNECTION HAS BEEN UPDATED

Repair CCU (REP)

As a result of CCU hardware or software errors the status of a CCU maybe changed to DOWN. Use the REP function to change the CCU to the READY status so that the CCU can be IPLed.

For the Models 410, 41A, 610, and 61A, use “CCU Selection/Release (CSR) Models 410, 41A, 610, and 61A” on page 79 to select the CCU that has a status DOWN.

Normally this function is only used by the service representative after repairing the CCU or correcting a problem in the NCP.

Reset Address Compare (RAC)

Use the RAC function to cancel the current Address Compare.

When the address compare is canceled, the Address Compare Parameter screen is displayed (see page 3) and AC is cleared from the MSA.

If you accessed RAC without having set address compare, you will get the message REQUEST IGNORED.

Reset Branch Trace (RBT)

Use the RBT function to cancel the current branch trace.

When the branch trace is canceled, the Branch Trace Parameter screen is displayed (see page 3) and BT disappears from the MSA if it was active.

If you accessed RAC without having set address compare, you will get the message REQUEST IGNORED.

Reset CCU Check (RCK)

Use the RCK function to reset the CCU CHECK condition. The CCU remains stopped. (HARDSTOP is displayed in MSA field h). To restart the CCU, press F6.

Once selected, this function is performed immediately.

Reset CCU/LSSD (RCL)

Use the RCL function to reset the entire CCU (LSSD, IOC, local store registers, 3745 storage). The channel adapter registers are not reset.

This function destroys the current state of the CCU control program.

The only way to restart the 3745 is to IPL it.

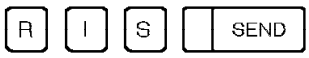
Reset IOC (RIO)

Use the RIS function to reset the IOC errors.

Once selected, this function is performed immediately.

Reset I-Step (RIS)

Use the RIS function to reset the control program to normal processing. MSA field c displays PROCESS.



Once selected, this function is performed immediately.

Reset CCU (RST)

Use the RST function to stop the control program processing and the cycle steal mechanism. MSA field h displays RESET.

Once selected, this function is performed immediately. The MOSS becomes **alone**.

The only way to restart the 3745 is to IPL it from the 3745 control panel. Refer to the *3745 Basic Operations Guide*, to perform the actions summarized below:

1. Set **Service Mode** to 0 and press **validate**.
2. Set **Power Control** to 2 or 3 and press **validate**.
3. Set **Function** to 0 and press **validate**.
4. Press **Power On Reset**.
5. Wait until either:
   - **FF4** is displayed if the control program is to be loaded from the host.

     Ask the host operator to load the control program and wait until **000** is displayed. This means that IPL is complete and successful.

   or

   - **000** is displayed if the control program is loaded from the disk. This means that IPL is complete and successful.

Set Address Compare (SAC)

Use the SAC function to force the CCU to perform a specific action whenever a storage address that you specified is detected during a specific storage access operation.

You can execute simultaneously an address compare and a branch trace. (See "Simultaneous Address Compare and Branch Trace" on page 318.)


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET ADDR COMPARE
                          ADDRESS COMPARE SELECTION

         - ENTER ADDRESS COMPARE TYPE (S, D, T) ==> S  A
              S = SINGLE
              D = DOUBLE
              T = TWO SINGLE
         - ENTER CCU ACTION (I, S, N)           ==> I  B
              I = LEVEL 1 INTERRUPT
              S = CCU STOP
              N = NO ACTION
         - MOSS INTERRUPT (Y, N)                ==> N  C
              N = NO
              Y = YES STOP

===>

F1:END  F2:MENU1  F3:ALARM  F4: LATEST SELECTED AC OPTIONS
```

From the above screen:

- Enter the different AC parameters.
- Press SEND to display the next screen. It might be helpful to use the F4 key when you want to execute an address compare several times with the same or similar parameters.

A **SINGLE**: You will be requested to enter a unique storage address and one or more storage access operations. When the storage address is detected during any one of the storage access operations, the CCU action (selected on line **B**) is executed.

DOUBLE: You will be requested to enter two addresses: the first one must be a load or store instruction address; the second one a storage address to be accessed by the selected instruction. When both addresses are detected simultaneously, the CCU action (selected on line **B**) is executed.

TWO-SINGLE: You will be requested to enter two storage addresses and one or more storage access operations for each address. When either of the two addresses is detected during appropriate access operation, the CCU action (selected on **B**) is executed.

C **MOSS INTERRUPT**:

- If you enter Y, a MOSS level-1 interrupt is requested to display address compare results in MSA field k.
- If you enter N, address compare results are not displayed in the MSA.

If you select S (CCU STOP) on line **B**, address compare results are always displayed, whether you selected MOSS INTERRUPT ==> Y or N.

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET ADDR COMPARE
              SINGLE AC - NO CCU OPTION - NO MOSS INTERRUPT

          - ENTER    STORAGE ADDRESS   (1 TO 6 DIGITS) ==> D



          - ENTER 1 TO 4 STORAGE ACCESSES (L, S, C, I) ==> E
               L = LOAD
               S = STORE
               C = CYCLE STEAL
               I = INSTRUCTION



===>

F1:END  F2:MENU1  F3:ALARM  F4:LATEST SELECTED AC OPTIONS
```

From the above screen:

Once you have entered all the parameters on the screen, press SEND. The address compare is then started. The term AC appears in the MSA field k. The Address Compare Parameter screen is displayed (see page 3) and remains displayed until you cancel the address compare (RAC function) or cancel the Set Address Compare function (F1).

D The storage address must be in the range of the CCU storage.

E **LOAD**: The selected action is performed after a load instruction has accessed the storage address that you selected.

STORE: The selected action is performed after a store instruction has accessed the storage address that you selected.

CYCLE STEAL: The selected action is performed after the cycle steal mechanism has accessed the storage address that you selected.

INSTRUCTION: The selected action is performed after the execution of the instruction for which you specified the address.

Notes:

1. To set a new address compare when the CCU stops because of a previous address compare (AC-STOP in MSA field h), you need not select the RAC function, but only the SAC function.
2. If, after a successful address compare (hit) with CCU STOP, you set another address compare at the same instruction address +2, +4, or +6, the address compare may be unsuccessful.
3. If you set a double address compare with storage access operation LOAD, the address compare may be successful on a store instruction that accesses the same data address when the store instruction immediately precedes or follows the load instruction. This is also true for a store instruction.

Address Compare Cancel

To cancel the address compare perform the Reset Address Compare function (see page 275). Pressing F1 does not cancel the address compare in progress but only the Set Address Compare function.

Stand-Alone Link Tests (SAT)

General Description

The stand-alone link test (SAT) allows you to test an intermediate routing node (IRN) link between two IBM communication controllers. The IRN link is an SDLC leased or manually-switched line.

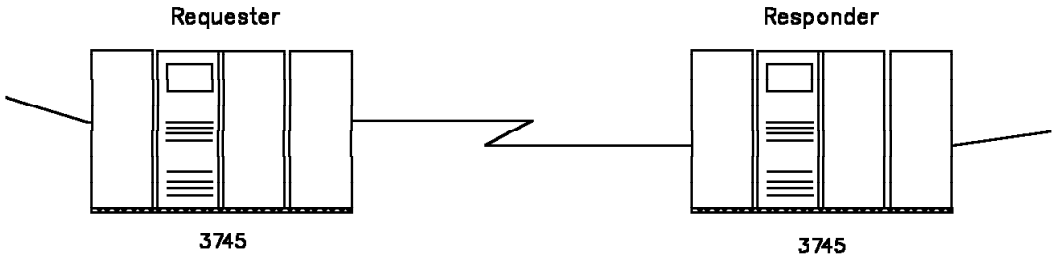
The two controllers are named "requester" and "responder". The definitions of requester and responder are independent of whether the controllers are channel-attached or link-attached.

The link test consists of two programs resident in the MOSS:

- Requester link test program (LTQ), for use in the requester
- Responder link test program (LTS), for use in the responder.

The stand-alone link test will be simply called "link test" in the rest of this manual.

Table 43. Stand-Alone Link Test (SAT) General Description

Stand-Alone Link Test (SAT)	
	
Requester Controller	**Responder Controller**
Is the controller that is selected by the operator to initiate the link test operations. It sends the data over the link, and expects responses from the responder. The requester link test program (LTQ), is always used and required in the requester.	Is the controller that is selected by the operator to receive the test frames from the requester and send them back. The responder link test program (LTS), may be run (using the MOSS LTS command) when NCP or CLDP are not loaded in the responder.
Note: The requester link test program (LTQ) should preferably be run only in the link-attached controller, as this mode causes the least disturbance to the network. However, the responder link test program (LTS) may be required if statistics are to be collected at the responder. When the link test program is running in both controllers, an operator must be present at both locations; if only the requester is running the link test, the operation of the responder can be unattended.	

Program Environment

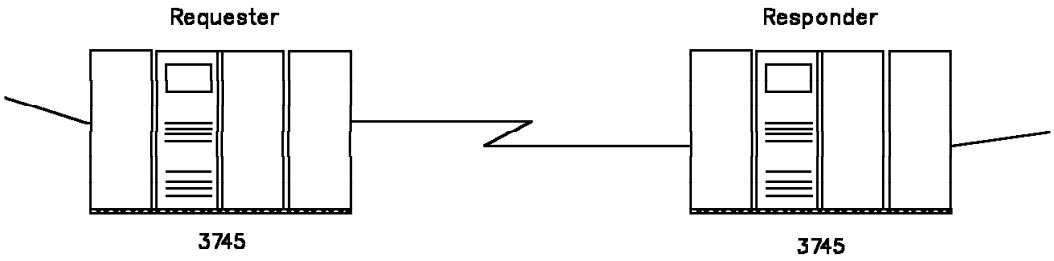
When you decide to run the link tests, one of the following situations exists:

1. NCP is loaded and active in the responder.
2. NCP is loaded and inactive in the responder.
3. CLDP is loaded in the responder (IPL stopped at phase 4).
4. Neither NCP nor CLDP is loaded in the responder.

The actual situation is dependent on the status of the responder controller.

NCP Loaded and Active in the Responder

Table 44. LTQ and SAT in Requester, NCP Active in Responder

Stand-Alone Link Test (SAT)	
	
Requester Controller	**Responder Controller**
1 Define link IPL port. (See LKP function.)	
	2 NCP is active (if not, select the procedure on page 296). **3** The line must be activated either by: • MONLINK=YES which is a parameter set at NCP generation. • Or a VTAM command from the host.
4 Load the requester link test program (LTQ function). **5** Initiate the stand alone test (SAT function). **6** Enter the responder address 'FF'.	
	7 NCP returns its subarea number (expressed in hexadecimal value).
8 At receipt of the responder address, take decision to continue the test or not. **9** Analyse test results.	

Details of Actions When NCP Is Loaded and Active in the Responder

1. The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

   The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test.
   Refer to “Link IPL Ports (LKP)” on page 219.

   Note: When defining the IPL ports, pay particular attention to the following: Verify the parameters of the link (duplex or half-duplex, switched o nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

2. NCP is active therefore you do not need to load the link test program in the responder. NCP is capable of replying correctly to the SDLC test frame sent by the requester.

3. MONLINK=YES is a keyword belonging to the GROUP statements defined at NCP generation.

   When MONLINK=YES the line is automatically activated by NCP. If MONLINK=NO the line must be activated by a VTAM command from the host.

4. Load the requester link test program (LTQ function).
   Refer to “Loading the Stand-Alone Link Test Program” on page 303.

5. Use the MOSS SAT function to initiate the stand alone test.

6. When you perform the SAT function, a screen is displayed (see screen on page 304) on which you must specify one of the following responder addresses:

   - 00 indicates the other point in a point-to-point link.
   - 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 229).
   - FF is the broadcast address and can be handled as follows:
     - In a point-to-point configuration, FF will cause the responder to return its subarea number. This can be useful if you do not know the responder subarea number.
     - In a multipoint configuration, FF will cause the responder subarea number to be returned from the first station that is able to respond.

7. NCP returns to the requester the subarea number of the responder controller. The subarea number is expressed in hexadecimal value.

8. The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 305 to enter the test options.

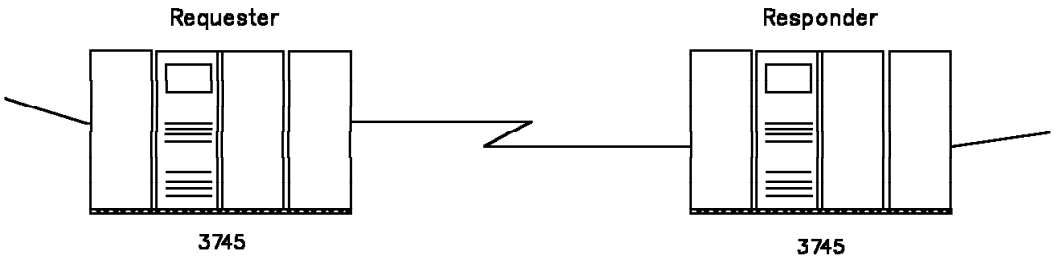
   Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN. Refer to the screen on page 305.

9 Analyse the results of the tests. Start on page 306.

Do not forget to restore the original contents of the IPL port information (LKP function).

NCP Loaded and Inactive in the Responder

Table 45. LTQ and SAT in Requester, NCP Inactive in Responder

Stand-Alone Link Test (SAT)	
	
Requester Controller	**Responder Controller**
1 Define link IPL port. (See LKP function.)	
	2 NCP is inactive.
	3 MONLINK=YES must be defined in NCP. (If MONLINK=NO, the stand alone test (SAT) cannot be run.)
4 Load the requester link test program (LTQ function).	
5 Initiate the stand alone test (SAT function).	
6 Enter the responder address 'FF'.	
	7 The responder returns its subarea number (expressed in hexadecimal value).
8 At receipt of the responder address, take decision to continue the test or not.	
9 Analyse test results.	

Details of Actions When NCP Is Loaded and Inactive in the Responder

1 The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test.
Refer to “Link IPL Ports (LKP)” on page 219.

Note: When defining the IPL ports, pay particular attention to the following: Verify the parameters of the link (duplex or half-duplex, switched o nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

2 NCP is inactive, if MONLINK=YES in NCP, you do not need to load the link test program in the responder. The responder is capable of replying correctly to the SDLC test frame sent by the requester.

3 MONLINK=YES is a keyword belonging to the GROUP statements defined at NCP generation.

When MONLINK=YES the line must be activated by a VTAM command from the host.

If MONLINK=NO you cannot run the test, go to:
“CLDP Loaded in the Responder (IPL Stopped at Phase 4)” on page 298.

4 Load the requester link test program (LTQ function).
Refer to “Loading the Stand-Alone Link Test Program” on page 303.

5 Use the MOSS SAT function to initiate the stand alone test.

6 When you perform the SAT function, a screen is displayed (see screen on page 304) on which you must specify one of the following responder addresses:

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 229).
- FF is the broadcast address and can be handled as follows:
  - In a point-to-point configuration, FF will cause the responder to return its subarea number. This can be useful if you do not know the responder subarea number.
  - In a multipoint configuration, FF will cause the responder subarea number to be returned from the first station that is able to respond.

7 NCP returns to the requester the subarea number of the responder controller. The subarea number is expressed in hexadecimal.

8 The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 305 to enter the test options.

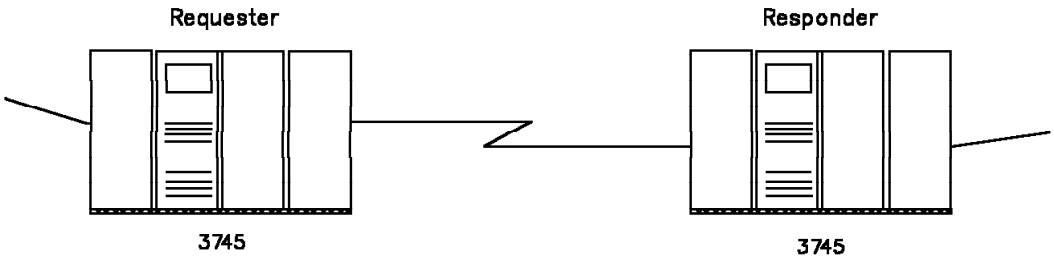
Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN. Refer to the screen on page 305.

9 Analyze the results of the tests. Start on page 306.

Do not forget to restore the original contents of the IPL port information (LKP function).

CLDP Loaded in the Responder (IPL Stopped at Phase 4)

Table 46. LTQ and SAT in Requester, CLDP Loaded in the Responder

Stand-Alone Link Test (SAT)	
	
Requester Controller	**Responder Controller**
1 Define link IPL port. (See LKP function.)	
	2 Define link IPL port. (See LKP function.)
	3 The responder is stopped at IPL phase 4. CLDP will act as responder.
4 Load the requester link test program (LTQ function).	
5 Initiate the stand alone test (SAT function).	
6 Enter the responder address 'FF'.	
	7 The responder returns its SDLC controller address (defined in LKP common option screen).
8 At receipt of the responder address, take decision to continue the test or not.	
9 Analyze test results.	

Details of Actions When CLDP Is Loaded in the Responder (IPL Phase 4)

1. The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

   The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test.
   Refer to “Link IPL Ports (LKP)” on page 219.

   Note: When defining the IPL ports, pay particular attention to the following: Verify the parameters of the link (duplex or half-duplex, switched o nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.

2. Use the MOSS LKP function.
   Refer to step 1 to define the link IPL port.

3. The responder is stopped at IPL phase 4. FF4 is displayed at the control panel.

4. Load the requester link test program (LTQ function).
   Refer to “Loading the Stand-Alone Link Test Program” on page 303.

5. Use the MOSS SAT function to initiate the stand alone test.

6. When you perform the SAT function, a screen is displayed (see screen on page 304) on which you must specify one of the following responder addresses:

   - 00 indicates the other point in a point-to-point link.
   - 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 229).
   - FF is the broadcast address and can be handled as follows:
     – In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
     – In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.

7. Responder controller returns its SDLC controller address (defined in LKP common option screen).

8. The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 305 to enter the test options.

   Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN. Refer to the screen on page 305.

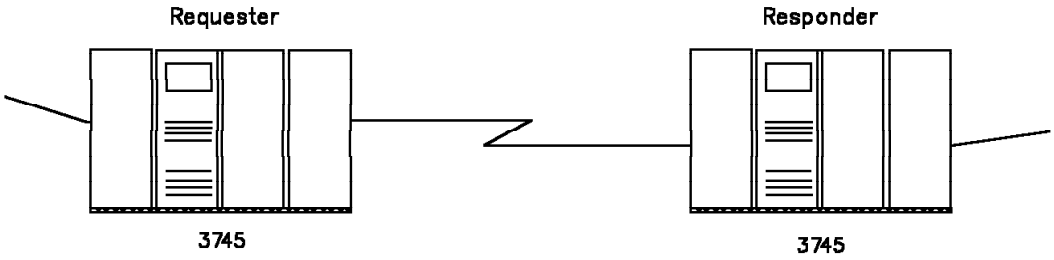
9. Analyze the results of the tests. Start on page 306.

   Do not forget to restore the original contents of the IPL port information (LKP function).

Neither NCP nor CLDP Loaded in the Responder

Table 47. LTQ and SAT in the Requester, LTS and SAT in the Responder

Stand-Alone Link Test (SAT)



Requester Controller	Responder Controller
	1 Define a link IPL port if not yet done. (See LKP function.)
	2 LTS function to load the program.
	3 Initiate the stand alone test (SAT function).
4 Define link IPL port. (See LKP function.)	
5 Load the requester link test program (LTQ function).	
6 Initiate the stand alone test (SAT function).	
7 Enter the responder address 'FF'.	
	8 Responder controller returns its SDLC controller address (defined in LKP common option screen).
9 At receipt of the responder address ('01' to 'FE') or '00' which is the defaulted address, take decision to continue the test or not.	
10 Analyze test results.	**11** Analyze test results.

Note: When the link test program is running in both controllers, an operator must be present at both locations.

Details of Actions When Neither NCP nor CLDP Is Loaded in the Responder

1. The link to be tested must be defined as an IPL port in the IPL port information (LKP function) of the requester. The controller address of the responder side must be defined in the IPL Port Common Options screen.

   The IPL port information must be updated before loading takes place. If you change an IPL port information (LKP function), you must reload the corresponding link test.
   Refer to “Link IPL Ports (LKP)” on page 219.

   Note: When defining the IPL ports, pay particular attention to the following:

   - Verify the parameters of the link (duplex or half-duplex, switched or nonswitched, and direct attachment or external clock). If the link test is to be used in the wrap mode at the modem (local or remote) level, the IPL port **must** be defined as duplex.
   - If the responder is the link test program (LTS), verify that the IPL ports are defined identically at both ends of the link.

2. Use the MOSS LTS function to load the responder link test program.

   The programs are resident in the MOSS, and can be run even when the control program cannot be loaded. This is particularly useful for link-connected controllers in cases where the control program cannot be loaded over the normal IPL link.
   Refer to “Responder Link Test Program” on page 309.

3. Use the MOSS SAT function to initate the stand alone test.

4. Use the MOSS LKP function. Refer to step 1 above to define the link IPL port.

5. Load the requester link test program (LTQ function).
   Refer to “Requester Link Test Program” on page 303.

6. Use the MOSS SAT function to initate the stand alone test.

7. When you perform the SAT function, a screen is displayed (see screen on page 304) on which you must specify one of the following responder addresses:

   - 00 indicates the other point in a point-to-point link.
   - 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (page 229).
   - FF is the broadcast address and can be handled as follows:
     – In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
     – In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.

8. Responder controller returns its SDLC controller address (defined in LKP common option screen).

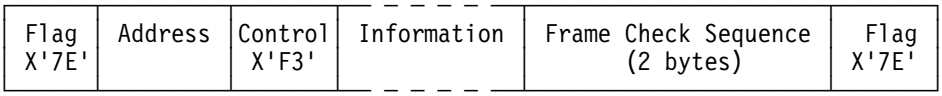
9. The broadcast address FF is used only to retrieve the responder controller address. If the responder is able to send its subarea number (different from FF), the user should use it to begin another test. In this case, refer to the screen on page 305 to enter the test options.

Restriction: When an IBM 3705 Communication Controller is used as the responder, the test frame must be a null frame (without data). It will be done by selecting the option: CREATE PERSONAL PATTERN. Refer to the screen on page 305.

10 **and** **11** Analyze the results of the tests. Go to page 306 (LTQ function) and page 311 (LTS function).
Do not forget to restore the original contents of the IPL port information (LKP function).

SDLC Test Frame

The format of the SDLC test frame is shown below. Refer to *IBM Synchronous Data Link Control, General Information*, GA27-3093 for further information on SDLC.



Notes:

1. The address field contains the address of the responder to which the test frame is sent.
2. The information field (variable length in multiples of 8 bits) can be either of the default patterns, or the personal pattern (page 308).
3. The frame sent back by the responder should be identical with the frame sent by the requester.

Requester Link Test Program

Warning: Loading the link test program overwrites the control program.

Loading the Stand-Alone Link Test Program

1. Set the **MOSS alone,** refer to page 12.
2. Define the intermediate routing node (IRN) link as an IPL port in the IPL port information (LKP function).
3. For Models 410, 41A, 610, and 61A, make sure that a CCU which controls the line is selected. See the MSA. If a CCU is not selected, use the CSR function on menu 2 to select a CCU.
4. L T Q SEND to load the program.

```
------------------------------------------------------------- mm/dd/yy hh::mm
FUNCTION ON SCREEN: LD LINK TEST REQ


- SELECT THE CCU YOU WANT TO IPL (1 TO 3)  ==>     A

     1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
     2 = CCU-A
     3 = CCU-B


- SELECT AN IPL OPTION (1 TO 2)   ==>     B
     1 = NORMAL
     2 = STEP-BY-STEP



===>

F1: END  F2: MENU2  F3: ALARM
```

5. For Models 410, 41A, 610, and 61A choose the CCU to be IPLed **A**, then the IPL option **B**. The IPL starts.

   The machine status area shows the progression of the loading process. If an error occurs during IPL Phase 3, the following message is displayed:
   IPL PHASE 3 LINK TEST PROGRAM ABEND
6. Confirm your selection, then press SEND.
7. When LINK TEST PROGRAM LOADED is displayed in the MSA, press F1.
8. S A T SEND to initiate the SAT function.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
         REQUESTER  INITIALIZATION


          - LINK ADDRESS                ==>
            TSS: 0-895   HPTSS: 1024-1039

          - RESPONDER ADDRESS (00 TO FF) ==>









===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

- Enter the link address and the responder address.
- Press SEND. The Requester Test Option screen is displayed when the initialization is successful (go to next page).

ADDRESS: The address of the port to which the link cable is connected.

RESPONDER ADDRESS: The address that is placed by the requester in the SDLC test frame.

- 00 indicates the other point in a point-to-point link.
- 01 to FE indicates the responder that you have already specified in the Link IPL Common Option screen (see page 229).
- FF is the broadcast address and can be handled as follows:
  - In a point-to-point configuration, FF will cause the responder to return its actual address. This can be useful if you do not know the remote address.
  - In a multipoint configuration, FF will cause the address to be returned from the first station that is able to respond.

    Note: When the broadcast address FF is selected, the Requester Test Option screen is not displayed. All options are taken by default. Investigation mode and permanent test are forced, and an empty pattern is always sent to the secondary station.

    The broadcast address FF is used only to retrieve the actual secondary controller address. As soon as it is retrieved, the user should begin another test with the actual address (not equal to FF).

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
         REQUESTER         TEST OPTIONS

          - ENTER PATTERN OPTION (0,1,2)          ==>   A
               0 = CREATE PERSONAL PATTERN
               1 = USE DEFAULT PATTERN NUMBER 1
               2 = USE DEFAULT PATTERN NUMBER 2

          - ENTER COUNT OF TESTS (1 TO 99) OR P   ==>   B
               P = PERMANENT

          - SELECT TEST MODE (I OR S)             ==>   C
               I = INVESTIGATION MODE (STOP ON ERROR)
               S = STATISTICAL MODE
===>

F1:END  F2:MENU2  F3:ALARM
```

1. Select the pattern option **A**.

   PATTERN NUMBER 0: go to page 308.

   PATTERN NUMBER 1: 128 bytes from X'00' through X'7F'.

   PATTERN NUMBER 2: 128 bytes from X'80' through X'FF'.

   Both NCP and the responder link test program can buffer a full 128 bytes. Other responders may be limited to less than 128 bytes. For example, the CLDP is limited to 32 bytes and in this case, **use the option 0 (zero) to create a personal pattern that does not exceed 32 bytes**.

   INVALID DATA RECEIVED will be displayed if the test message sent by the requester is longer than the limit.

2. Select the count option **B**. You have two possibilities:

   - Enter a count from 1 to 99 as requested by the prompt message. Counting takes place from 1 to the count that you have entered.
   - Enter P to select the permanent count. Counting takes place from 1 to 65535, and then wraps back to 0.

3. Select the mode option **C**.

   INVESTIGATION MODE: The test stops on the first error detected and information relative to the error is displayed. SCF, LCS, and SES codes are explained on page 312. The test can be restarted (F4), and will then stop on the next error, if any.

   When using the broadcast address (FF), the test stops and ADDRESS RECEIVED: XX is displayed (where XX is the address of the responder).

   STATISTICAL MODE: Error counts are kept; an error does not stop the test (unless the error disables the line). The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds.

4. Press SEND to validate the selection. One of the following screens will be displayed, depending on the options that you entered:

   - Investigation mode screen
   - Statistical mode screen
   - Personal pattern screen.

You can, at any time, stop the test by pressing the BREAK key and resume by pressing F4:CONTINUE.

The test stops when the specified count of tests is exhausted and COUNT OF TESTS EXHAUSTED - LINK TEST FUNCTION COMPLETED is displayed.

Investigation Mode Screen

This screen is displayed when you selected the investigation mode from the options screen. The test stops on the first error detected and the error data is displayed (see "Requester Error Screen Example," that follows).

```
------------------------------------------------------------- mm/dd/yy hh:mm
 FUNCTION ON SCREEN:  STAND ALONE TEST
         REQUESTER          INVESTIGATION MODE          PERMANENT TEST


         CURRENT COUNT: NN









===>     PRESS BREAK TO STOP THE TEST

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE
```

The screen above shows the "permanent test" option selected in the first line. If you selected the count option, the first line appears as follows:

REQUESTER INVESTIGATION MODE TEST COUNT = xx

The link test function terminates when the specified count (if any) is reached. The following message is displayed in the message area:

COUNT OF TESTS EXHAUSTED - LINK TEST FUNCTION COMPLETED

The CURRENT COUNT is incremented from 1 to the user-specified count or, for a permanent test, from 1 to 65535, wrapping back to 0.

1. Press BREAK (ATTN) to stop the test.
2. Press F4 to continue the test, or press F1 to end it.

Note: When the broadcast address (X'FF') is used in the Link Test Initialization screen, the test stops and the following message is displayed, where XX is the address of the responder:

ADDRESS RECEIVED: XX

Requester Error Screen Example

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: STAND ALONE TEST
         REQUESTER         INVESTIGATION MODE          PERMANENT TEST


         CURRENT COUNT



         HARDWARE ERROR ON TRANSMIT

         SCF:           LCS:        SES:




===>

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE
```

SCF, LCS, and SES are described on page 312.

Statistical Counters Screen

The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds. The screen has the following format:

```
------------------------------------------------------------- mm/dd/yy hh:mm
  FUNCTION ON SCREEN:  STAND ALONE TEST
      REQUESTER        STATISTICAL COUNTERS        TEST COUNT = NN

  TEST FRAMES SENT OK              : NN
  TEST FRAMES RECEIVED OK          :
  INVALID ADDRESS FIELD RECEIVED   :
  INVALID CONTROL FIELD RECEIVED   :
  INVALID/TOO MUCH DATA RECEIVED   :
  COMMAND REJECT                   : A
  HARDWARE ERROR        ON TRANSMIT:            ON RECEIVE:
  SCANNER ERROR         ON TRANSMIT:            ON RECEIVE:
  TRANSMISSION ERROR    ON TRANSMIT:            ON RECEIVE:
  TIMEOUT               ON TRANSMIT:            ON RECEIVE:

===>  PRESS BREAK TO STOP THE TEST

F1:END  F2:MENU2  F3:ALARM  F4:CONTINUE  F6:RULES
```

For the permanent test, the counters can count up to 65355, wrapping back to 0.

1. Press BREAK (ATTN) to stop the test.
2. Press F4 to continue the test, or F1 to end it.

A Is a count of the number of times that D2 is returned under LCS. This information is used only by the service representative.

Personal Pattern Screen

This screen allows you to create a personal pattern of up to 128 bytes.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
                            PERSONAL PATTERN

          - ENTER PAIRS OF HEX CHARACTERS SEPARATED BY ONE BLANK
        ==> 00 01 02 04 08 10 20 40 80 AB AC AE CC CF DD EE <==
        ==> EE FF 24 48 88 8F                               <==
        ==>                                                 <==
        ==>                                                 <==
        ==>                                                 <==
        ==>                                                 <==
        ==>                                                 <==
        ==>                                                 <==

 - ENTER 'C' WHEN PATTERN IS COMPLETE
===>

F1:END  F2:MENU2  F3:ALARM    F6:QUIT
```

From the above screen:

1. Enter the pattern as pairs of hexadecimal characters, each pair separated by a single blank.
2. Enter C then press SEND to check the data for valid hexadecimal characters.
3. The investigation mode screen or the statistical counters screen is displayed, depending on the selected option. Return to step 7. The link test is started at this point.

Null Frame/Pattern

You can send a null (empty) data pattern. To do this, enter no hexadecimal characters, enter C, then press SEND. This may be useful if you wish to send an empty message consisting only of a header and a trailer.

The null pattern must be used if the responder is an IBM 3705 Communication Controller running NCP.

Responder Link Test Program

Warning: Loading the link test program destroys the control program.

Loading the Stand-Alone Link Test Program

1. Set the **MOSS alone,** refer to page 12.
2. If NCP is not loaded in the responder controller, define the intermediate routing node (IRN) link as an IPL port in the IPL port information (LKP function).
3. For Models 410, 41A, 610, and 61A make sure that a CCU which controls the line is selected. See the MSA. If a CCU is not selected, use the CSR function on menu 2 to select a CCU.
4. L T S SEND to load the program.

```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: LD LINK TEST RESP


- SELECT THE CCU YOU WANT TO IPL (1 TO 3)  ==>     A

     1 = AVAILABLE CCU(S) ACCORDING TO OPERATING MODE
     2 = CCU-A
     3 = CCU-B

- SELECT AN IPL OPTION (1 TO 2)   ==>      B
     1 = NORMAL
     2 = STEP-BY-STEP




===>

F1: END  F2: MENU2  F3: ALARM
```

5. For Models 410, 41A, 610, and 61A choose the CCU to be IPLed **A**, then an IPL option **B**. The IPL starts.

   The machine status area shows the progression of the loading process.
6. When LINK TEST PROGRAM LOADED is displayed in the MSA, press F1 to terminate IPL.
7. S A T SEND to initiate the SAT function.

Initialization Screen

```
------------------------------------------------------------- mm/dd/yy hh::mm
 FUNCTION ON SCREEN:  STAND ALONE TEST
         RESPONDER       INITIALIZATION


         - LINK ADDRESS                  ==> A

           TSS: 0-895   HPTSS: 1024-1039









===>

F1:END  F2:MENU2  F3:ALARM
```

1. Enter the link address **A**. The link address is the address of the 3745 port to which the link cable is connected.
2. Press SEND. When the initialization is successful, the initialization screen changes to:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
         RESPONDER       INITIALIZATION


         - LINK ADDRESS                  ==> A

           TSS: 0-895   HPTSS: 1024-1039

                                INITIALIZATION COMPLETED

         - PRESS SEND TO START THE TEST









===>

F1:END  F2:MENU2  F3:ALARM
```

3. Press SEND.
4. The initialization screen is replaced by the statistical counters screen. The link test is started at this point.

Statistical Counters Screen

The counters are refreshed twice per second. When the value of a counter changes, this count is highlighted for two seconds. The screen has the following format:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:  STAND ALONE TEST
      RESPONDER        STATISTICAL COUNTERS
  TEST FRAMES RECEIVED OK          :
  TEST FRAMES SENT OK              :
  INVALID ADDRESS FIELD RECEIVED   :
  INVALID CONTROL FIELD RECEIVED   :
  MORE THAN 128 BYTES RECEIVED     :

  HARDWARE ERROR        ON TRANSMIT:                ON RECEIVE:
  SCANNER ERROR         ON TRANSMIT:                ON RECEIVE:
  TRANSMISSION ERROR    ON TRANSMIT:                ON RECEIVE:
  TIMEOUT               ON TRANSMIT:


===>  PRESS BREAK TO STOP COUNTER REFRESH

F1:END  F2:MENU2  F3:ALARM
```

When you press BREAK (ATTN), the screen is frozen, but the test (and counter incrementation) continues.

1. If no error was detected, press F4 to restart counter refreshing.
2. If at least one error was detected, press F4 to restart counter refreshing, or press F5 to display the last error that was detected (see "Responder Error Screen Example" that follows).

When you press BREAK, the screen is frozen, but the test (and counter incrementation) continues.

- If no error was detected, press F4 to restart counter refreshing.
- If at least one error was detected, press F4 to restart counter refreshing. SCF, LCS, and SES codes are explained on page 312.

The test stops when the specified count of tests is exhausted: the stand-alone link test functions is terminated.

Meaning of SCF, LCS, and SES Codes

The following list includes only transmission faults. For other values of these codes, consult your IBM service representative.

SCF	LCS	SES	Meaning
xx	E2	00	CTS dropped
xx	EE	00	DSR dropped
xx	F2	00	CTS failed to rise
xx	F4	00	DSR failed to rise
xx	F6	00	Cable not installed
xx	F8	00	DSR/CTS failed to drop
xx	E2	80	Modem retrain
xx	**	40	Abort line idle
xx	**	00	Abort
xx	**	10	CRC check
xx	**	08	Flag off boundary
xx	**	01	Early flag

Where:
** may be any value.
xx is a byte whose bits have the following meaning:

Bit	Meaning
0	Halt/abort
1	Service request
2	Overrun/underrun
3	Modem check
4	Data stored
5	End of message
6	Data received
7	Receive sequence

Switchback (SBK) Models 410, 41A, 610, and 61A

Switchback is used **only** when you have a twin configuration in **twin-backup mode** and a fallback has been performed. You use this function from the MOSS console.

Messages

See Appendix D for a list of Switchback messages and other messages.

IPL phases are displayed in the fourth and seventh lines of the MSA (fields r to x) and are explained in Appendix A.

The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: SWITCHBACK

 - SELECT THE SWITCHBACK PHASE (1, 2) ==>

      1 = REQUEST NETWORK OPERATOR TO DEACTIVATE LINES (IF NECESSARY)
      2 = PERFORM SWITCHBACK









===>

F1:END  F2:MENU2  F3:ALARM
```

To enter the switchback phase:

1. If you want to request network deactivation, enter 1. An alert is sent to the host. Wait for confirmation before continuing with the switchback procedure.
2. Enter 2 to perform switchback. An IPL of CCU-X is automatic.

   Note: CCU-X will either be CCU-A or CCU-B.

When switchback is complete, you will get the function selection rules screen. An automatic IPL is started.

If you try to perform switchback and some of the resources on the CCU to be switched are not deactivated, the following screen is displayed:

All Models
except 21A, 31A, 41A, 61A

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN:               SWITCHBACK

    WARNING:
       SOME RESOURCES ON THE CCU TO BE SWITCHED ARE NOT DEACTIVATED
       NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
       NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX

    CANCEL OR FORCE THE SWITCHBACK: C=CANCEL, F=FORCE ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

Models 21A, 31A, 41A, 61A

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN:               SWITCHBACK

    WARNING:
       SOME RESOURCES ON THE CCU TO BE SWITCHED EITHER ARE NOT
       DEACTIVATED OR CONTAIN AN ACTIVE TRANSMISSION GROUP
       NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
       NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX
       XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX   XXXXXXXXXXXXXXX  XXXXXXXXXXXXXXX

    CANCEL OR FORCE THE SWITCHBACK: C=CANCEL, F=FORCE ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

It displays the network address of the line that is not deactivated. You also have to ask the listed host operators to free up the resources.

You are requested to either cancel the switchback (C) or force the switchback even though resources are running (F).

A new line is displayed at the bottom of the screen:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN:               SWITCHBACK

    WARNING:
       SOME RESOURCES ON THE CCU TO BE SWITCHED ARE NOT DEACTIVATED
       NETWORK ADDRESS OF A LINE THAT IS NOT DEACTIVATED: XXXX
       NOTIFY THE FOLLOWING HOST OPERATORS THAT THEY MUST FREE UP RESOURCES
       XXXXXXXXXXXXXX   XXXXXXXXXXXXXX   XXXXXXXXXXXXXX  XXXXXXXXXXXXXX
       XXXXXXXXXXXXXX   XXXXXXXXXXXXXX   XXXXXXXXXXXXXX  XXXXXXXXXXXXXX
       XXXXXXXXXXXXXX   XXXXXXXXXXXXXX   XXXXXXXXXXXXXX  XXXXXXXXXXXXXX
       XXXXXXXXXXXXXX   XXXXXXXXXXXXXX   XXXXXXXXXXXXXX  XXXXXXXXXXXXXX

    CANCEL OR FORCE THE SWITCHBACK: C=CANCEL, F=FORCE ==>

    PLEASE CONFIRM YOUR SELECTION: Y OR N, THEN PRESS SEND ==>
===>

F1:END  F2:MENU2  F3:ALARM
```

This screen requests you to confirm your decision to cancel or force the switchback by entering either Y or N.

When switchback is complete, a completion message appears in the MSA. Then you will get the Application Rules screen.

Set Branch Trace (SBT)

Use the SBT function to save in the branch trace buffer information about non-sequential instructions, for example, when a branch is executed or a new program level is entered. The information saved is: *come-from interrupt level*, *come-from address*, *go-to interrupt level*, and *go-to address*.

You can execute simultaneously a branch trace and an address compare. Refer to "Simultaneous Address Compare and Branch Trace" on page 318.

Note: Before executing a branch trace, make sure that the branch trace buffer is allocated. If it is not, allocate it. Refer to "Branch Trace Buffer Allocation" on page 84.


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SET BRANCH TRACE

          - ENTER Y FOR CCU STOP ON BT BUFFER FULL     ==> N     A

          - ENTER Y FOR BT BUFFER WRAP                 ==> Y     B

          - ENTER Y FOR BT STOP ON AC                  ==> N     C

          - ENTER LOWER LIMIT ADDRESS (1 TO 6 DIGITS)  ==>       D

          - ENTER UPPER LIMIT ADDRESS (1 TO 6 DIGITS)  ==>       D

          - BLANK THE UNWANTED LEVEL INTERRUPT(S)      ==> 1234  E
===>

F1:END  F2:MENU1  F3:ALARM  F4:LATEST SELECTED BT VALUES
```

From the above screen:

- Enter the branch trace parameters.
- Press SEND.
- The branch trace is then started. BT appears in MSA field e (Appendix A). The Branch Trace Parameter screen is displayed (see page 3).
- If you press F4, you will get the latest branch trace values since the last IPL. It might be helpful to use the F4 key when you want to execute a branch trace several times with the same or nearly the same parameters.

A If you enter Y, the CCU stops when the buffer is full. See description for line **C** and the next table.

Option CCU STOP==> Y can interrupt your applications.

B If you enter Y, recording resumes at the wrap address when the buffer is full; if you enter N, the branch trace function is deactivated when the buffer is full.

C If you enter Y, the branch trace function is deactivated when a simultaneous address compare is successful, and the CCU stops if you entered Y on line **A**.

D Addresses of the lower and upper limits of CCU storage to be traced. These limits must be in the range of the storage. The lower limit address must be smaller than the upper limit address.

Note: A branch trace may be stored starting at the specified lower limit address minus 4 or 2.

E To blank an interrupt level, use the DEL CHAR key or override the corresponding number by a blank character (space bar).

Table 48. Branch Trace Options

BT Options	When Buffer Is Full	Action
CCU STOP=Y and WRAP=Y	CCU stops; BT remains active. (However, if an address compare is active, the CCU does not stop.)	Select function Start CCU to restart the CCU and to resume BT at the wrap address.
CCU STOP=Y and WRAP=N	CCU stops; BT is deactivated.	Select function Start CCU to restart the CCU.
Note: More information on CCU STOP is given under "Simultaneous Address Compare and Branch Trace."		

Branch Trace Buffer

The branch trace buffer is defined at control program generation time. Its address and length are provided by the control program to MOSS when the 3745 is initialized. The length is in local store register (LSR) X'7C', and the address of the first branch trace entry is in LSR X'7D'. The address of the next branch trace entry to be recorded is in LSR X'7B'.

To display the branch trace buffer, use the Display Long function. The buffer contents are given under "Displaying the Branch Trace Buffer" on page 179.

If you execute a branch trace before the control program is loaded, you must first allocate the branch trace buffer. To do so, refer to "Branch Trace Buffer Allocation" on page 84.

The branch trace buffer can be transferred to the host via a 3745 NCP dump. The procedure is described in *NCP, SSP, and EP Diagnosis Guide*.

Simultaneous Address Compare and Branch Trace

If you specify option CCU STOP in the branch trace when running simultaneously with the address compare, the option applies to the address compare function but not to the Branch Trace function. For example, if you execute these two functions simultaneously with CCU STOP for BT, the CCU stops if the address compare is successful, but will not stop upon reaching the end of the branch trace buffer.

Termination

To cancel the branch trace, select the RBT function (see page 277). Pressing F1 does not cancel the branch trace in progress but only the Set Branch Trace function.

The branch trace is automatically canceled when:

- The buffer is full and you specified NO WRAP (WRAP=N), or
- A CCU address compare is successful and you specified branch trace stop on address compare (BT STOP ON AC=Y).

Stop On CCU Check (SCK)

Use the SCK function to cancel Bypass CCU Check. The CCU stops when a CCU check condition occurs (default) on a CCU level other than 1.

Once selected, this function is performed immediately. MSA field j displays STOP-CCU-CHK.

To reset this function, use the BCK function.

Stop On IOC Check (SIK)

Use the SIK function to force the CCU to hardcheck when an IOC-detected level 1 interrupt occurs.

Once selected, this function is performed immediately. MSA field i displays STOP-IOC-CHK. To reset this function, use the BIK function.

Set I-Step (SIP)

Use the SIP function to set the control program to instruction-step mode. That is, the control program and the cycle steal mechanism stop after the current instruction has been executed. The next instruction is executed when the CCU Start function (STR) is selected (see page 339).

Once selected, this function is performed immediately. MSA field c displays I-STEP. When the current instruction has been executed, STOP-PGM is displayed in field h.

Note: In instruction step mode, if you modify the contents of the instruction address register (alter function on work register 0), the next instruction may not be the expected one.

Scanner Interface Trace (SIT)

Use the SIT function to collect the events that occur on a given line, as well as the checkpoint entries. These events are recorded in TSS, ESS, and HPTSS internal buffers, and can be sent to the MOSS via the CCU storage area dedicated to MOSS/TSS communication. The 3745 SIT is called internal SIT (I-SIT). The host SIT is called external SIT (E-SIT).

Main Differences between E-SIT and I-SIT

- For the E-SIT, the contents of the buffer are continuously sent to the host.
- For the I-SIT, the buffer normally works in wraparound mode and is transferred to the MOSS only on request. If you are in no wraparound mode, when the buffer is full, the trace is frozen (the trace is stopped but the buffer is not released).
- At the host, you can print the trace on 132 characters. This means hexadecimal and formatted data are visible at the same time.

  On the MOSS console, you cannot display hexadecimal and formatted data at the same time (see “Displaying I-SIT Buffer or File” on page 333).

Restrictions

- The maximum buffer size is 8KB (1KB = 1024 bytes).
- Internal SIT trace is limited to 4 per scanner and 8 per CCU.
- External SIT trace is limited to 8 per CCU.
- For a mix of external and internal SIT traces the limit is 8 per NCP/CCU.
- A maximum of four traces per scanner can be started according to the line speed:
  - High-speed line (from 230 kbps for TSS and from 1.5 million bps for ESS and HPTSS): One trace in a buffer of 8KB for TSS and HPTSS, two traces maximum in two buffers of 4KB each for ESS.
  - Medium-speed half-duplex line (between 56 kbps and 65 kbps): Two traces maximum in two buffers of 4KB each.

  - Medium-speed duplex line (between 56 kbps and 65 kbps): One trace maximum in a buffer of 8KB.
  - Low-speed line: Four traces in four buffers of 2KB each.
- If an E-SIT is running for a given line, an I-SIT cannot be started on this line (and conversely).
- If a hardware configuration change has been made, for example, a cable change, you must update the configuration data file before using the SIT function.

How to use the host SIT and SIT field details are described in the *NCP, SSP, and EP Diagnosis Guide*.

Starting SIT

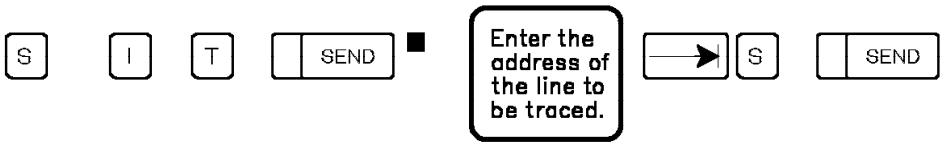
S I T SEND The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

- ENTER A DECIMAL LINE ADDRESS FROM 0 TO 1071         ==>  A

- ENTER THE ACTION TO BE PERFORMED (S, C, F, R, D, G) ==>  B

            S: START INTERNAL TRACE
            C: CANCEL INTERNAL TRACE
            F: FREEZE INTERNAL TRACE
            R: RESUME INTERNAL TRACE
            D: DISPLAY CSP STATUS
            G: GET I-SIT BUFFER FROM SCANNER
WARNING: DURING I-SIT BUFFER TRANSFER EVENTS MAY BE LOST

===>

F1:END  F2:MENU2  F3:ALARM  F4:ISIT BUFFER HANDLING
```

Enter the address of the line to be traced **A** .

Enter S, C, F, R, D, or G, **B** depending on the required I-SIT procedure. Then press SEND. These I-SIT procedures are explained in the following pages.

Starting an Internal Trace




```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

START I-SIT SELECTED FOR LINE 32    RLN  0   IN SCANNER 9

   - TRACE IN WRAP MODE (Y OR N)       ==>  Y

   - CHECKPOINT TRACE (Y OR N)         ==>  Y

   - ENTER DATA COUNT (0 TO 255 OR ALL) ==> ALL

   - STOP TRACE ON ERROR (Y OR N)       ==> N

   - MAXIMUM AVAILABLE SIZE (Y OR N)    ==> N

===>

F1:END  F2:MENU2  F3:ALARM             F6:QUIT
```

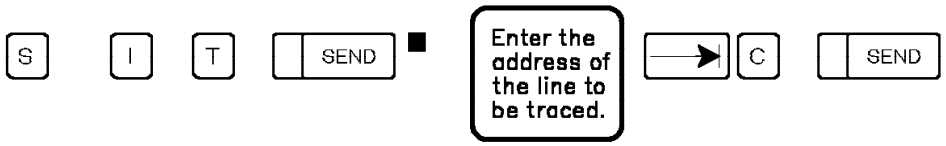
From the above screen:

- After you have changed the default options (if necessary), press SEND.
- The SIT selection screen is displayed with I-SIT STARTED ON LINE xxxx SCANNER xx.

WRAP MODE: Allows you to trace in a wraparound mode or to stop the trace when the buffer is full.
CHECKPOINT: Allows you to record checkpoint entries.
DATA COUNT: Is the size of the data record you want to trace (starting from byte 1).
STOP ON ERROR: Allows you to stop the trace after an error occurs.
SIZE: Is the size of the buffer you want for that trace. The default sizes according to the line speed are 2, 4, or 8KB. If you enter 'Y', the maximum available size will be taken.

Canceling an Internal Trace

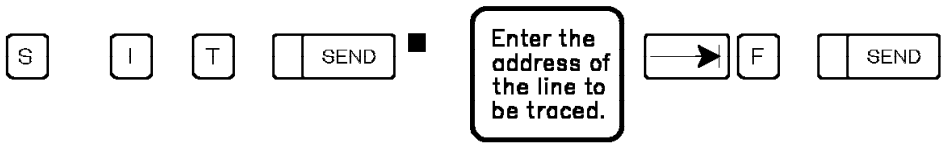
This option allows you to stop an active trace. The buffer is released and no longer available (its content is lost).



The trace will be stopped and the following message displayed:
I-SIT CANCELED ON LINE xxxx SCANNER xx

Freezing an Internal Trace

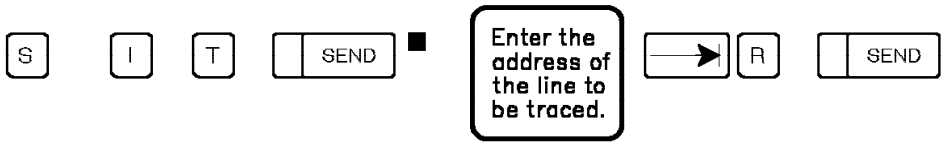
This option allows you to stop a trace temporarily. The buffer in use for that trace is not released, but the events occurring during the freezing time are lost.



The trace will be stopped and the following message displayed:
I-SIT FROZEN ON LINE xxxx SCANNER xx

Resuming an Internal Trace

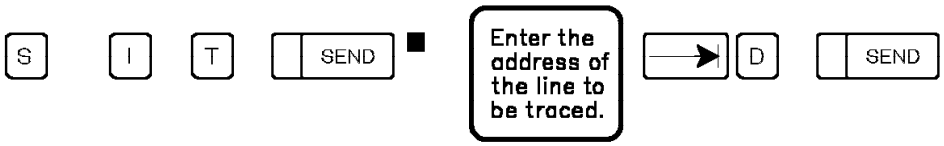
This option allows you to restart a trace stopped previously by a freeze action.



The trace will be restarted and the following message displayed:
I-SIT RESUMED ON LINE xxxx SCANNER xx

Displaying CSP Status

This option allows you to display the status of the active and frozen I-SIT(s) for a specific scanner.

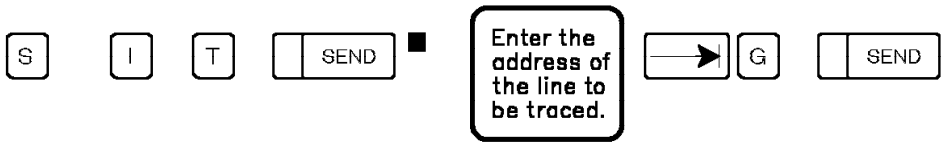


The following screen will be displayed. The number of lines displayed depends on the number of I-SIT(s) active or frozen. If no SIT is active or frozen, the following message is displayed:
NO TRACE ACTIVE.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

                            CSP 2  TRACE STATUS

                          LINE  27 : I-SIT ACTIVE

                          LINE  18 : I-SIT FROZEN









===>

F1:END  F2:MENU2  F3:ALARM                          F6:QUIT
```

Getting I-SIT Buffer from Scanner

This option allows you to transfer the buffer attached to the selected line to the MOSS storage.



The following message is displayed:
I-SIT AVAILABLE FROM BUFFER FOR LINE xxxx SCANNER xx.

Press F4 and the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh::mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

- ENTER THE ACTION TO BE PERFORMED (D, E, F) ==>

            D: DISPLAY I-SIT
            E: ERASE I-SIT DISK FILE
            F: FILE I-SIT ONTO DISK




===>

F1:END  F2:MENU2  F3:ALARM                      F6:QUIT
```

Displaying I-SIT Buffer or File

This option allows you to display the I-SIT in a format similar to the ACF/TAP one.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

F4 D SEND

If you press F4 before selecting the GET I-SIT BUFFER FROM SCANNER, you will display the I-SIT previously saved on the disk file (if any).

If there is a trace both in the buffer and on disk, the following screen is displayed.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

- ENTER B, D TO DISPLAY THE REQUESTED I-SIT ==>

        B: LINE XXXX SCANNER XX I-SIT CONTAINED IN BUFFER
        D: LINE XXXX SCANNER XX I-SIT CONTAINED ON DISK




WARNING: DISPLAYING DISK I-SIT DESTROYS CURRENT BUFFER CONTENTS

===>

F1:END  F2:MENU2  F3:ALARM                          F6:QUIT
```

Enter 'B' or 'D' accordingly, then press SEND.

If there is no trace on disk, the Display Event selection screen is displayed, as shown below.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

DISPLAY I-SIT EVENTS

- ENTER A, I, C, S, P, X, R, E, O,     TO SELECT DISPLAY OPTION ==>
    A: ALL         EVENTS            O: OVERUN EVENTS
    I: IOH         EVENTS            V: XMIT CW
    C: CHECKPOINT EVENTS             W: RCV CW
    S: STATUS      EVENTS
    P: PARAMETER   EVENTS
    X: XDATA       EVENTS
    R: RDATA       EVENTS
    E: SCF + SES + LCS :    ENTER HEX VALUE (6 DIGITS) ==>

===>

F1:END  F2:MENU2  F3:ALARM                          F6:QUIT
```

This screen allows you to select the events you want to display. Enter the option required, then press SEND.

The meaning of SCF, LCS, and SES codes is given on page 381.

The Display Hexadecimal Data screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

LINE XXXX SCANNER XX                ENTER T FOR TRANSLATED DATA ==>
                          ENTER L FOLLOWED BY THE DATA TO LOCATE ==>

0001 PARM                          000036001007F59C0B58000004041F0B
0002 STAT SET MODE CMND COMPLETE   44010000C00003030000
0003 PARM                          010036001007F59C0B58000004041F0B
0004 STAT ENABLE   CMND COMPLETE   4402009EC00083830000
0005 IOH  SET MODE                 22100116
0006 CHKPT                         A6B501A0
0007 XDATA                         AA3232328244
0008 XDATA                         C2C27F7F8344

===>

F1:END  F2:MENU2  F3:ALARM F4:TOP F5:BOTTOM F6:QUIT              F8:FORWARD
```

From the above screen:

- Enter 'T' then press SEND to display the data in translated form. The next screen is displayed.
- Enter 'L' followed by a string of 2, 4, 6, or 8 hexadecimal digits long to locate a string of hexadecimal data. This option is available only if you entered 'A' (for ALL EVENTS) on the preceding screen.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: SCANNER I/F TRACE

LINE XXXX SCANNER XX              ENTER H FOR HEXADECIMAL DATA ==>

0001 PARM                          ......5.........
0002 STAT SET MODE CMND COMPLETE   ................
0003 PARM                          ......5.........
0004 STAT ENABLE   CMND COMPLETE   ......CC........
0005 IOH SET MODE                  ....
0006 CHKPT                         Y...
0007 XDATA                         ...B.
0008 XDATA                         BB""C.


===>

F1:END  F2:MENU2  F3:ALARM F4:TOP F5:BOTTOM F6:QUIT              F8:FORWARD
```

Erasing I-SIT File

This option allows you to empty the I-SIT file from the disk when it exists.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

The following message will be displayed:
DISK FILE IS NOW EMPTY

Filing I-SIT Buffer onto Disk

This option allows you to file the I-SIT buffer onto the disk.

First select the SIT option GET I-SIT BUFFER FROM SCANNER then:

If the disk file is empty, the buffer is written onto the disk and I-SIT SAVED ON DISK is displayed.

If the disk file is not empty, you are asked if you want to erase it before filing the buffer. The following message is displayed:
DISK FILE IS NOT EMPTY, PRESS 'E' BEFORE SAVING

Stop CCU (STP)

Use the STP function to stop the control program processing immediately after the current instruction has been executed. MSA field h displays STOP-PGM.

Stopping the CCU can interrupt your applications.

Once selected, this function is performed immediately. It requires no further action. To resume processing the control program, use the STR function.

Start CCU (STR)

Use the STR function to resume processing the control program. When the control program is in instruction-step mode, the STR function causes the execution of the next instruction. To set the control program in instruction-step mode, use the SIP function, described on page 325.

Once selected, this function is performed immediately. No further action is required. When the CCU is started, MSA field h displays RUN.

The STR function cannot be used to resume CCU processing if the CCU is in STOP mode because of a hard-check or a reset (MSA field h).

TRSS Interface Display (TID)

The token-ring subsystem (TRSS) allows connection to an IBM Token-Ring Network that uses the token-ring protocol. The TRSS in the 3745 is controlled by the NCP Token-Ring Interconnection (NTRI) function of NCP.

The hardware is based on a processor-driven card called the token-ring interface coupler (TIC) card, and on the token-ring multiplexer (TRM) card. The combination of a TRM and the associated TICs (up to two) is called a token-ring adapter (TRA). The combination of all the TRAs in the 3745 is called the TRSS. One token-ring network can be accessed by each TIC card.

Use the TID function to display information on the status and activity of a selected TIC. In addition, a function is provided that will allow an 'activate link' command to be performed at the host.


```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: TRSS INTERF DSPLY
                                      TRA/TIC SELECT

 - ENTER A DECIMAL LINE ADDRESS (1088 TO 1095) ==>

                                        TRA#   LINE ADDRESS  TIC  CCU
                                         1      1088  1089    YY   A

                                         5      1092  1093    YY   B

 - TYPE "A" TO ALLOW "ACTIVATE LINK" COMMAND ==>


===>

F1:END  F2:MENU2  F3:ALARM
```

The table containing the installed TRAs, TICs, corresponding line addresses, and CCUs will be filled in according to the configuration of the machine.

Allow Activate Link

The Allow Activate Link function is needed if:

1. An automatic TIC dump is requested by NTRI which causes the Activate Link (from the host) to be inhibited.
2. Before the automatic dump is completed, the MOSS goes down or is unable to complete the dump and does not re-enable the activate link.

To perform the Allow Activate Link function, enter the line number and an "A" in the space provided.

Successful completion of this function will allow the host operator to activate the token-ring network.

Token-Ring Interconnection Function

If you enter a valid line address, the following screen is displayed:

```
TRA 1 CONNECT       TIC 1 DISABLED A

------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: TRSS INTERF DSPLY
                     TOKEN-RING INTERCONNECTION

 B     NODE ADDR:      xxxxxxxxxxxx       RING STATUS:
     GROUP ADDRESS:      xxxxxxxx         SIGNAL LOSS:              F
     FUNCTIONAL ADDR:    xxxxxxxx         HARD ERROR:           ON  F
                                          SOFT ERROR:           ON  F
     IR:  C                               TRANSMIT BEACON:      ON  F
     BR:                                  LOBE WIRE FAULT:          F

     OPERATING SPEED:    D                AUTO REMOVAL ERROR 1: ON  F
                                          REMOVE RECEIVED:      ON  F
                                          COUNTER OVERFLOW:         F
                                          SINGLE STATION:       ON  F
                                          RING RECOVERY:            F
     INITIALIZATION ERROR 11:    DMA BUS ERROR E
===>

F1:END  F2:MENU2  F3:ALARM          F5:REFRESH F6:SELECT
```

A The machine status area (MSA) 4th line (for CCU-A) and 7th line (for CCU-B) contains the following information:

- TRA #
- TRA mode (connect, disconnect, or unknown)
- TIC ID (1-2)
- TIC mode (idle, reset, initialized, open, closed, frozen, or disabled).

Refer to “Token-Ring/TIC Information” on page 404 for detailed information.

B Node, group, and functional addresses of the token-ring (in hex). This is obtained from the TIC OPEN block (from NCP token-ring interconnection, NTRI).

C TRM activity information: A display of the IR and BR bits of the selected TRA and TIC (ON or blank). The IR bit indicates that an interrupt is pending from the selected TIC. The BR bit indicates that a data transfer request from the direct memory access (DMA) is pending for the TIC.

D Token-ring operating speed: 4 or 16 Mbps.

E A message indicating an error condition of the selected TIC, if one exists.

See “Interpreting Field E” on page 343 for the TID error messages and their descriptions.

F Token-Ring Status: Selected bits from the token-ring status block (from NTRI). The indicators are either ON or blank.

See “Interpreting Field F” on page 347 for the description of status indicators that are ON.

Interpreting Field E

BRING-UP ERROR x

- Ask the host operator to activate the link for this TIC.
- If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem.

  If not fixed then ☎ and give BER information.

ERROR DETERMINING TRID MESSAGE

- The selected TIC is not yet activated by NCP.
  It is possible to access a TIC **only** after it has been activated once by NCP/VTAM*.
- Activate the TIC with NCP.

MOSS/TIC ERROR: FUNCTION CANCELLED

- Ask the host operator to reactivate the link for this TIC if it has been deactivated for any reason.
- Check information displayed in the MSA field of the TID screen.
  Refer to “Token-Ring/TIC Information” on page 404.
- If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem.

  If not fixed then ☎ and give BER information.

RECEIVE AND TRANSMIT ERRORS

- Ask the host operator to activate the link for this TIC.
- If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem.

  If not fixed then ☎ and give BER information.

INITIALIZATION ERROR xx

The meaning of initialization errors and actions to perform is given below.

Table 49. Token-Ring - Initialization Error Description and Action

Initialization Error	Error Description and Action
01 to 07	The specified initialization parameter (**E** on previous screen), was found to be invalid by the TIC microcode. • Use the CDF function (LA and port display) to see the valid options for the TIC and compare them to the generation parameters and correct if necessary. Then ask the host operator to activate the link for this TIC. • If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. • If not fixed then ☎ and give BER information.
08 to 13	The specified hardware problem (**E** on previous screen), has been detected by the TIC. • Ask the host operator to activate the link for this TIC. • If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. • If not fixed then ☎ and give BER information.

OPEN ERROR xx

The meaning of each open error and actions to perform is given below.

Table 50 (Page 1 of 3). Token-Ring - Open Error Description and Action

Open Errors	Open Error Description and Action
INVALID PARAMETER	An open parameter was found to be invalid by the TIC microcode. • Check the installation and generation parameters, and correct them if necessary. Then ask the host operator to activate the link for this TIC. • If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. • If not fixed then ☎ and give BER information.

Table 50 (Page 2 of 3). Token-Ring - Open Error Description and Action

Open Errors	Open Error Description and Action
FUNCTION FAILURE (01)	The lobe media test has failed, or another MAC frame was seen on the ring during the lobe media test (Phase 0). • Unplug the lobe cable from the IBM 8228. • Ask the host operator to activate the link for this TIC. • If the problem persists, unplug the TRA cable for this TIC and ask the host operator to reactivate the link, then look at RING STATUS, (field **F** on the screen): – LOBE WIRE FAULT is ON (without any other status ON): Change the TRA cable. – Another ring status (field **F**) is ON: Perform appropriate action.
SIGNAL LOSS (02)	The TIC is detecting no signal on the ring at the receiver side. • Ask the host operator to activate the link for this TIC. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* SX27-3710 and page 349.
WIRE FAULT (03)	There was a fault on the TIC line.
FREQUENCY ERROR (04)	A frequency error occurred on the TIC line.
TIME OUT (05)	The TIC has not been able to complete the specified phase in the time allowed. • Ask the host operator to activate the link for this TIC. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* and page 349.
RING FAILURE (06)	The TIC is the active monitor and cannot complete the ring purge process in the time allowed. • Ask the host operator to activate the link for this TIC. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* and page 349.
RING BEACONING (07)	The monitor contention process was not completed in the time allowed, or a beacon frame was received. • Unplug the lobe cable from the IBM 8228 Multistation Access Unit. • Ask the host operator to activate the link for this TIC. • Look at RING STATUS, (field **F** on the screen): – LOBE WIRE FAULT is ON (without any other status ON): Refer to the *Token-Ring Network Problem Determination Guide* and page 349. Perform the appropriate action.
DUPL NODE ADDRESS (08)	Some other adapter on the ring has the same specific address as this TIC. • Check the installation and generation parameters, and correct them if necessary. Then ask the host operator to activate the link for this TIC. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* and page 349.

Table 50 (Page 3 of 3). Token-Ring - Open Error Description and Action	
Open Errors	**Open Error Description and Action**
REQUEST PARAMETER (09)	The parameter server was not able to provide the requested parameters in the time allowed. • Ask the host operator to activate the link for this TIC. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* and page 349.
REMOVE RECEIVED (10)	A remove force MAC frame was received by this TIC during the open process. • Contact the token-ring operator, who should help you solve this problem. • When the problem is corrected, ask the host operator to activate the link for this TIC.
IMPL FORCE RECEIVED (11)	An IMPL force MAC frame was received by the TIC and the adapter has been closed. The adapter is in the same state as after initialization and will have to be opened again.

For any other message in field **E** refer to the *3745 Advanced Operations Guide.*

Interpreting Field F

The meaning of each ring status indicator and the actions to perform are given below.

Table 51 (Page 1 of 2). Token-Ring - Ring Status Indicator Description and Action

Ring Status Indicator F	**Description and Action**
SIGNAL LOSS	A receiver exception currently exists in the TIC. The TIC is not receiving signals from the ring. This is a temporary condition and will either be recovered by the ring protocol or will go into a beacon condition (see HARD ERROR).
HARD ERROR	The TIC is transmitting or repeating beacon MAC frames. (See also TRANSMIT BEACON.)
SOFT ERROR	The TIC has transmitted a soft error report frame. This is ring-recoverable. • No action if SOFT ERROR is ON from time to time. • If SOFT ERROR is permanently ON: – General traffic degradation over all the Ring Stations including this adapter station: If no: no action If yes: Refer to the *Token Ring Network Problem Determination Guide*, for Soft Errors investigation and resolution. – Traffic degradation over this adapter station only: Check the correct connections of the lobe cable between the Adapter and the MAU. If the problem persists: ☎
TRANSMIT BEACON	Used in conjunction with HARD ERROR. If both indicators are ON, this TIC is generating beacon frames. Same as HARD ERROR.
SIGNAL LOSS ON and HARD ERROR ON and TRANSMIT BEACON ON	• Unplug the TIC cable from the IBM 8228. • Ask the host operator to activate the link for this TIC. • Press F5 to start refresh. – If an OPEN ERROR message is displayed in field **E** of the screen, perform the action required for that message. – If LOBE WIRE FAULT is ON (field **F**) with no message on line **E**, plug the TIC cable in again and refer to the *Token-Ring Network Problem Determination Guide* and page 349. – If LOBE WIRE FAULT is OFF (field **F**) with no message on line **E**, plug the TIC cable in again. Use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. – If not fixed then ☎ and give BER information.
SIGNAL LOSS OFF and HARD ERROR ON and TRANSMIT BEACON OFF	• Ask the host operator to activate the link for this TIC. • Press F5 to start refresh. • Analyze the information displayed on the screen using the *Token-Ring Network Problem Determination Guide* and page 349.

Table 51 (Page 2 of 2). Token-Ring - Ring Status Indicator Description and Action	
Ring Status Indicator F	**Description and Action**
LOBE WIRE FAULT	The TIC has detected an open or a short circuit in the lobe data path. With no OPEN ERROR message in field E • Check the cable connected to the IBM 8228. Reconnect if necessary. • Ask the host operator to activate the link for this TIC. • Press F5 to start refresh. – If LOBE WIRE FAULT remains ON, use another IBM 8228 socket. – Ask the host operator to activate the link for this TIC. – If LOBE WIRE FAULT remains ON, change the cable to the IBM 8228. – Ask the host operator to activate the link for this TIC. – If LOBE WIRE FAULT remains ON, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. – If not fixed then  and give BER information.
AUTO REMOVAL ERROR 1	The TIC detected an internal hardware error during the beacon auto-removal process and removed itself from the ring. • Ask the host operator to activate the link for this TIC. • Press F5 to start refresh. • If the problem persists, use the MOSS ELD function to analyze the TRSS BERs type 15 related to the last encountered token-ring problems. By using the ELD detail screen, you may find additional information which can help you fix the problem. • If not fixed then  and give BER information.
REMOVE RECEIVED	The TIC received a remove MAC frame from the network manager and has removed itself from the ring. • Contact the token-ring operator, who should help you solve this problem. • When the problem is corrected, ask the host operator to activate the link for this TIC.
COUNTER OVERFLOW	An error counter in the TIC has exceeded its maximum value of 255.
SINGLE STATION	There are no other stations connected to this ring. • If other stations are on the ring, use another IBM 8228 socket. • If the problem persists, refer to the *Token-Ring Network Problem Determination Guide* and page 349.
RING RECOVERY	The monitor contention process is in progress on the ring. No action required. If the ring does not recover, another ring status indicator should appear within 30 seconds.

Token-Ring Network Problems

Use this page to adapt the instructions given in the *Token-Ring Network Problem Determination Guide*.

If  **The IBM Token-Ring Network Problem Determination Guide tells you to:**	Do 
Record the address of the beaconing device and its nearest active upstream neighbor (NAUN) or Record the address of device 2 and device 1.	Refer to the NetView detail screen for the alert corresponding to the ring beaconing condition. If you are not using NetView, use the problem determination procedures for some other device on the ring to determine these addresses.
Remove the defective device from the ring by resetting it or powering it off.	• Deactivate the link for this TIC at the host. • Unplug the cable from the IBM 8228.
Remove the device with the highest error count.	This information must be obtained from the ring-error monitor. Contact the token-ring operator.
Restart the network application program on the removed device.	Activate the link for this TIC at the host.
Run the adapter diagnostic.	• Ask the host operator to activate the link for this TIC. • Select and perform the TRSS Interface Display (TID) function from the 3745 console – If there is an alarm, perform the action described in Chapter 1, "Alarms and Alerts" of the *3745 Problem Determination Guide*. – If there is a BRING-UP error or an INITIALIZATION error (field **C**), take appropriate action.

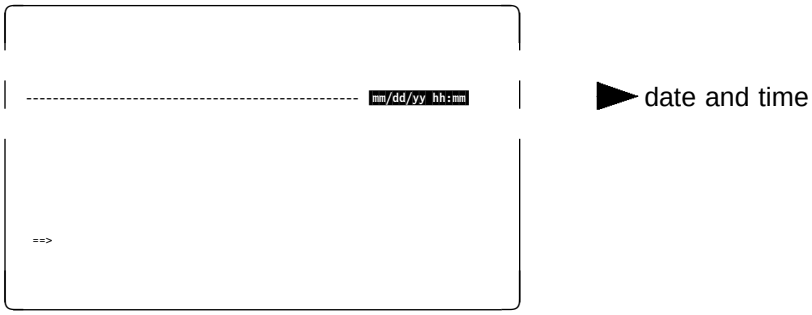
Time Services (TIM)

NOTE:

For **Models 17A, 21A, 31A, 41A, and 61A** option 1 has been moved to the MOSS-E function 'Set Time and Date'.

Use the TIM function to deal with the date and time, and the scheduled power-on, as explained in the following table.

TIM Options	Go to page
Set or modify the date and time	352
Set scheduled power-on day and time	353
Activate or deactivate the scheduled power-on	353
Display the scheduled power-on data	353



The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES

- SELECT ONE OPTION (1 OR 2), THEN PRESS SEND  ==>

    1 = SET/MODIFY DATE AND/OR TIME

    2 = DISPLAY/UPDATE 'SCHEDULED POWER-ON' DATA




===>

F1:END                F3:ALARM
```

Setting or Modifying the Date and Time

Use this option to set or modify the date and time.


```
------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES

- FILL IN APPROPRIATE FIELDS, THEN PRESS SEND


    DATE (MM/DD/YY)         ==>

    TIME (HH:MM)            ==>

    DAY (1 TO 7)            ==>

    1= SUNDAY, 2= MONDAY, 3= TUESDAY, 4= WEDNESDAY

    5= THURSDAY, 6= FRIDAY, 7= SATURDAY
===>

F1:END               F3:ALARM                          F6:QUIT
```

From the above screen:

- Set or modify the date. Separate month, day, and year by a slash (/). Example: 11/23/89.
- Set or modify the time. Separate hours and minutes by a colon(:). Example: 08:45.
- Indicate what day of the week is the day you entered in the date field. Example: the 23rd of November 1989 is a Thursday, enter 5.
- Press SEND.

Displaying or Updating the Scheduled Power-On Data

Use this option to set the scheduled power-on (that is, to indicate the days and times), and to activate or deactivate the scheduled power-on option.


```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: TIME SERVICES
                    SCHEDULED POWER-ON DATA
- FILL IN, MODIFY, OR BLANK APPROPRIATE FIELDS, THEN PRESS SEND

      SUNDAY        (HH:MM)   ==>
      MONDAY        (HH:MM)   ==>
      TUESDAY       (HH:MM)   ==>
      WEDNESDAY     (HH:MM)   ==>
      THURSDAY      (HH:MM)   ==>
      FRIDAY        (HH:MM)   ==>
      SATURDAY      (HH:MM)   ==>

      SCHEDULING ACTIVE (Y=YES, N=NO)  ==>

===>

F1:END               F3:ALARM                          F6:QUIT
```

From the above screen:

- Set the time by entering the hours and the minutes separated by a colon (:) or blank out old information.
- Enter Y to activate the scheduling function or N to deactivate it. (If you do not have any hours to schedule, enter N.)
- Press SEND.
- **Do not forget** to set POWER CONTROL = 2 on the control panel of the 3745. This will enable:
  - The scheduled power ON
  - An automatic restart of the 3745 if the AC power is lost then restored.

Refer to the *3745 Basic Operations Guide.*

Wrap Test (WTT)

The wrap test function is a problem determination aid for communication problems. It loops known data patterns back to the transmission source at defined points in the transmission path, then compares the received data pattern with the transmission pattern to isolate the faulty area.

References are made to *default* patterns and *personal* patterns. These are described in Appendix B.

- The term *modem* refers to IBM 58xx, 78xx, or other modems that activate (when in test/loop mode) in response to 'data set ready' (DSR) or other interface signals as indicated in the CCITT V.54 recommendations.
- The term *cable* refers to NTT cables or other cables that have NTT-like wrap capabilities.

Two types of test may be made for the tailgate and modem:

- The data wrap test (see “Data Wrap Test Pattern Selection for TSS” on page 376)
- The control lead wrap test (see “Wrap Test Pattern Selection” on page 377).

On some modems, other wrap tests, such as local analog wrap and remote digital wrap, are possible:

- Using the NetView* program installed
- At the modem level: Consult your modem documentation.

TSS Lines

The wrap can be made at three points:

1. **Inside the LIC**. This tests the communication path up to and including a large part of the addressed LIC.
2. **At the LIC tailgate**. This tests the whole of the LIC. You must physically replace the cable by a LIC wrap plug or a wrap cable. For **NTT cables only** (LIC types 1 to 4 only), a wrap plug is not used. Instead, turn the switch to the TEST position.
3. **Inside the modem (local loop-back)**. This is possible with all modems corresponding to the V.24 interface using pin 18 as a 'Test' lead to cause a local loop-back ('Loop 3' in the V.54 recommendation).

HPTSS Lines

The wrap can be made at four points:

1. **Inside the high-speed scanner (HSS)**. This tests the internal circuitry of the HSS.
2. **At the HSS tailgate**. This tests the whole HSS and communication path up to the tailgate. You must physically replace the cable by an HSS wrap plug.
3. **Inside the local modem (local loop-back)**. This applies only to an HSS with the network channel terminal equipment (NCTE)/EIA-547 and X.21 interfaces. It tests the HSS and the communication path up to the local modem or NCTE.
4. **Inside the remote modem (remote loop-back)**. This applies only to an HSS with the NCTE/EIA-547 and X.21 interfaces. It tests the HSS and the communication path up to the remote modem or NCTE.

3746-900 Lines

- For the LIC11:

  The wrap can be made at four points:

  1. **Inside the ARC**. This tests the internal circuitry of the LIC11, LCB, and selected ARC.
  2. **At the ARC connector**. This tests the whole communication path up to the selected ARC connector. You must physically replace the cable by a wrap plug.
  3. **Inside the local modem (local loop-back)**. This tests the communication path up to the local modem.
  4. **Inside the remote modem (remote loop-back)**. This tests the communication path up to the remote modem.

- For the LIC12:

  The wrap can be made at four points:

  1. **Inside the LIC12**. This tests the internal circuitry of the selected LIC12.
  2. **At the LIC12 connector**. This tests the whole communication path up to the selected LIC12 connector. You must physically replace the cable by an wrap plug.
  3. **Inside the local modem (local loop-back)**. This tests the communication path up to the local modem.
  4. **Inside the remote modem (remote loop-back)**. This tests the communication path up to the remote modem.

Wrap Test Requirements

Before you initialize a wrap test:

- NCP must be loaded and running.
- MOSS must be online (MOSS-ONLINE is displayed in the machine status area). The machine status area (MSA) is described in Appendix A.
- The CCU control program must be running (PROCESS and RUN are displayed in the machine status area).
- The scanner/CLP involved by the wrap test must be loaded. (To IML the scanner, refer to IMS function on page 197).
- The configuration data file must have been updated after any hardware configuration change, for example, a cable change. Refer to MOSS CDF function in “Configuration Data File (CDF)” on page 11.
- The line must have been defined at control program generation time.

  Ask the host operator to deactivate the line that you want to test.

Warning

1. When an automatic LIC/ARC wrap test is performed, all lines of the LIC must be deactivated.
2. Considering the load of a scanner, **a wrap test cannot be run on one line if the total weight of the other activated lines of this scanner is already 100%.**
   (For instance, on a low speed scanner, if only one line is activated for a 256 kbps transmission speed, the wrap test will not work on any other line of this scanner.) Refer to the *3745 Connection and Integration Guide* for the line weight calculation.
3. You cannot initialize the wrap test function on a line that is being traced (line trace function) or tested (line test function).
4. When using an autocall unit:
   - Under NCP, wrap tests are not supported on the dialing line.
   - Under EP, you must select the control leads wrap type.
5. Before you start a tailgate wrap test, get the wrap plug from the installation coordinator.
   For identification of LICs and wrap plugs, refer to “LICs and Wrap Test Plugs” on page 384.

3745/3746 Models L13, L14, and L15 - Wrap Test

LIC-Level Wrap (LIC 1 to LIC 4)

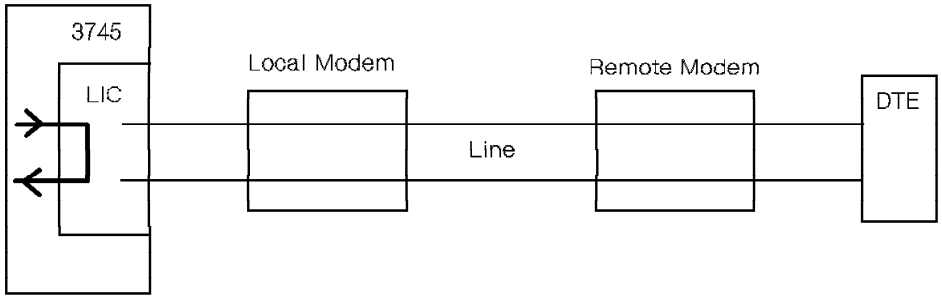


Figure 11. LIC-Level Wrap (LIC 1 to LIC 4)

This tests the LIC internally, whether or not a cable or LIC wrap plug is present. The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

LIC-Level Wrap (LIC 5 or LIC 6)

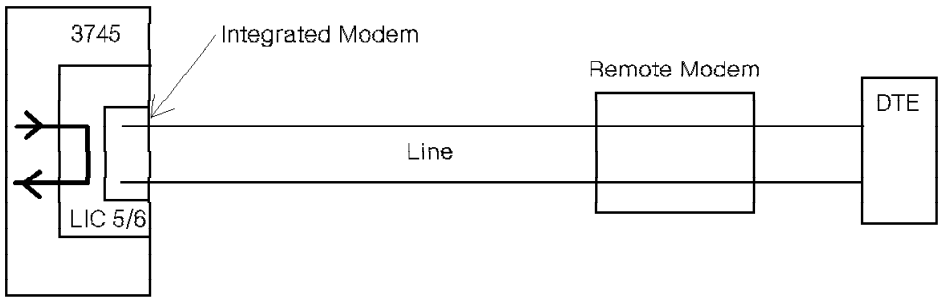


Figure 12. LIC-Level Wrap (LIC 5 or LIC 6)

This tests the LIC internally but does not test the integrated modem. The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

Tailgate Level Wrap (LIC 1 to LIC 4)

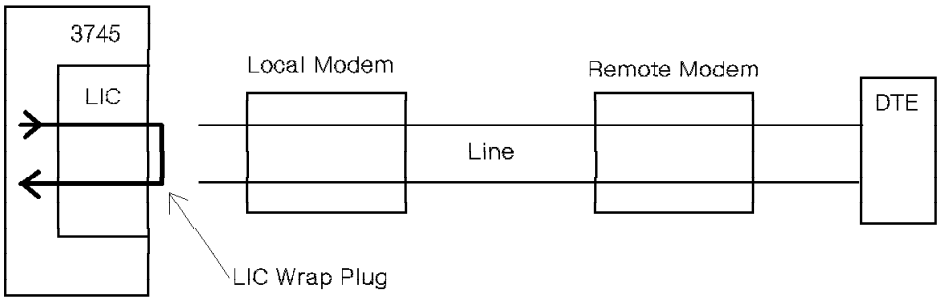


Figure 13. Tailgate Level Wrap (LIC 1 to LIC 4)

Wrap Plug Identification

Refer to “LICs and Wrap Test Plugs” on page 384.

A LIC wrap plug must be inserted into the position being tested in place of the cable to the DCE. The 3745 transmits a defined pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may use the LIC default patterns or create your own.

When an automatic LIC wrap test is performed, all lines on the selected LIC must be deactivated.

Tailgate Level Wrap (LIC 5 or LIC 6)

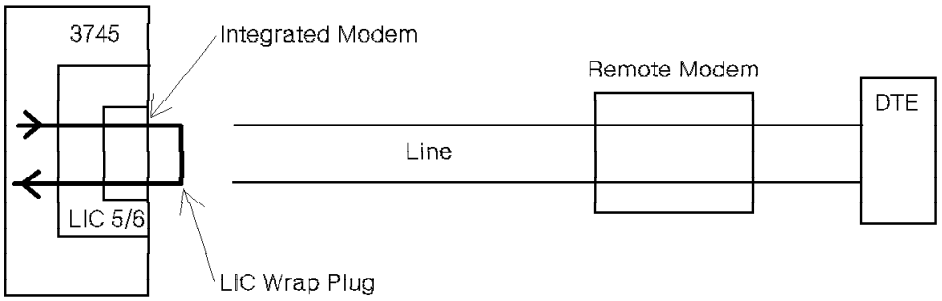


Figure 14. Tailgate Level Wrap (LIC 5 or LIC 6)

Wrap Plug Identification

Refer to “LICs and Wrap Test Plugs” on page 384.

A LIC wrap plug must be inserted either at the LIC or at the end of the cable. The 3745 transmits a defined pattern and verifies that the pattern is wrapped back correctly. The 3745 detects any discrepancy. You may use the LIC default patterns or create your own.

Note: It is invalid to run the tailgate wrap test with the 'CONTROL LEADS' option selected.

Warning

When unplugging the LIC cable to insert the wrap plug, unplug the LIC cable first from the telephone company end then from the LIC tailgate. When the wrap test is completed, plug the LIC cable at the LIC tailgate first.

NTT Cable-Level Wrap (LIC 1 to LIC 4)

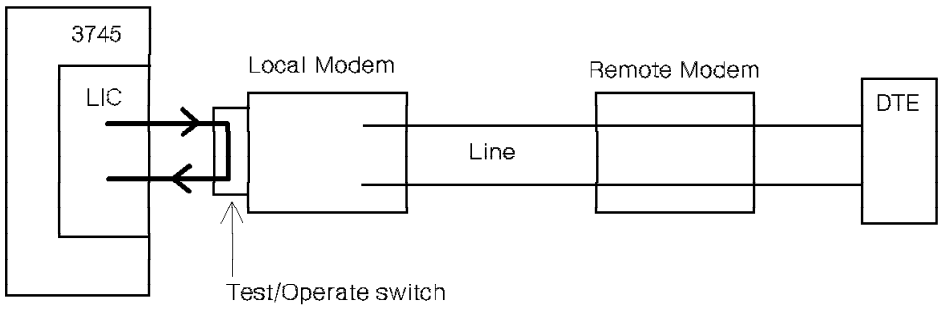


Figure 15. NTT Cable-Level Wrap (LIC 1 to LIC 4)

Using the NTT cable level wrap, the 3745 can verify the path up to, and including, the cable end. To perform the NTT cable level wrap, turn the Test/Operate switch to TEST. The switch is part of the cable.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined control lead pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may create your own control lead patterns according to the wrap plug capabilities.

Modem-Level Wrap (LIC 1 to LIC 4)

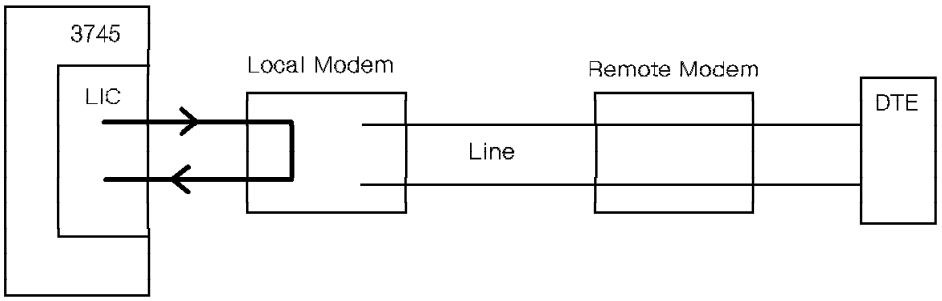


Figure 16. Local Modem Wrap Test (LIC 1 to LIC 4)

The modem-level wrap on the 3745 can verify the path after the cable end and within the modem.

Note: The remote modem wrap test is not applicable to a multipoint configuration.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined pattern on the control leads to the modem. The modem is controlled by these control leads and always reacts the same way to a given configuration of the control leads. The modem wraps the transmitted pattern back to the 3745 in order to determine the status of the modem (the modem may not react to invalid configurations of the transmitted control leads). The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

A modem-level control lead default pattern is provided only for the IBM 386x, 586x, and 786x modems. The manner in which other modems wrap the control leads cannot be determined. Therefore, no default control lead patterns are provided for modems other than the IBM 386x, 586x, and 786x modems. You must create your own control lead wrap patterns.

Note: Control lead default patterns are not valid for modem level wrap tests through an NTT cable.

Modem-Level Wrap (LIC 5 or LIC 6)

The modem level wrap on the 3745 can verify the path to the output of the integrated modem and the path after the cable end and within the remote modem.

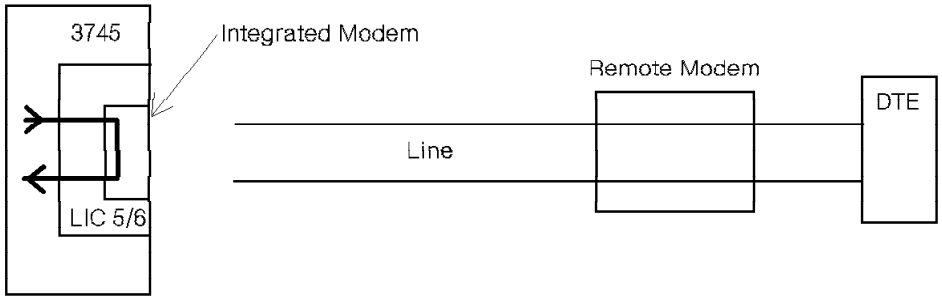


Figure 17. LIC-Internal Modem Wrap (LIC 5 or LIC 6)

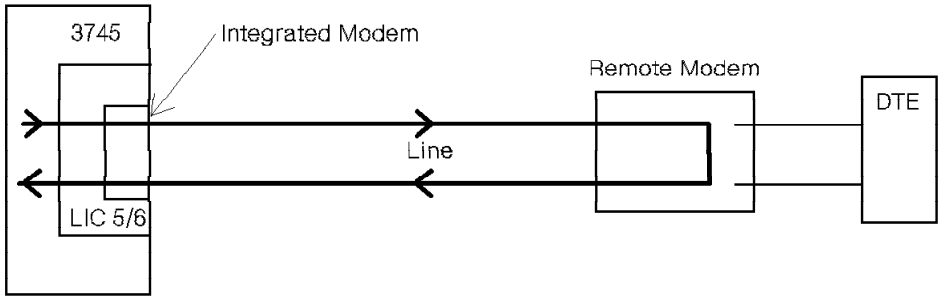


Figure 18. Remote Modem Wrap Test (LIC 5 or LIC 6)

Note: The remote modem wrap test is not applicable to a multipoint configuration.

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, BSC, or start-stop).

Control Lead Wrap Test

The 3745 transmits a defined pattern on the control leads to the modem. The modem is controlled by these control leads and always reacts the same way to a given configuration of the control leads. The modem wraps the transmitted pattern back to the 3745 in order to determine the status of the modem (the modem may not react to invalid configurations of the transmitted control leads). The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

In addition, during a control lead wrap test, a self-test is started and the result, pass or fail, is returned in the least significant digit position of the received test pattern (1 = pass, 0 = fail).

Internal-Level Wrap (HSS)

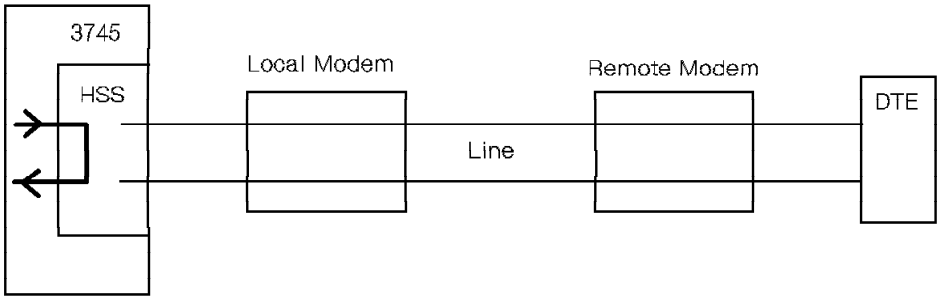


Figure 19. Internal-Level Wrap (HSS)

This tests the HSS internally, whether or not a cable or wrap plug is present. This test verifies the operation of the HSS with a V.35 or X.21 interface.

Data Wrap Test

The 3745 transmits defined data patterns and verifies that these patterns are wrapped back and received correctly. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own.

Control Lead Wrap Test

The 3745 transmits a defined pattern on the output control leads and verifies that the correct input control lead patterns are received. The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

Default control lead patterns are provided for X.21 and V.35 lines.

Tailgate Level Wrap (HSS)

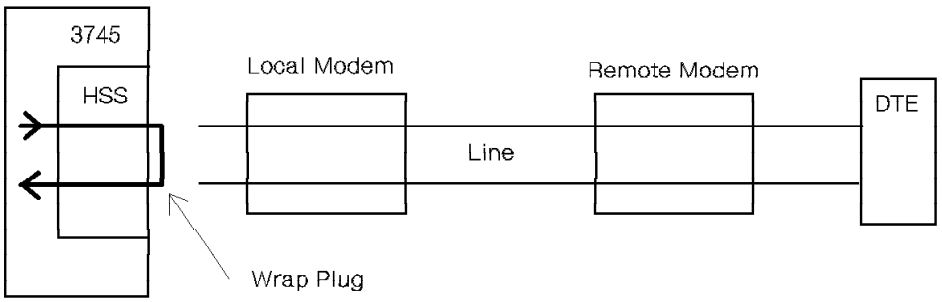


Figure 20. Tailgate Level Wrap (HSS)

Wrap Plug Identification

Refer to “LICs and Wrap Test Plugs” on page 384.

The tailgate level wrap test can be performed on an HSS with a V.35 or X.21 interface.

A wrap plug must be inserted into the position being tested in place of the cable to the DCE.

Data Wrap Test

The 3745 transmits a defined pattern on the transmit interface and verifies that the pattern is wrapped back and received correctly on the receive interface. The 3745 detects any discrepancy. You may use the default patterns or create your own.

Control Lead Wrap Test

The 3745 transmits a defined pattern on the output control leads and verifies that the correct input control lead patterns are received. The control leads are continuously tested when the 3745 is in normal operation mode, or when a data wrap test is being performed.

Default control lead patterns are provided for X.21 and V.35 lines.

Modem-Level Wrap (HSS)

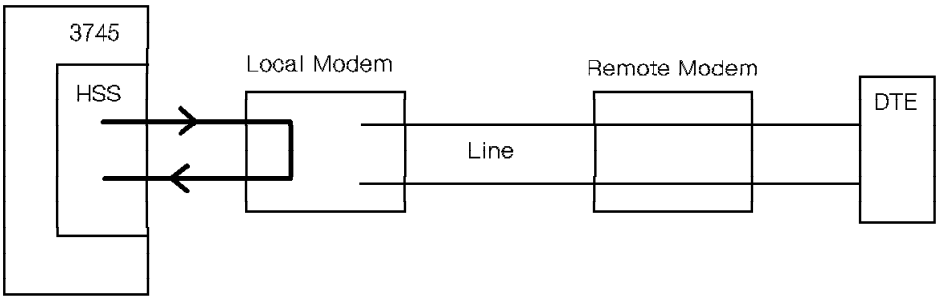


Figure 21. Local Modem Wrap Test (HSS)

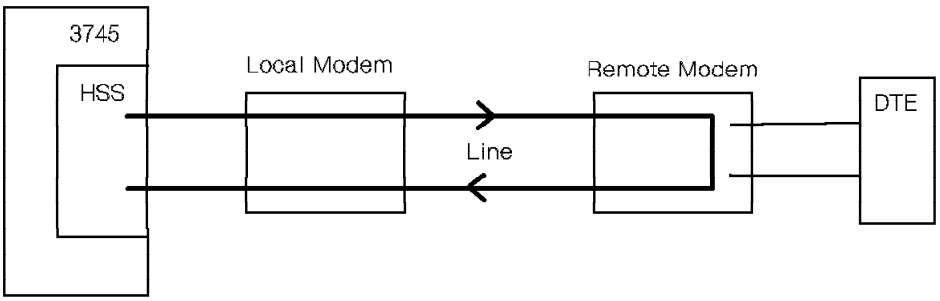


Figure 22. Remote Modem Wrap Test (HSS)

The modem-level wrap on the 3745 can verify the communication path from inside the HSS through the cable and within the local or remote network channel terminal equipment (NCTE).

Data Wrap Test

The 3745 transmits defined data patterns on the 'transmit data' line and verifies that these patterns are wrapped back and received correctly on the 'receive data' line. The 3745 detects any discrepancy. The test can be run any number of times consecutively. You may use the default data wrap patterns or create your own. Default data wrap patterns are provided according to line protocol (SDLC, HDLC data frame level).

There are two types of modem-level wraps possible on the HPTSS. One type is for the NCTE/EIA-547 or X.21 interfaces and the second is for the V.35 interface.

Data Wrap Test on NCTE/EIA-547 or X.21 interface: The data wrap test is controlled by the 3745 by supplying the modem with specific data patterns that set them into either local or remote loop-back. Once the 3745 verifies the loop-back state, the data wrap is performed. These wraps are selected on the wrap test initialization screen by WRAP LEVEL 1 or 5.

Data Wrap Test on V.35 Modems: It is possible to test a line up to the local or remote V.35 modem by using one of the following procedures:

- Local V.35 modem (Figure 21 on page 364)
  1. Put the local V.35 modem into **loop test 3** mode by setting the appropriate switch on the modem.
  2. On the wrap test initialization screen (see page 373) select:
     - WRAP TYPE 1 (data)
     - WRAP LEVEL 4 (tailgate).
- Remote V.35 modem (see Figure 22 on page 364)
  1. Put the remote V.35 modem into **loop test 4** mode by setting the appropriate switch on the modem.
  2. On the wrap test initialization screen (see page 373) select:
     - WRAP TYPE 1 (data)
     - WRAP LEVEL 4 (tailgate).

Control Lead Wrap Test

The control leads option is not valid when selecting the modem-level wrap test on an HPTSS line.

3746 Model 900 Wrap Test

LIC11 Wrap Test

Internal Level Wrap

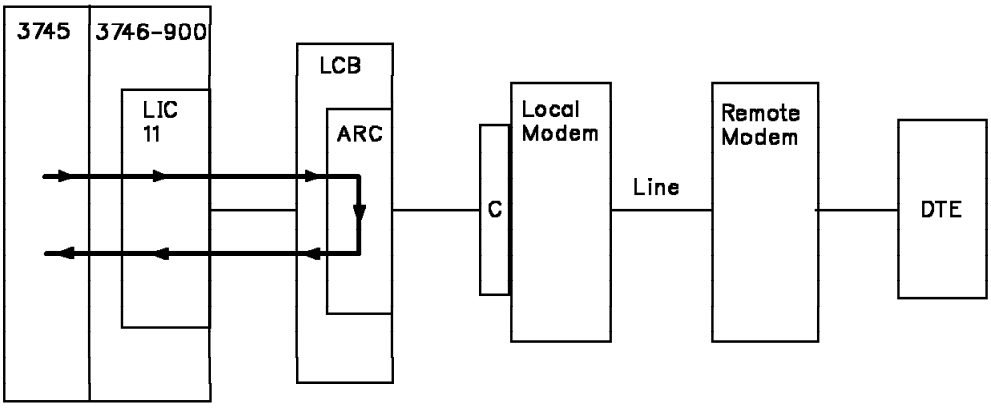


Figure 23. LIC11 Internal Test

This tests the communication path up to and including the addressed ARC. No manual intervention is required on the attachment before runing the test.

NTT-Level Cable Wrap

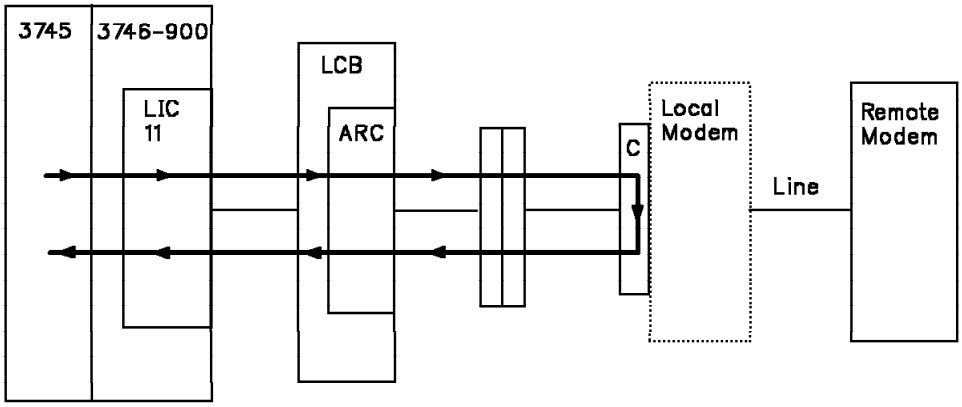


Figure 24. LIC11 NTT-Level Cable Wrap

This tests the communication path up to the end of the cable connecting the local modem. It requires either a 3745 NTT or NTT-like cable with the modem end connector equipped with the TEST switch. This cable is to be connected to the ARC.
The ARC itself does not provide an NTT-like connector at the modem end.

The TEST switch, on the modem end connector, should be turned On before starting the test.

LIC11/ARC Wrap Plug

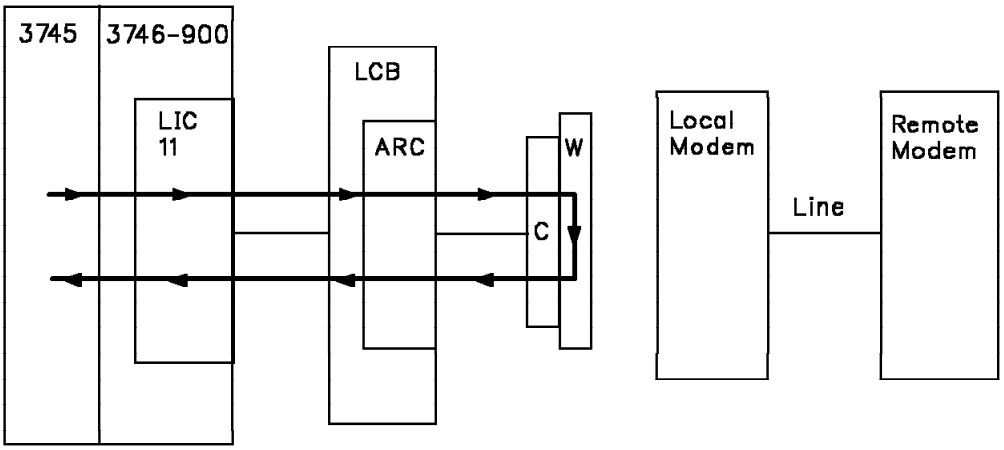


Figure 25. LIC11/ARC Wrap Plug

This tests the communication path up to the end connector of the ARC or the modem end of the 3745 cable (if existing 3745 cable is used between the ARC and the local modem).

Before runing the test, the local modem should be unplugged and replaced by the corresponding wrap plug.

Wrap Plug Identification

Refer to Table 52 on page 388.

Local Modem Level Wrap

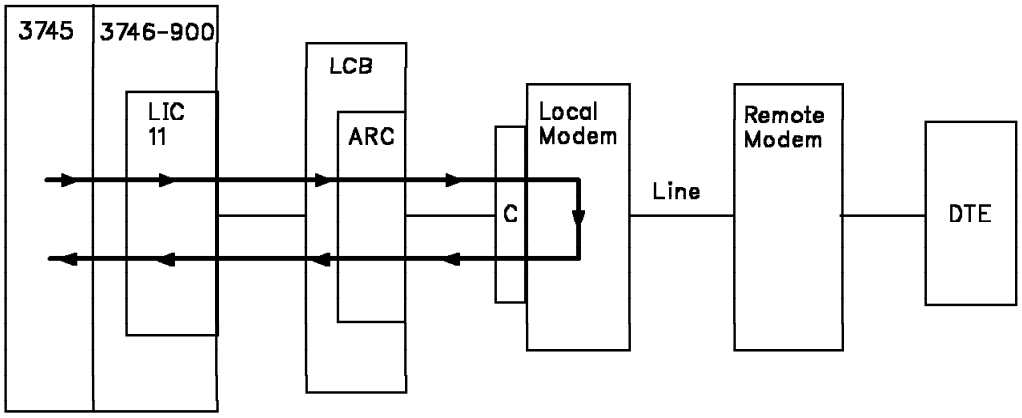


Figure 26. LIC11 Local Modem Level Wrap

This tests the communication path up to the inside of the local modem (local loopback). This option only applies to *data* wrap type.

For V.35 modem, the loop test 3 mode should be set via the appropriate switch on the modem.

Remote Modem Level Wrap

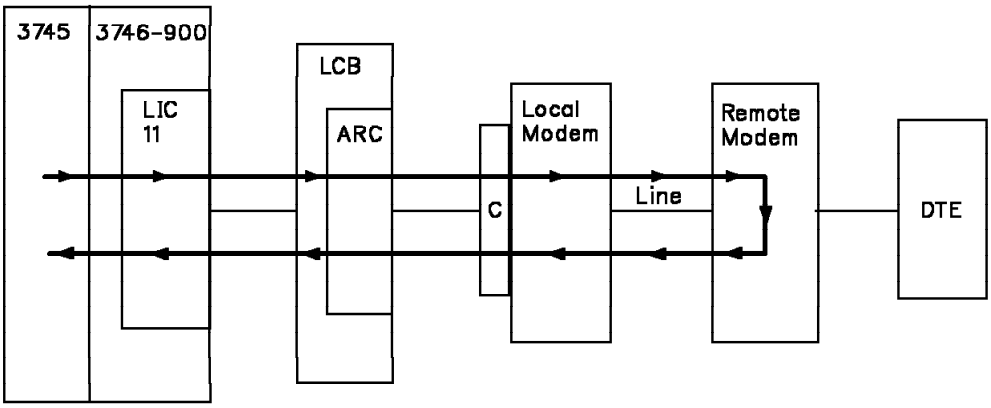


Figure 27. LIC11 Remote Modem Level Wrap

This tests the communication path up to the inside of the remote modem (remote loopback). This option only applies to *data* wrap type.

For V.35 modem, the loop test 4 mode should be set via the appropriate switch on the modem.

Note: This option should only be selected on point-to-point lines, otherwise it may give unpredictable results and/or cause unexpected operations on the terminals connected to a multipoint line.

LIC12 Wrap Test

Internal Level Wrap

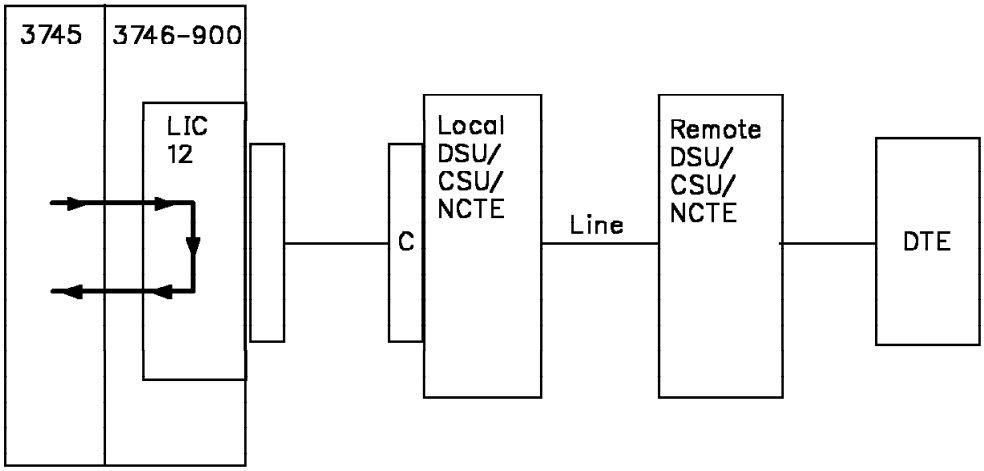


Figure 28. LIC12 Internal Wrap

This tests the communication path up to and including the addressed LIC. No manual intervention is required on the attachment before runing the test.

LIC12 Wrap Plug

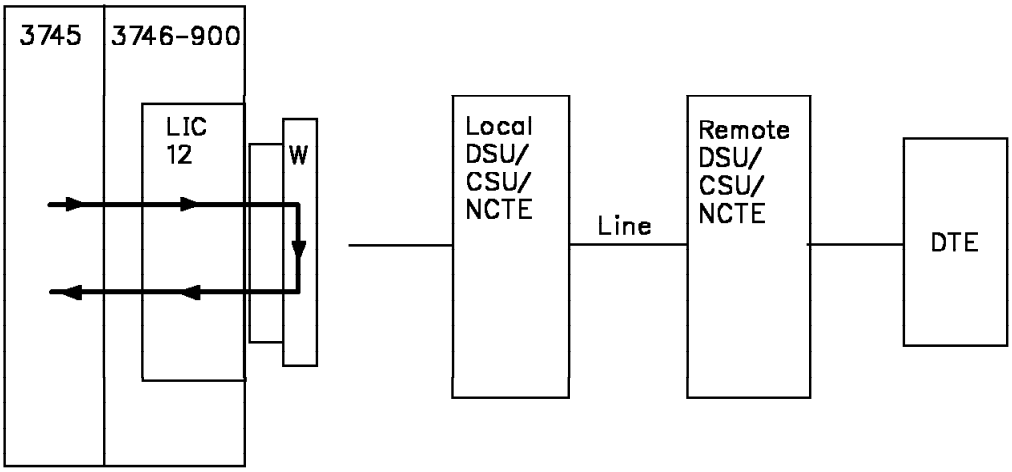


Figure 29. LIC12 Wrap Plug

This tests the communication path up to the LIC12 connector.

Use the wrap plug:

- PN 58X9349 for LIC12 V.35 cable
- PN 58X9354 for LIC12 X.21 cable.

Local DSU/CSU or NCTE Level Wrap

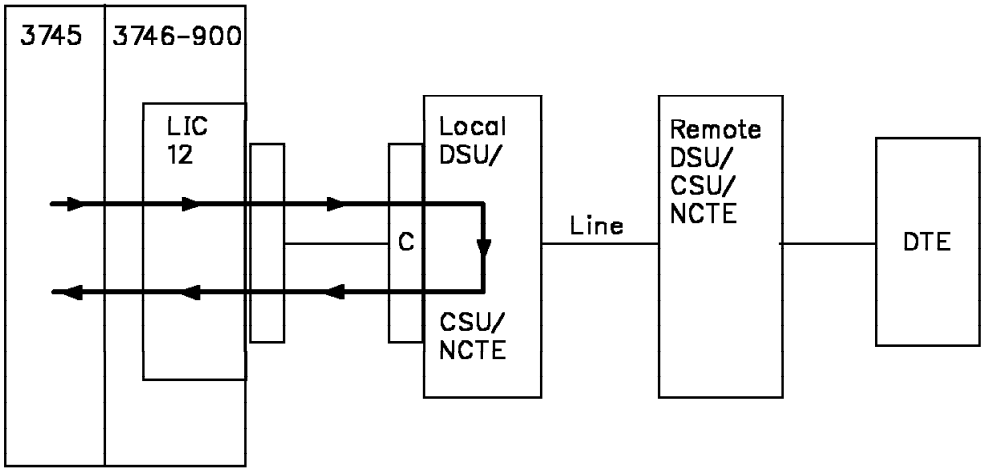


Figure 30. LIC12 Local DSU/CSU/NCTE Level Wrap

This tests the communication path up to the inside of the local DSU/CSU or NCTE (local loopback).

For a V.35 DSU/CSU, the loop test 3 mode should be set via the appropriate switch on the DSU/CSU.

For X.21 NTCE, specific data patterns will be sent by the communication line adapter to set the local loopback mode in the NCTE.

LIC12 Remote DSU/CSU or NCTE Level Wrap

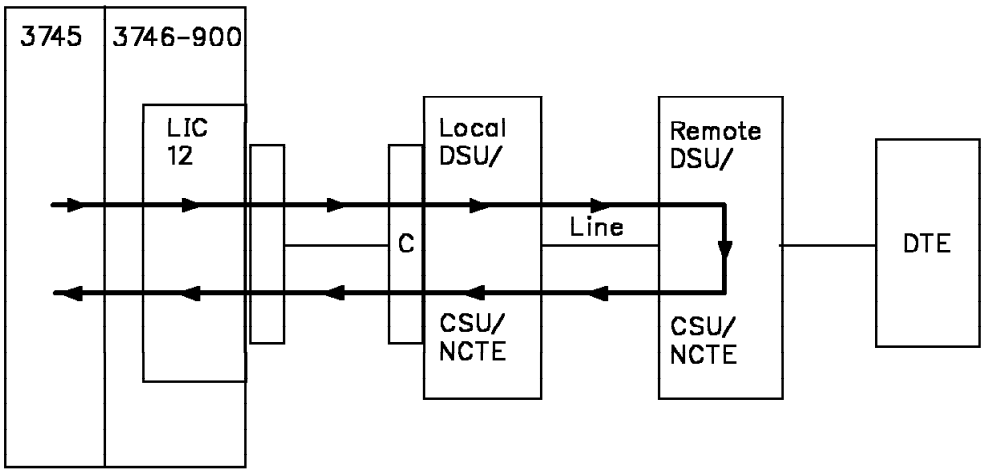


Figure 31. LIC12 Remote DSU/CSU/NCTE Level Wrap

This tests the communication path up to the inside of the remote DSU/CSU or NCTE (remote loopback). This option only applies to *data* wrap type.

For a V.35 DSU/CSU, the loop test 4 mode should be set via the appropriate switch on the DSU/CSU.

For X.21 NTCE, specific data patterns will be sent by the communication line adapter to set the remote loopback mode in the NCTE.

Starting Wrap Tests

W T T SEND

The Wrap Test Initial Selection screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
              WRAP TEST INITIAL SELECTION

- SELECT THE COMMUNICATION SUBSYSTEM (1, 2, 3) ==>

    1 = TSS

    2 = HPTSS

    3 = 3746-900



THEN PRESS ENTR
===>

F1:END  F2:MENU2
```

If you select:

- **1** = TSS: Go to “Wrap Test Intial Selection for TSS” on page 372
- **2** = HPTSS: Go to “Wrap Test Initial Selection for HPTSS” on page 374
- **3** = 3746-900: Go to “Wrap Test Initial Selection for 3746-900” on page 375

Wrap Test Intial Selection for TSS

W T T SEND . 1 SEND

The Wrap Test Initial Selection for TSS screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
              WRAP TEST INITIAL SELECTION FOR TSS

- SELECT ONE OPTION (1,2) ==>

    1 = AUTOMATIC WRAP TEST ON LIC UNIT

    2 = WRAP TEST AT ANY LEVEL




THEN PRESS SEND
===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen you may:

- Enter 1 to display the Automatic Wrap Test on LIC Unit screen.
- Enter 2 to display the Wrap Test Initialization screen. From this screen, you may start a test of a TSS line at the various possible wrap levels.

WTT Options	Go to page
Automatic Wrap Test on LIC	373
Non-Automatic Wrap Test: • Local Modem • NTT Cable • LIC • Tailgate	373

Automatic Wrap Test on LIC

1. Have all the lines of the LIC deactivated from the host.
2. Enter the address of the line you want to test.
3. Press SEND to start the wrap test.
4. After about 30 seconds, the wrap test ends, and one of the following messages is displayed:

   WRAP TEST COMPLETED, THE LIC IS FAULTY
   WRAP TEST COMPLETED, THE LIC IS OK

Non-Automatic Wrap Tests

Have the line you want to test deactivated from the host before starting.

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                 WRAP TEST INITIALIZATION FOR TSS

- ENTER LINE ADDRESS (0000-0895) ==> A

- ENTER WRAP TYPE (1 or 2) ==> B
    1 = DATA
    2 = CONTROL LEADS

- ENTER WRAP LEVEL (1 TO 4) ==>  C
    1 = LOCAL MODEM               4 = TAILGATE
    2 = NTT CABLE
    3 = LIC (DATA WRAP ONLY)
          LINE(S) TO BE TESTED MUST BE DISABLED/DEACTIVATED

===>
F1:END  F2:MENU2  F3:ALARM     F4:INITIAL SELECTION
```

To initialize the wrap test:

1. Deactivate, from the host, the line that you want to test.
2. Enter the line address you want to test at **A**.
3. Select the required option at **B**.

   Note: The control leads option is not valid when requesting wrap levels other than **tailgate** for a TSS line connected to a LIC type 3.
4. Select a wrap level at **C**, options 1 to 4.
5. Press SEND to display the Wrap Test Pattern Selection screen.

From the above screen:

If you select on line **B**:

- **Option 1**: Go to page 376.
- **Option 2**: Go to page 377.

Wrap Test Initial Selection for HPTSS

Have the line you want to test deactivated from the host before starting.

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                WRAP TEST INITIALIZATION FOR HPTSS

- ENTER LINE ADDRESS (1024-1039) ==> A

- ENTER WRAP TYPE (1 or 2) ==> B
    1 = DATA
    2 = CONTROL LEADS

- ENTER WRAP LEVEL (1 TO 4) ==>  C
    1 = LOCAL MODEM (DATA WRAP ONLY)    4 = TAILGATE
    2 = REMOTE MODEM (DATA WRAP ONLY)
    3 = INTERNAL
          LINE(S) TO BE TESTED MUST BE DISABLED/DEACTIVATED

===>
F1:END  F2:MENU2                  F4:INITIAL SELECTION
```

To initialize the wrap test:

1. Deactivate, from the host, the line that you want to test.
2. Enter the line address you want to test at **A**.
3. Select the required option at **B**.

   Note: The control leads option is not valid when requesting the local and remote modem wrap levels for an HPTSS line.
4. Select a wrap level at **C**, options 1 to 4.

   Note: For HPTSS, the local and remote modem options are valid for lines operating with the NCTE/EIA-547 and X.21 interfaces only in data mode.
5. Press SEND to display the Wrap Test Pattern Selection screen.

From the above screen:

If you select on line **B**:

- **Option 1**: Go to page 377.
- **Option 2**: Go to page 377.

Wrap Test Initial Selection for 3746-900

Have the line you want to test deactivated from the host before starting.

The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                WRAP TEST INITIALIZATION FOR 3746-900

- ENTER LINE ADDRESS (2112-3135) ==> A      CCU (A, B) ==> D

- ENTER WRAP TYPE (1 or 2) ==> B
    1 = DATA
    2 = CONTROL LEADS

- ENTER WRAP LEVEL (1 TO 5) ==>  C
    1 = LOCAL MODEM (DATA WRAP ONLY)    4 = NTT CABLE (V.24 DCE ONLY)
    2 = REMOTE MODEM (DATA WRAP ONLY)   5 = WRAP PLUG
    3 = INTERNAL
          LINE(S) TO BE TESTED MUST BE DISABLED/DEACTIVATED

===>
F1:END  F2:MENU2                  F4:INITIAL SELECTION
```

To initialize the wrap test:

1. Deactivate, from the host, the line that you want to test.
2. Enter the line address you want to test at **A**.
3. Enter the CCU where the line parameters are defined **D**.
4. Select the required option at **B**.

   Note: The control leads option is not valid when requesting the local and remote modem wrap levels on LIC12.
5. Select a wrap level at **C**, options 1 to 5.
6. Press SEND to display the Wrap Test Pattern Selection screen.

From the above screen:

If you select on line **B**:

- **Option 1**: Go to page 377.
- **Option 2**: Go to page 377.

Data Wrap Test Pattern Selection for TSS

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                 WRAP PATTERN SELECTION

LINE ADDRESS: 2        TYPE: DATA        LEVEL: LIC
LCD C: BSC EBCDIC     CNTRL PGM: NCP      LIC TYPE: 3

- TEST IN TRANSPARENT MODE (Y,N) ==>  B
- EIB OR ITB MODE (Y,N)          ==>  C

- SELECT ONE OPTION (1 TO 3)     ==>  D
    1 = USE DEFAULT PATTERN
    2 = DISPLAY DEFAULT PATTERN
    3 = CREATE PERSONAL PATTERN

===>

F1:END  F2:MENU2  F3:ALARM       F5:CANCEL
```

From the above screen:

If you select on line **D** :

- **Option 1**: Go to “Running Wrap Test” on page 378.
- **Option 2**: Go to “Default Patterns” on page 407.
- **Option 3**: Go to “Personal Patterns” on page 408.

LCD has been defined at control program generation. This code means:

3 = autocall C = BSC EBCDIC
4 = start-stop 9/7 D = BSC ASCII
6 = start-stop 10/8 E = BSC ASCII TRSP (transparent - EP only)
9 = SDLC

B According to the LCD value, one of the following may be displayed:

- TEST IN TRANSPARENT MODE (Y,N) ==> To choose between transparent mode and non-transparent mode, when both modes are possible (in transparent mode, control characters are considered as data).
- TRANSPARENT MODE IS NOT SUPPORTED if you defined the line in emulation mode or in NCP-ASCII.
- ONLY TRANSPARENT MODE IS SUPPORTED if you defined the line in EP-ASCII (LCD=E).

C In BSC only, EIB or ITB MODE (Y,N) ==> is displayed.

In NCP, if you enter Y, ITBs will be taken as control characters and not as data in your own pattern (there is no ITB in default patterns).

In EP, if the line has been defined in ITB mode at generation, you must enter Y, otherwise enter N.

Wrap Test Pattern Selection

If there is a default pattern available, the following screen is displayed after you have initialized a control lead wrap test:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                 WRAP PATTERN SELECTION

LINE ADDRESS: 0           TYPE: CNTRL/DATA     LEVEL: MODEM
LCD 9: SDLC               CNTRL PGM: NCP         LIC TYPE: 3


                                    E

- SELECT ONE OPTION (1 TO 3)     ==>    D
  1 = USE DEFAULT PATTERN
  2 = DISPLAY DEFAULT PATTERN
  3 = CREATE PERSONAL PATTERN

===>

F1:END  F2:MENU2  F3:ALARM      F5:CANCEL
```

From the above screen:

- If you select, on line **D** :
  - **Option 1**: Go to “Running Wrap Test” on page 378.
  - **Option 2**: Go to “Default Patterns” on page 407.
  - **Option 3**: Go to “Personal Patterns” on page 408.
- Press SEND.

Specific modem or cable information is displayed on line **E** .

For LCD meaning, see page 376.

If there is no default pattern for the line that you selected, you have to create your own. The following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                 WRAP PATTERN SELECTION

LINE ADDRESS: 0           TYPE: CNTRL       LEVEL: LOCAL MODEM
LCD 9 : SDLC              CNTRL PGM: NCP      LIC TYPE: 3

NO DEFAULT PATTERN

- PRESS SEND TO CREATE YOUR PERSONAL PATTERN




===>

F1:END  F2:MENU2  F3:ALARM      F5:CANCEL
```

From the above screen:

When you press SEND, you are prompted to create your personal pattern. Go to “Personal Patterns” on page 408.

Running Wrap Test

After you have selected to use the default pattern or after you have created your own pattern, the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP TEST START

LINE ADDRESS: 0           TYPE: CNTRL      LEVEL : LOCAL MODEM
LCD 9 : SDLC              CNTRL PGM: NCP       LIC TYPE: 3

- ENTER NUMBER OF WRAPS (1-255) OR P ==>
     P = PERMANENT WRAP

- SELECT APPROPRIATE TEST ON THE MODEM
THEN PRESS SEND TO START THE WRAP



===>

F1:END  F2:MENU2  F3:ALARM      F5:CANCEL
```

From the above screen:

Specify the number of wraps, then, if the wrap level **LEVEL:** is:

- LIC: Press SEND.
- LIC tailgate or HPTSS tailgate: Plug in the wrap plug or cable at the tailgate. Press SEND.
- NTT Cable: Set the Test switch on the cable to TEST. Press SEND.
- Modem: On IBM 386x, 586x, and 786x modems, switch to the local loop-back test position (loop 3) or to the remote loop-back test position (loop 2).
  On other modems, switch to the appropriate test position. Press SEND to start the wrap.

Note: In order to test a LIC type 3, it is necessary to reverse the LIC 3 wrap cable after the first test pass, then run the test again.

Wrap Test in Progress

Once you have entered the number of wraps and pressed SEND, (from the preceding WRAP TEST START screen), the following screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                 WRAP TEST IN PROGRESS

LINE ADDRESS: 0           TYPE: CNTRL    LEVEL: LOCAL MODEM
LCD 9 : SDLC              CNTRL PGM: NCP      LIC TYPE: 3


- PRESS BREAK IF YOU WANT TO STOP WRAP









===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

To stop the wrap before the end, press BREAK. This is the only way you can stop the wrap if you selected P = PERMANENT WRAP on the "WRAP TEST START" screen.

If you press BREAK to get control of the operator console, the following two F keys are displayed:

- F4 to return to previous state and continue the wrap test
- F5 to stop the wrap test and display the Wrap Test Result screen.

Wrap Test Results

When the last wrap is completed or after you have stopped the wrap test, the following result screen is displayed:

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
                    WRAP TEST RESULTS

LINE ADDRESS: 0           TYPE: CNTRL    LEVEL: MODEM
LCD 9 : SDLC              CNTRL PGM: NCP      LIC TYPE: 3

NBR OF WRAPS        NBR OF WRAPS     NBR OF WRAPS
TRANSMITTED: 010    RECEIVED: 010   INCORRECT: 010

                      F
                      G

- PRESS SEND TO DISPLAY FIRST INCORRECT PATTERN  H

===> WRAP TEST COMPLETED

F1:END  F2:MENU2  F3:ALARM F4:TEST INITIALIZATION
```

From the above screen:

- Press SEND to display the first incorrect pattern, if any. Go to page 382.
- Press F4 to initialize another wrap test on any line.

Following fields are for LICs 1 to 6:

F When the scanner detects an error, the following fields are displayed to give specific information on the error:

```
TRANSMIT:  SCF=    LCS=     SES=
RECEIVE:   SCF=    LCS=     SES=
```

SCF, LCS, and SES codes are explained on page 381.

G SCANNER AND/OR LINE TIME OUT is displayed when, for example:

- The wrap facility is not operational (Test/Operate switch not on TEST).
- The scanner does not operate normally.

H Is displayed only when there is an incorrect pattern.

Wrap Test End

The Wrap Test End screen is displayed when:

- The wrap test cannot be initialized. The reason for the abnormal termination is given in a message.
- You have canceled the test by pressing F5.

You may press F4 to initialize another wrap test on any line.

Meaning of SCF, LCS, and SES Codes

SCF	LCS	SES	Meaning
4x	00	00	Buffer request (end of message off)
0y	C0	00	AIO error
0y	C2	00	Adapter interface check
0y	C4	00	Communication scanner error
0y	C6	00	Front-end scanner failing to answer
0y	C8	00	Front-end scanner internal error
0y	CA	00	LIC driver check, ICC internal error, or MUX failure
0y	CC	00	Transient error overflow
0y	CE	00	LIC or ICC interface error or DSR drop for LIC 5 or 6. ALso, for F5 command, means internal clock failure or LIC 5 or 6 clock failure.
0y	CF	00	Internal clock failure, or clock failure on LIC 5 or 6 (TSS only)
0y	D0	00	No interrupt from front end scanner
0y	D2	00	Command rejected
0y	D6	00	Front-end scanner error reporting path check
0y	D8	00	Invalid level 2 interrupt
0y	DC	00	DMA error (HPTSS)
0y	DE	00	Line not accessible
wx	E2	00	CTS dropped
wx	E6	00	RLSD failed to drop
wx	EE	00	DSR dropped. Also, for F5 command, means external clock failure.
wx	EF	00	External clock failed (Not LIC 5/6 - TSS only)
wx	F2	00	CTS failed to come up
wx	F4	00	DSR failed to come up
wx	F6	00	No cable or wrong cable installed
wx	F8	00	DSR or CTS failed to drop
wx	FA	00	X.21 disconnect DCE clear received (TSS). X.21 DCE not ready or modem wrap failed (HPTSS).
wx	FB	00	X.21 disconnect DCE clear received + time out during clear
wx	80	00	Time out
wx	86	00	X.21 time out on proceed to select
wx	87	00	X.21 time out on proceed to select + time out during clear
wx	88	00	DLE-EOT disconnect sequence
wx	8A	00	Lost data
wx	9A	00	X.21 CPS error
wx	9B	00	X.21 CPS error + time out during clear
wx	*	80	Modem retrain
wx	*	48	Bad pad (BSC)
wx	*	40	Format exception (BSC)
8x	*	40	Abort-line idle (SDLC)
8x	*	00	Abort (SDLC)
wx	*	10	CRC check (SDLC or BSC)
wx	*	08	Flag off boundary (SDLC)
wx	*	02	DLE error (BSC)
wx	*	01	Length check (BSC)
wx	*	01	Early Flag (SDLC)
wx	*	20	Transient error
wx	*	00	See wx below

Legend:

```
w = 0: halt or abort          x = 4: data stored          y = 0: if NCP or character mode
    1: service request            5: end of message       y = 1: if EP and normal mode
    2: overrun or underrun        6: data transmitted
    3: modem check                7: receive sequence     * = the displayed value is not
                                                              significant
```

Incorrect Data Wrap Pattern

A received pattern is considered as incorrect when it does not match the expected pattern. For the default pattern, the transmit and expected patterns are identical. When a pattern is not received:

- Under EP it is considered as incorrect.
- Under NCP it is considered as correct.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 0       DATA WRAP: INCORRECT PATTERN

EXPD: 33 33 33 33 33 33
RCDV: 22 33 44 55 66 33 44 44









===>

F1:END  F2:MENU2  F3:ALARM F4:TEST RESULT F7:BWD  F8:FWD
```

EXPD: Expected pattern.
RCDV: Received pattern.

The cursor shows the first error. The screen that is displayed does not necessarily show the beginning of the pattern but the portion that contains the difference.

To display all the expected and received data, press F8: FWD or F7: BWD.

If there is an incorrect pattern, make sure that it does not result from:

- An incorrect action when setting up the cable or modem for the wrap test
- A personal pattern incorrectly entered
- The selection of an inappropriate default pattern.

If it *does* result from one of these actions, restart the wrap test. If it *does not,* contact the service representative responsible for the defective equipment.

Note: When a solid error is detected, a BER (Type 11, ID A2, or B1) is recorded in the BER file, described in Event Log Display (ELD).

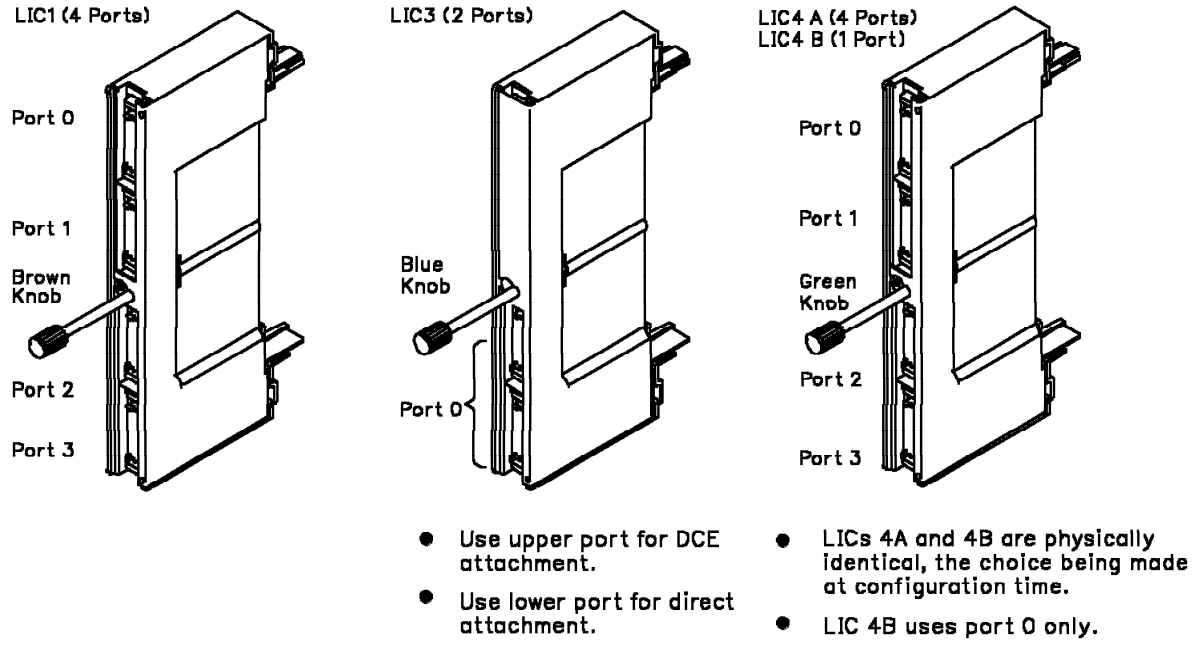
Incorrect Control Lead Pattern

```
------------------------------------------------------------------ mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 0     CONTROL LEAD WRAP: INCORRECT PATTERN

TRANSMITTED PATTERN: 00110000 00010000
   EXPECTED PATTERN: 00010000 00100000
   RECEIVED PATTERN: 00000000 00000000









===>

F1:END  F2:MENU2  F3:ALARM F4:TEST RESULT
```

The control lead pattern bit definitions are listed under “Control Lead Bit Definition” on page 413.

LICs and Wrap Test Plugs

Identify the LIC on 3745 and 3746 Models L13, L14, and L15



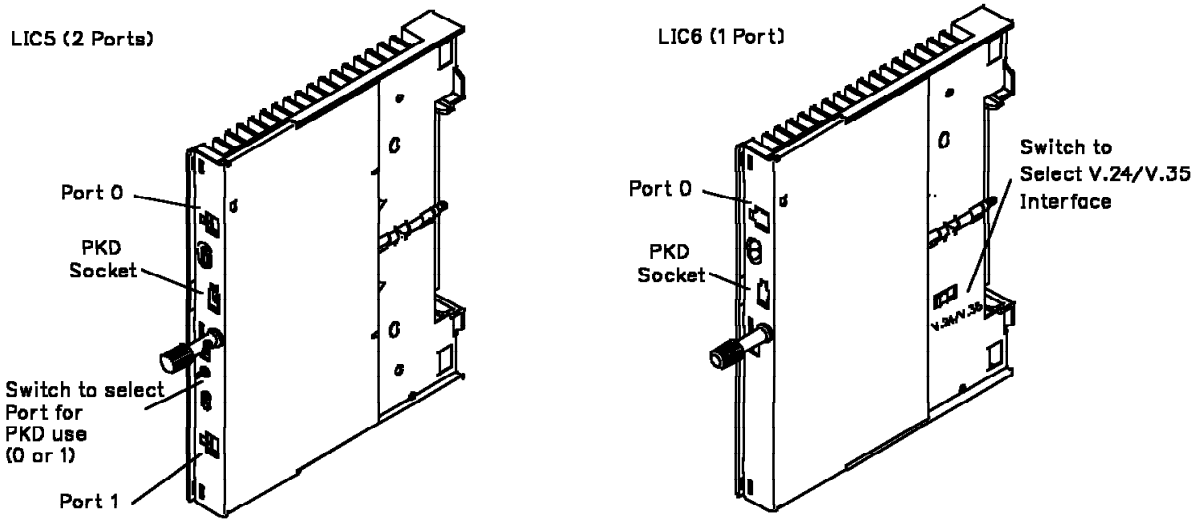


Figure 32. LIC Types 1, 3, 4A, 4B, 5, and 6

Identify the LIC on 3746 Model 900

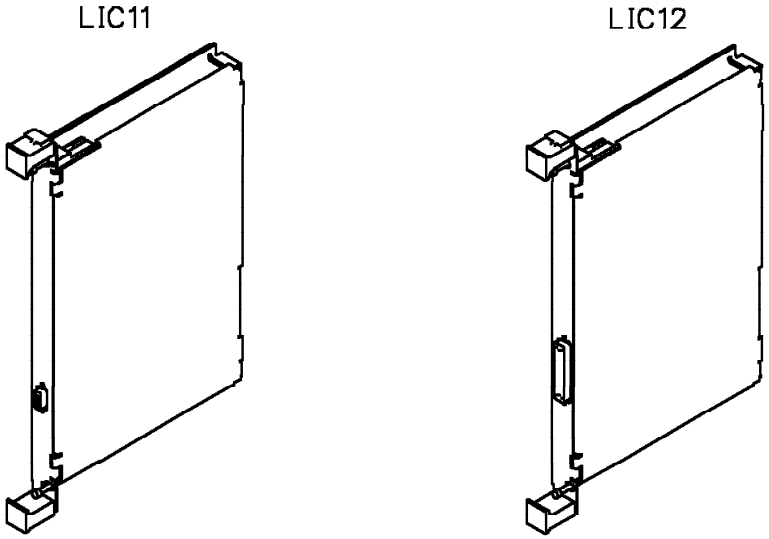


Figure 33. LIC Types 11 and 12

Identify the Wrap Plug

Wrap Plug Part Numbers

In addition to wrap plug pictures, part numbers are also provided to help wrap plug identification. An engineering change may be applied to a wrap plug and the part number may be changed. If you are in doubt, please contact your service representative.

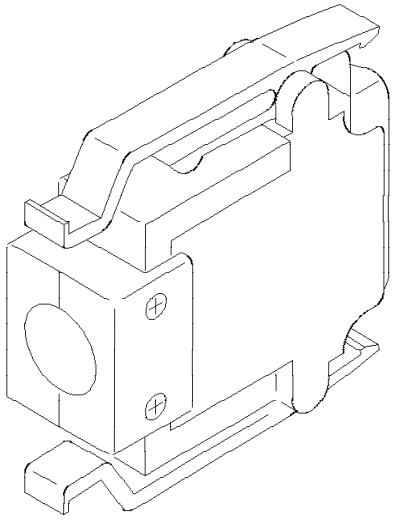


Figure 34. LIC Type 1 and 4 Wrap Plug (PN 65X8927)

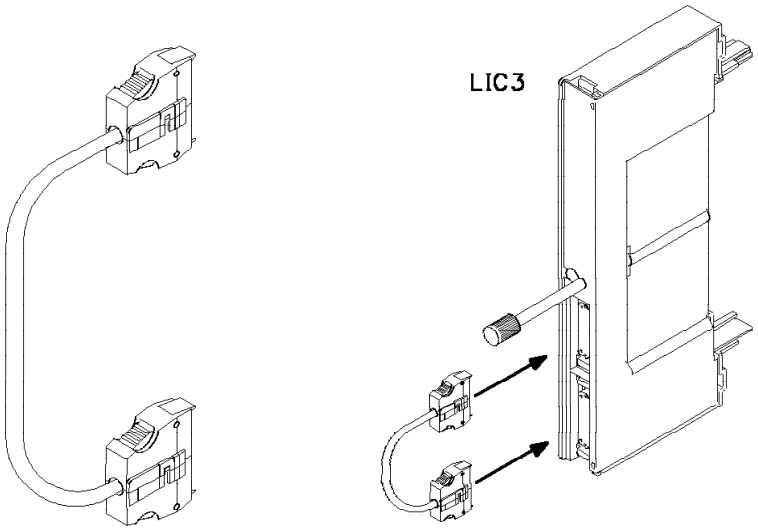


Figure 35. LIC Type 3 Wrap Cable (PN 65X8928)

Note: In order to test a **LIC3** card, it is necessary to reverse the LIC3 wrap cable after the first test pass, then run the test again.

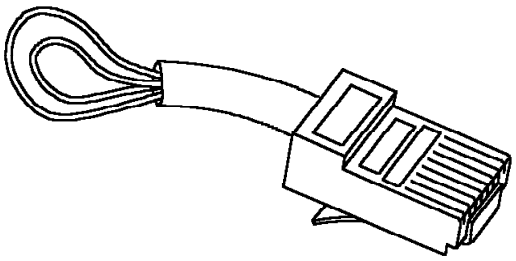


Figure 36. LIC Type 5 and 6 Tail Gate Wrap Plug (PN 11F4815)

Note: In addition to the tail gate wrap plug, a wrap block is also shipped with the machine. This wrap block may be plugged at the end of the cable (at the customer wall frame side) to test the line up to the customer wall frame. The part number of this wrap block is obviously country-dependent.

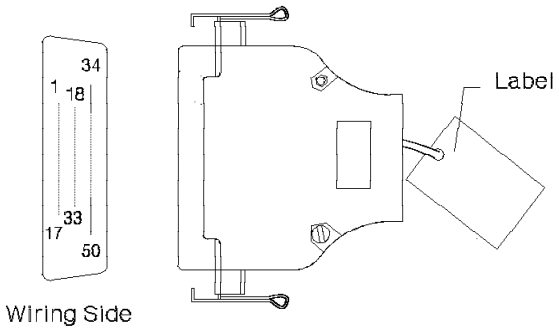


Figure 37. HSS Line/LIC12 Line Wrap Test Plug

HSS/LIC12 wrap plug for V.35 lines, PN 58X9349
HSS/LIC12 wrap plug for X.21 lines, PN 58X9354

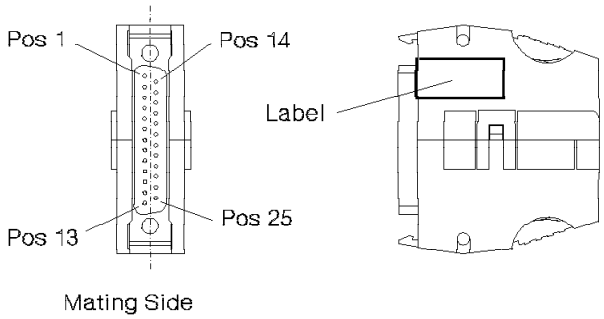


Figure 38. Console Wrap Plug

Wrap plug for the 31xx console, PN 6398697
Wrap plug for the 3727 console, PN 2667737
Wrap plug for the PC/PS2* consoles, PN 26F0320

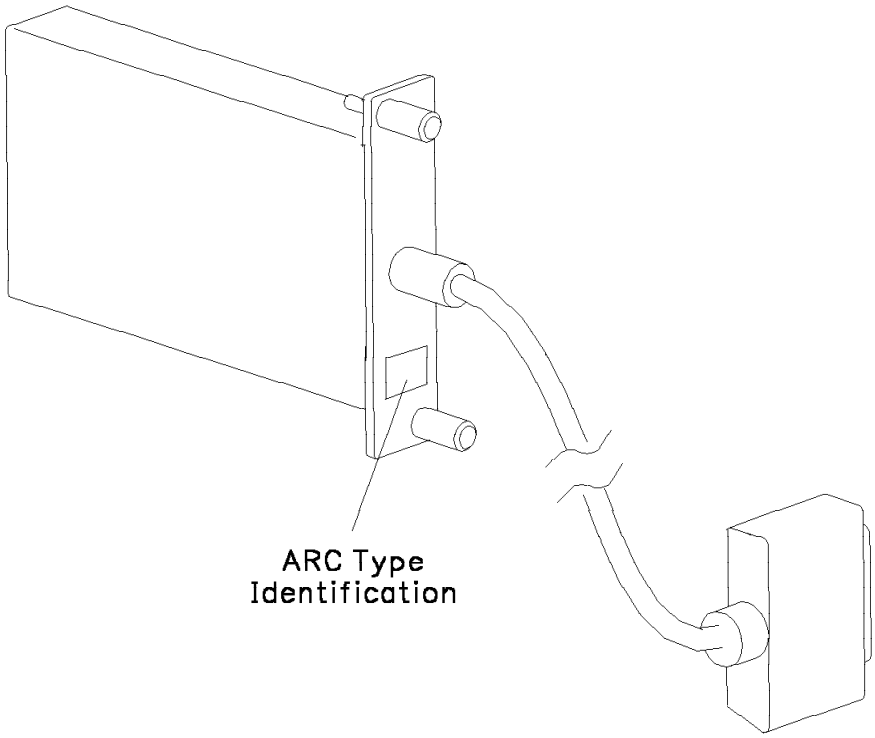


Figure 39. ARC Type Identification

Select the wrap plug according to the ARC type given in the following table:

Table 52. Active Remote Connector (ARC) Cables

ARC Type	ARC Code	Feature Code	Length m (ft)	Wrap Plug
ARC V.24 DTE	ARC 1B	6400	15 (50)	61F4523
ARC V.24 DCE	ARC 1A1 ARC 1A2	6405 6415	5 (16) 12 (40)	61F4522 61F4522
ARC V.35 DTE	ARC 3B	6500	15 (50)	61F4527
ARC V.35 DCE	ARC 3A1 ARC 3A2	6505 6515	5 (16) 15 (50)	61F4526 61F4526
ARC X.21 DTE	ARC 4B	6600	15 (50)	61F4530
ARC X.21 DCE	ARC 4A1 ARC 4A2	6605 6615	5 (16) 15 (50)	61F4529 61F4529
ARC X.21 DCE Transfix	ARC 4A3 ARC 4A4	6630 6635	5 (16) 15 (50)	61F4529 61F4529
ARC/3745 V.24 DTE	ARC 1D	6480	5 (16)	61F4525
ARC/3745 V.24 DCE	ARC 1C	6485	5 (16)	61F4525
ARC/3745 V.35 DTE	ARC 3D	6580	5 (16)	61F4578
ARC/3745 V.35 DCE	ARC 3C	6585	5 (16)	61F4528
ARC/3745 X.21 DTE	ARC 4D	6620	5 (16)	65X8927
ARC/3745 X.21 DCE	ARC 4C	6625	5 (16)	65X8927

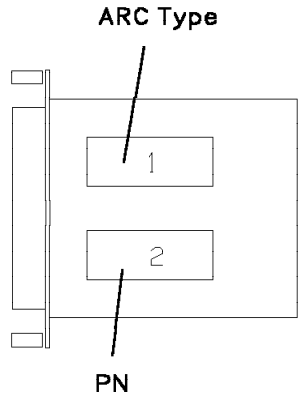


Figure 40. Wrap Plug for ARC Type 1A1, 1A2, 1B, 4A1, 4A2, 4A3, 4A4, or 4B identification

Wrap plug for ARC type 1A1 or 1A2: PN 61F4522
Wrap plug for ARC type 1B: PN 61F4523
Wrap plug for ARC type 4A1, 4A2, 4A3, or 4A4: PN 61F4529
Wrap plug for ARC type 4B: PN 61F4530

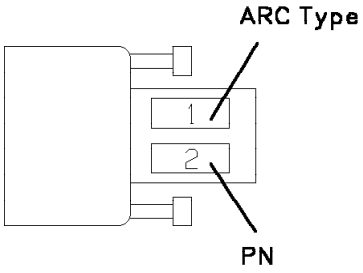


Figure 41. Wrap Plug for ARC Type 3A1, 3A2, or 3B Identification

Wrap plug for ARC type 3A1, or 3A2: PN 61F4526
Wrap plug for ARC type 3B: PN 61F4527

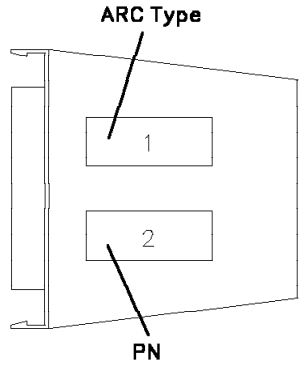


Figure 42. Wrap Plug for ARC Type 1C, 1D, 3C, 3D, 4C, or 4D Identification

Wrap plug for ARC type 1C or 1D: PN 61F4525
Wrap plug for ARC type 3C: PN 61F4528
Wrap plug for ARC type 3D: PN 61F4578
Wrap plug for ARC type 4C or 4D: PN 65X8927

Appendixes

Appendix A. Machine Status Area Field Definitions

You are permanently informed of the 3745 status by the information displayed in the machine status area (MSA), which is updated every 500 ms.

```
CUSTOMER ID:            3745-XXX            SERIAL NUMBER:
  line 2
  line 3
  line 4              Machine  Status  Area
  line 5
  line 6
  line 7 ------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN:
```

- **CUSTOMER ID**: Customer identification, permanently displayed (16 characters). To enter or modify the customer identification use the Password function (see page 271).
- **MACHINE TYPE**: This field displays the machine type and model: 3745-XXX.

  After an IPL in diskette mode, the model number (xxx on the screen) may be:

  – 090 instead of 130, 150, 160, or 170 for models 130, 150, 160, or 170
  – 010 instead of 210, 310, 410, or 610 for models 210, 310, 410, or 610.
- **SERIAL NUMBER**: Machine serial number of the 3745 (7 characters).
- Lines 2 and 3 are used for CCU A information.
- Line 4 is used for CCU A, IPL, scanner, or token-ring/TIC information.
- Lines 5 and 6 are used for CCU B information.

  For models 130, 150, 160, and 170, these lines display the maximum 3745 configuration:

```
For 3745 model 130
MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS 5, 6, 7, 8
                               LINE    ADAPTERS 1, 2, 3, 4

For 3745 model 150
MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS
                               LINE    ADAPTERS 1, 2, 3, 4

For 3745 model 160
MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS
                               LINE    ADAPTERS 1, 3, 4, 9, 10

For 3745 model 170
MAXIMUM ADAPTER CONFIGURATION: CHANNEL ADAPTERS 5, 6, 7, 8
                               LINE    ADAPTERS 1, 3, 4, 9, 10, 11, 12
```

  For models 210, 310, 410, and 610, these lines are blanked out.
- Line 7 is used for CCU B, IPL, scanner, or token-ring/TIC information, or displays dashes, date, and time.

In the next pages, each screen is followed by a grid. The grid areas, identified by a letter, correspond to the screen areas. The letter refers to the explanation following the picture.

If the message MAINTENANCE MODE appears in the MSA: 

CCU Information

```
CUSTOMER ID:                          3745-410           SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE BT      X71:xxxxxx LAR:xxxxxx OP:xxxx   C:0
RUN      STOP-IOC-CHK STOP-CCU-CHK AC       X72:xxxxxx IAR:xxxxxx ILVL:xxxx Z:0

CCU-B          PROCESS MOSS ONLINE  BT      X71:xxxxxx LAR:xxxxxx OP:xxxx   C:0
READY     BYP-IOC-CHK  BYP-CCU-CHK AC       X72:xxxxxx IAR:xxxxxx ILVL:xxxx Z:0
------------------------------------------------------------  08/07/86 10:20
FUNCTION ON SCREEN:                    FUNCTION PENDING:
```

Figure 43. MSA Example with CCU Information

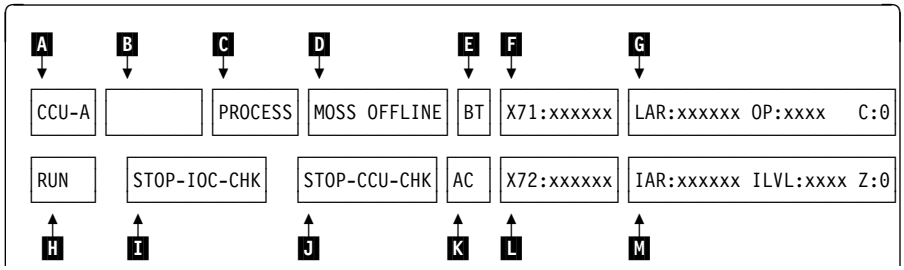


Figure 44. Fields of the CCU Information in the MSA

This picture shows the breakdown of the CCU information fields in lines 2-3 (CCU A) or 5-6 (CCU B).

Field A CCU name: can be CCU-A or CCU-B.

Field B Indicates if the CCU is selected or not.

SELECTED The CCU has been selected by using the CSR function.
blank The CCU is not selected.

Field C Displays the CCU mode:

PROCESS Normal processing.
I-STEP Instruction step.

Field D Indicates whether MOSS is connected to the CCU control program:

MOSS-ONLINE MOSS is connected to the CCU control program.
MOSS-OFFLINE MOSS is not connected to the CCU control program.
MOSS-ALONE MOSS is operational while the CCU control program is not loaded or no longer operational.

To put MOSS alone, when it is online or offline, you may:

- Perform CCU **RST** function, or
- Perform the following actions:
  1. Power the CCU OFF, and wait for about 10 seconds.
  2. Power the CCU ON.
  3. Wait for the end of IML.

SERVICE-MODE MOSS is in maintenance mode (service personnel only).

The status of the MOSS after the different IMLs and IPLs is as follows:

After	MOSS Status	Control Panel Hex Display
Initialization	MOSS ONLINE	X'000'
(general IPL)	MOSS OFFLINE if CP loaded	X'FEE'
MOSS IML	MOSS ALONE if CP is not loaded	X'FEF'
CCU/Scanner IPL	MOSS ONLINE	X'000'
Step by Step IPL	MOSS ONLINE	X'000'
Bypass Phase 1 IPL	MOSS ONLINE	X'000'

Note: For a machine with two CCUs, the code displayed on the control panel reflects the last operation executed.

Field E Displays BT (highlighted) when the branch trace function is active.

Field F Updated each time an output X'71' instruction is executed, by the control program, for example, when using the CCU data exchange function or the control program procedures, or during 3745 initialization.

Output X'71' contents are buffered. If the buffers are overrun due to intensive output, some data may be lost; however, the last value in output will be displayed.

X71=xxxxxx Contents of CCU X'71' output register.

X71=ERROR Error when accessing the register. Register contents cannot be displayed.

At initialization time, field 'F' displays:
X71=xxyyzz, where xx are the 3745 initialization flags with the following meaning:

01 Load/dump request detected on a link-attached 3745.
02 Load/dump request detected on a channel-attached 3745.
05 Dump in progress on a link-attached 3745.
06 Dump in progress on a channel-attached 3745.
09 Control program load in progress on a link-attached 3745.
0A Control program load in progress on a channel-attached 3745.
11 Remote Power Off (RPO) command is detected.
20 Control program loader/dump abend before a load/dump request detected on a channel- or link-attached 3745.
21 Control program loader/dump abend on a load/dump request detected on a link-attached 3745.
22 Control program loader/dump abend on a load/dump request detected on a channel-attached 3745.
25 Control program loader/dump abend on a link-attached 3745 dump.
26 Control program loader/dump abend on a channel-attached 3745 dump.
29 Control program loader/dump abend on a link-attached 3745 control program.
2A Control program loader/control program abend on a channel-attached 3745 control program.
40 Load dump request from disk.
44 Dump to disk in progress.
48 Control program load from disk in progress.
60 Control program loader/dump request from disk abend.
64 Control program loader/dump from disk abend.
68 Control program loader/control program from disk abend.

yyzz indicates the IPL port address, except when xx = 00, in which case:

- yy indicates the link ports defined in the Link IPL port table.

- zz indicates the link IPL ports that are presently enabled.

This encoded address is displayed in decoded form in field V, preceded by CA or L (see field V in “IPL Information” on page 400).

Field G (and Field M)

Field 'G' is displayed, along with field 'M', when the CCU status is STOP X'70', STOP PGM, STOP BT, STOP AC, or HARDSTOP (see field H).

```
LAR=xxxxxx  OP=xxxx    C=x    (field G)
IAR=xxxxxx  ILVL=xxxx  Z=x    (field M)
```

LAR=xxxxxx Address of the last executed instruction.
OP=xxxx Last executed instruction.
C=x Value of the C-latch (0 or 1).
IAR=xxxxxx Address of the next instruction to be executed.
ILVL=xxxx Active CCU interrupt levels (1 to 4).
Z=x Value of the Z-latch (0 or 1).

```
CCU INTERRUPTS DISABLED    (field G)
  nothing displayed        (field M)
```

No interrupts can be received from the CCU:

- During a MOSS IML from the control panel, just after power ON.
- While performing CCU IPL to avoid automatic CCU re-IPL in case of HARDCHECK (see field G).
- While mounting a new diskette (service personnel only).
- After a fallback.
- While performing some utility programs (service personnel only) to prevent interference with the utility program. All communications between the CCU and MOSS are delayed. For example, a BER generated by the control program is kept until the utility program ends and MOSS is back online.

```
CCU REGISTERS      (in field G)
NOT ACCESSIBLE     (in field M)
```

Appropriate registers cannot be read, so it is impossible to display LAR, OP, C, IAR, ILVL, and Z information.

Field H CCU status:

DOWN A hardware error occurred on the CCU, and service personnel intervention is necessary.
HARDCHK The control program stopped on a hardcheck error. An automatic re-IPL is attempted. In certain cases however, (for example if the hardcheck occurs during a general IPL) there is no re-IPL.
HARDSTOP You selected the CCU check reset function to reset the CCU check condition. To restart, select the CCU Start function on the 3745 function menu or press F6=CCU START or F6=S if displayed on the screen.
IPL-REQ A CCU IPL was requested and is in progress.
PWR-DOWN The related CCU power supply is down.
READY The CCU is operational and can be used immediately (IML completed).
RESET The control program stopped since you initiated the RESET CCU function; to restart the CCU, perform an IPL.
RUN Instructions are being executed or data is being transferred.
STOP-AC The control program stopped because the address compare function that you initiated with CCU STOP (CCU ACTION=S) is successful.
STOP-BT The control program stopped because the branch trace function that you initiated with CCU STOP has become deactivated.

STOP-PGM The control program stopped because you initiated the CCU STOP or SET I-STEP function.
STOP-X70 The control program stopped on an output X'70' instruction executed by the control program.

Field I Shows whether the 3745 will stop on an IOC check.

BYP-IOC-CHK The system will not stop on an IOC check (default or after a RESET IOC CHECK STOP).
STOP-IOC-CHK You initiated the SET IOC CHECK STOP function to force the system stop on an IOC check.

Field J CCU check mode:

BYP-CCU-CHK You initiated the SET BYPASS CCU CHECK function so the system will not stop on a CCU check.
STOP-CCU-CHK The system will stop on a CCU check (default or after the RESET BYPASS CCU CHECK function).

Field K Information on the CCU address compare (SAC) function:

AC (Highlighted)

The address compare function is active. If you selected MOSS INTERRUPT=Y and/or CCU STOP=Y when defining the address compare, the following is displayed:
AC HIT (Highlighted) A single- or double-address compare is successful.
AC HIT12 (Highlighted) Two single-address compares are successful on the first and second address.

Field L Updated each time an output X'72' instruction is executed by the control program. For example, when using the CCU data exchange function, the control program procedures, or the 3745 initialization.

Output X'72' contents are buffered. If the buffers are overrun due to intensive outputting, some data may be lost; however, the last value outputted will be displayed.

X72=xxxxxx Contents of CCU X'72' output register.
X72=00xxxx Control program load/dump (CLDP) abend code (refer to the IPL/IML chapter of the Maintenance Information Reference manual, SY33-2056, for abend codes list).
X72=ERROR Error when accessing the register. Register contents cannot be displayed.

Field M Field 'M' is displayed along with field 'G' when the CCU is in the STOP state (see field 'G' description).

Scanner Information

```
CUSTOMER ID:                          3745-210          SERIAL NUMBER:
CCU-A          PROCESS MOSS OFFLINE
RUN       BYP-IOC-CHK STOP-CCU-CHK
SCANNER 3  INITIALIZED


------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: TSS SERVICES         FUNCTION PENDING:
```

Figure 45. MSA Example with TSS Information

Scanner information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

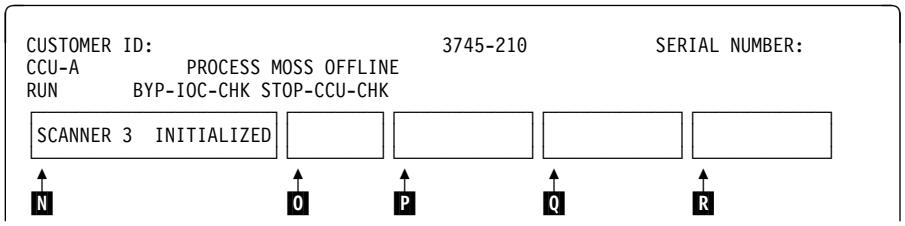


Figure 46. Fields of the TSS Information in the MSA

This picture shows the breakdown of the scanner information fields in line 4 (CCU A scanners) or 7 (CCU B scanners).

Field N Information on the selected scanner:

- NO SCANNER SELECTED: You selected a scanner function before selecting a scanner.
- SCANNER XX yyyyyyyyyyyy : Where XX is the number of the selected scanner (1 to 32), and yyyyyyyyyyyy is any of the following:

  CONNECTED The scanner is operational and under control of the CCU control program.

  DISCTD-GO Disconnected-go: You entered the GO command while in status DISCTD/STOP. The scanner remains disconnected but control code execution continues.

  DISCTD-STOP Disconnected-stop: The control code is no longer under control of the CCU control program, either after a STOP command or after a scanner address compare hit.

  INITIALIZED The control code is loaded and the front-end adapter is operational.

  INOPERATIVE The scanner is inoperative, or the CCU is not in RUN status.

  RESET You entered the RESET command, and you may initiate an IML or a DUMP.

  UNKNOWN-MODE The scanner is selected but it is impossible to identify its status.

Field O Scanner option:

DUMP A dump is in progress.

IML A scanner IML is being started.

SST abcde One or more snapshot traces have been started (up to five).

The status of the traces is given in the following table:

a b c d e	SST Field Meaning
1	Trace 1 active
. 1 . . .	" 2 "
. . 1 . .	" 3 "
. . . 1 .	" 4 "
. . . . 1	" 5 "
E	Trace 1 failed
. E . . .	" 2 "
. . E . .	" 3 "
. . . E .	" 4 "
. . . . E	" 5 "

Fields P, Q, and R: Service personnel only.

IPL Information

```
CUSTOMER ID:                          3745-210           SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE BT      X71:008000
RUN      BYP-IOC-CHK  STOP-CCU-CHK AC
IPL CCU-A  PHASE 4     ENABLED CA xxxxxxxxxxxxxxxx L xxxxxxxx


------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN:                    FUNCTION PENDING:
```

Figure 47. MSA Example with IPL Information

CCU/scanner IPL information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

A short time after successful completion of the IPL, these lines are cleared and line 7 is filled by dashes plus the date and time.

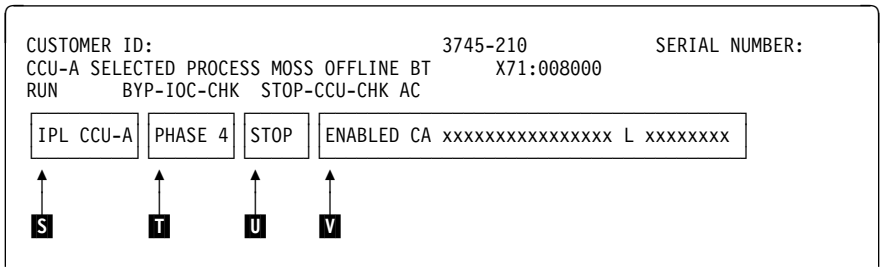


Figure 48. Fields of the IPL Information in the MSA

This picture shows the breakdown of the IPL information fields in line 4 (CCU A IPL) or 7 (CCU B IPL).

Field S IPL CCU-x (x can be A or B):
A CCU IPL is started.

Field T

PHASE 1 Start of phase 1 (CCU test and initialization).

PHASE 2 Start of phase 2 (load from the disk and start the control program dump loader (CLDP).

PHASE 3 Start of phase 3 (load and initialize the scanners).

PHASE 4 Start of phase 4 (load/dump from the host or disk, and initialize the control program).

SUSPEND An automatic IPL has been requested on a CCU, while IPL was not yet completed on the other one. From a MOSS standpoint, the latter CCU is frozen, until the other reaches phase 3 or 4, depending on the moment the request was received.

All fields except 'F' and 'L' are frozen.

Field U

STOP The IPL stopped at the beginning of the phase indicated in field 'T' (step-by-step IPL), or on operator's request (F4=STOP) during that same phase.

Field V Displays one of the following:

CA IPL DETECTED ON CA xx:
The control program loading/dumping is started on a channel-attached 3745. xx is the channel adapter number.

CONTROL PROGRAM LOADED:
The control program is loaded.

CP SAVE ON DISK IN PROGRESS:
The control program save on disk is in progress.

DUMP IN PROGRESS ON CA xx:
A control program dump is being taken on a channel-attached 3745. The progression of the dump is indicated in MSA field F which displays the control program storage addresses. xx is the channel adapter number.

DUMP IN PROGRESS ON L xxxx:
A control program dump is being taken on a link-attached 3745. The progression of the dump is indicated in MSA field F which displays the control program storage addresses. xxxx is the decimal telecommunication line address.

DUMP ON MOSS DISK IN PROGRESS:
A control program dump is being taken on the MOSS disk. The progression of the dump is indicated in MSA field F which displays the control program storage addresses.

ENABLED CA xxxxxxxxxxxxxxxx L xxxxxxxx:
Indicates which channel adapters or link IPL ports are enabled. x can be Y, N, or U for channel adapters (CA). x can be Y or N for link IPL ports (L).

- In the CA field, Ys indicate which channel adapters are enabled, Ns which channel adapters are not enabled, and Us which channel adapters are unusable. The positions of the Ys, Ns, and Us give the channel adapter number.
- In the L field, Ys indicate which link IPL ports are enabled, and Ns which link IPL ports are not enabled. The positions of the Ys and Ns give the position of the Link IPL port in the link IPL port table.

FALLBACK CANCELED:
The 3745 fallback is canceled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the FBK was requested from the console.
- The operator console switching from normal mode to test mode.

FALLBACK CHECK Fxx:
The fallback ends abnormally. The check code (Fxx) is also displayed on the hex display of the control panel.

FALLBACK COMPLETE:
The fallback is successfully completed.

FALLBACK COMPLETE + ERRORS:
The fallback is complete although an error has been encountered. The 3745 should run normally.

FALLBACK IN PROGRESS:
The fallback operation is in progress.

IPL CANCELED:
The 3745 initialization is canceled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the IPL was requested from the console.
- The operator console switching from normal mode to test mode.
- Automatic MOSS re-IML during a CCU/scanner step-by-step IPL, or
- Two automatic MOSS re-IMLs during a CCU/scanner IPL.

IPL CHECK Fxx:
The IPL ended abnormally. Most of the time the check code (Fxx) is also displayed on the hex display of the control panel.

IPL CHECK F1B CLDP ABEND xxxx:
The IPL ended abnormally. xxxx is the hexadecimal CLDP abend code. Contact the appropriate service representive.

IPL COMPLETE:
The IPL is successfully completed.

IPL COMPLETE + ERRORS:
The IPL is complete, although an error has been encountered. Alarm D1 is displayed. The 3745 runs with some restrictions.

IPL FROM MOSS DISK IN PROGRESS:
The IPL from the MOSS disk is in progress.

IPL IN PROGRESS:
The IPL operation is in progress. The progression of the IPL is indicated in MSA field F which displays the control program storage addresses.

LINK IPL DETECTED ON L xxxx:
The control program loading/dumping is started on a link-attached 3745.

LINK TEST PROGRAM ABEND:
A hardware error occurred at phase 3, while loading the stand-alone link test.

LINK TEST PROGRAM LOADED:
The link test program is loaded.

LOAD IN PROGRESS ON CA xx:
The control program is being loaded on a channel-attached 3745. The progression of the load is indicated in MSA field F where the CCU storage addresses are displayed. x is the channel adapter number.

LOAD IN PROGRESS ON L xxxx:
The control program is being loaded on a link-attached 3745. The progression of the load is indicated in MSA field F where the CCU storage addresses are displayed. xxxx is the decimal telecommunication line address.

RPO DETECTED ON L xxxx:
The remote power OFF (RPO) command is detected on telecommunication line xxxx. xxxx is the decimal telecommunication line address.

SCANNER(S) NOT IMLED: xxxxxxxx:
Indicates that one or more scanners are not IMLed. xxxxxxxx consists of eight hexadecimal digits (32 bits). Each bit corresponds to a scanner (CS) number.

SWITCHBACK CANCELED:
The switchback operation is canceled by:

- The operator (immediate terminate function).
- Operator console power-OFF when the IPL was requested from the console.
- The operator console switching from normal mode to test mode.

SWITCHBACK CHECK Fxx:
The switchback ends abnormally. The check code (Fxx) is also displayed on the hexadecimal display of the control panel.

SWITCHBACK COMPLETE:
The switchback is successfully completed.

SWITCHBACK COMPLETE + ERRORS:
The switchback is complete, although an error has been encountered. The 3745 should run normally.

SWITCHBACK IN PROGRESS:
The switchback operation is in progress.

TEST CANCELED:
During IPL of the active CCU, and at IPL completion, the test of the standby CCU has been canceled by pressing F1.

TEST CHECK Fxx:
During IPL of the active CCU, and at IPL completion, the test of the standby CCU ends abnormally. The check code (Fxx) is also displayed on the hexadecimal display of the control panel.

TEST COMPLETE:
During IPL of the active CCU, and at IPL completion, the test of the standby CCU has been successfully completed.

TEST IN PROGRESS:
During IPL of the active CCU, and at IPL completion, the test of the standby CCU is in progress.

Token-Ring/TIC Information

```
CUSTOMER ID:                          3745-210           SERIAL NUMBER:
CCU-A SELECTED PROCESS MOSS OFFLINE
RUN      STOP-IOC-CHK STOP-CCU-CHK
TRA 1   DISCONNECT   TIC 1       OPEN        NCP TRS NOT AVAILABLE


------------------------------------------------------------  mm/dd/yy hh:mm
FUNCTION ON SCREEN: TRSS SERVICES        FUNCTION PENDING:
```

Figure 49. MSA Example with TRSS Information

Token-Ring information is displayed on line 4 for CCU-A, and on line 7 for CCU-B.

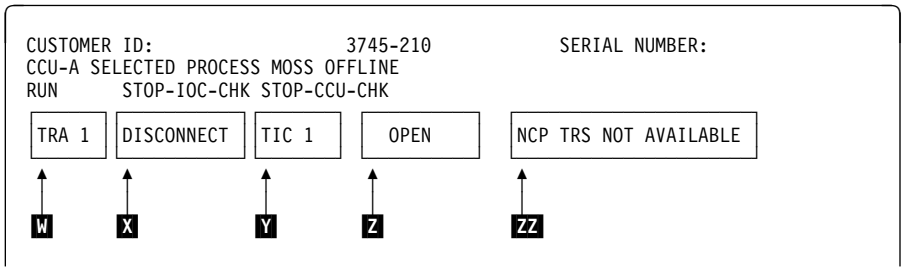


Figure 50. MSA Field Definitions (Token-Ring Information)

This picture shows the breakdown of the token-ring information fields in line 4 (CCU A) or 7 (CCU B).

Field W TRA number (1, 2, 5, or 6). Indicates that the TRA has been selected (TRS or TID function).

Field X TRA mode, updated after TRA selection

Note: If field F indicates CCU INTERRUPTS DISABLED, the TRA mode has no meaning.

The possible modes are:

CONNECT: The TRA is operational and is under NCP control. The control program handles all interrupts (except in the case of an MIOH error).

The PIO disable and the disconnect bits in the TRM level 1 error status are OFF.

DISCONNECT: The TRA does not run under the control of the control program but under the control of the MOSS microcode. MOSS handles all interrupts and PIOs to/from the TIC.

The PIO disable and the disconnect bits in the TRM level 1 error status are OFF.

UNKNOWN: A non-recoverable error occurred during the connection/disconnection process, or an MIOC/IOC error occurred while getting level 1 error status during TRA selection. Connect/disconnect may be re-tried.

Field Y TIC1 or TIC2

TIC n: Selected TIC number (1 or 2), updated after a TIC selection.

Field Z Current mode of the selected TIC, updated after a TIC selection or a refresh of the screen display.

The TIC must be in one of the seven following modes (as reported by the NCP):

IDLE: The TIC has not yet been reset by the NCP.

RESET: The TIC has been reset by the NCP but has not yet been initialized.

INITIALIZED: The TIC has been initialized but has not yet been open or disabled. Initialization parameters have been passed to the TIC by the NCP.

OPEN: The TIC has been inserted into the token-ring and is in normal operation. Open parameters have been passed, and receive and transmit operations have been started.

CLOSED: The TIC has been opened since initialization, but has since been closed (by the host).

FROZEN: An error was detected by the NCP and the following actions were taken by the NCP:

- Interrupts from this TIC are disabled.
- DMA from this TIC is disabled.
- The TIC is reset.

DISABLED: The associated TRA has been disconnected by MOSS. The NCP will send no PIO to this TIC.

(blank): There is no TIC mode if the NCP is not online.

The TIC mode is derived from the NCP MAC layer status obtained from the NCP. The following table gives the correspondence:

Table 53. TIC Mode and MAC Status

Medium Access Control (MAC) Status	TIC Mode
Idle	Idle
TIC resetting hard	Idle
TIC resetting soft	Idle
Initialization list transfer	Reset
Initialized	Initialized
Open started	Initialized
Receive initialization	Initialized
Transmit initialization	Initialized
Started	Open
Transmit in progress	Open
Close in progress	Open
Closed	Closed
Frozen	Frozen
Disconnected	Disabled

Field ZZ NCP TRS NOT AVAILABLE

Indicates that:

- At the IPL of the NCP, the TRSS was not available and did not pass necessary TRSS information to MOSS, or
- An error has occurred when trying to access NCP control blocks needed by the TRSS services.

Several functions which depend upon the NCP will not be available.

Otherwise, the **ZZ** field is blank.

Appendix B. Wrap Test Patterns

Default Patterns

Default patterns are predefined wrap patterns that are ready for use. There are two types of default patterns: data and control lead.

Data Wrap Default Patterns

Data wrap default patterns are available according to line protocol, for example, SDLC, BSC, and SS for all LIC types. There is no restriction on whether the wrap is at cable or modem level. The available data wrap default patterns are listed below.

SDLC/HDLC
BSC NCP - EBCDIC non-transparent
BSC NCP - EBCDIC transparent
BSC NCP - ASCII non-transparent
BSC EP - EBCDIC non-transparent
BSC EP - EBCDIC transparent
BSC EP - ASCII non-transparent
BSC EP - ASCII transparent
BSC EP character mode - EBCDIC non-transparent
BSC EP character mode - ASCII non-transparent
SS - 7 bits
SS - 8 bits

Control Lead Default Patterns

Control lead default patterns are available:

- At LIC tailgate
- At modem level, only for IBM 386x and 58xx modems
- Inside the HSS
- At HSS tailgate.

To use the control lead default patterns at the modem level on modems other than an IBM 386x, 586x, or 786x modem, be sure that the functions provided by your modem are strictly identical with those provided by the 386x, 58xx, and 786x modems. If they are not, create your own personal pattern.

Note: The control lead default patterns are not valid for an NTT cable wrap test.

Personal Patterns

To create a personal pattern, select option 3 in the Wrap Test selection screen (see page 376 or 377).

- For personal **data** wrap pattern: see below.
- For personal **control lead** wrap pattern: see page 412.

Personal Data Wrap Pattern

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 2          DATA WRAP: PERSONAL PATTERN
  TRANSMIT PATTERN        COPY (Y,N)      EXPECTED PATTERN
                           Y
                           Y
                           Y
                           Y
          A                Y       B
                           Y
                           Y
                           Y
                           Y
                           Y
- WHEN PATTERN COMPLETE ENTER C, THEN PRESS SEND ==> C
===>

F1:END  F2:MENU1  F3:ALARM        F6:QUIT  F8:FORWARD
```

- Enter the transmit pattern in **A** .
- If the two patterns are different, replace Y by N and enter the expected pattern in **B** .
  If the two patterns are the same, leave the Y of each line unchanged and do not enter the expected pattern.
- Press SEND to transmit the pattern.
- Press F8 to display an empty screen to enter more characters (up to 3 screens).
- When complete, enter C on line **C** then press SEND.

On page 411, there is an example of a personal data wrap pattern.

You can enter your personal data wrap patterns the way you wish. The only *rules* that apply to creating your patterns are:

1. You must enter two hexadecimal characters at a time. Each pair of characters must be separated from the next by one blank (space bar).
2. Each transmit and expected personal data wrap pattern must not be shorter than 8 nor longer than 540 hexadecimal characters.
3. You cannot use *more than three screens* to enter your personal patterns. On a single screen, you cannot enter more than 180 characters for the transmit pattern and 180 characters for the expected pattern.

Contents of Personal Data Pattern

According to the line protocol, the pattern should start with a combination of the following characters:

- Transmit control byte **1**
- End-of-message (EOM) search argument **2**
- Padding character **3**

- Synchronization characters **4** .

The following table tells you, by line protocol, which of these characters have to be entered before the data. These characters are transmitted but not expected.

If you entered Y on line **C** of the Data Wrap Test Pattern Selection screen (refer to page 376):
- EIB OR ITB MODE ==> Y
you have to follow the rules described under "EIB/ITB" **5** .

Table 54. Characters to be Entered before Data in Data Wrap Pattern

Protocol Control Byte	Transmit Argument 1	EOM Search Characters 2	Padding 3	Synchronization 4
SDLC/HDLC	No	No	No	No
BSC (normal mode)	Yes	No	No	No
BSC (character mode)	No	Yes	Yes	Yes
Start-Stop	No	Yes	Yes	Yes

1 Transmit Argument - NCP Transmit Control Byte

The NCP transmit control byte contains coded instructions to the scanner that specify the initial and final control characters to be used in a transmission. It also contains an indicator that specifies whether leading graphics are to be sent. The transmit control byte has the following format:

0-2: Initial control sequence (ICS)
3-6: Final control sequence (FCS)
7: Leading graphics are possible if this bit is 1, not possible if this bit is 0.

The following table explains all transmit control bytes (BSC ASCII and BSC EBCDIC). The first column gives, for each transmit control byte, the hexadecimal value that you must enter when you create your personal pattern. It is also the value displayed on the default data wrap pattern screen.

Hex Value	Meaning
00	Turn line around and monitor
07	Send ENQ, turn around, and receive response (ENQ may be in a data stream of leading graphics)
0D	Send ACK-0, turn around, and receive
0F	Send NAK, turn around, and receive
1A	Send RVI, turn around, and receive
1D	Send ACK-1, turn around, and receive
1E	Send WACK, turn around, and receive
26	Send STX-ENQ (TTD), turn around, and receive
32	Send STX-data-ETX, turn around, and receive
34	Send STX-data-ETB, turn around, and receive
46	Send DLE-STX-data-DLE-ENQ, turn around, and receive
48	Send DLE-STX-data-DLE-ITB
52	Send DLE-STX-data-DLE-ETX, turn around, and receive
54	Send DLE-STX-data-DLE-ETB, turn around, and receive
66	Send SOH-data-ENQ, turn around, and receive
72	Send SOH-data-ETX, turn around, and receive
74	Send SOH-data-ETB, turn around, and receive
80	Send EOT, turn around, and monitor
98	Send EOT, turn around, and level 2 interrupt
9C	Send DLE-EOT, turn around, and level 2 interrupt

1 Transmit Argument - EP Transmit Control Byte

In non-transparent mode, the EP transmit control byte is X'00'. In transparent mode, the EP transmit control byte is X'40'.

2 EOM Search Argument

The EOM search argument is the copy of the last character of the pattern. It is transmitted but not expected in return. It tells the control program what the last expected character is.

3 Padding Characters

Padding characters are used to insert timing characters into the data stream. These characters can be used to accommodate the operation of some mechanical action at a station, or to prevent distortion to characters due to modem turnaround activity.

- For leading pad: X'55' or X'FF' in BSC character mode; X'FF' in start-stop
- For trailing pad: X'FF'.

4 Synchronization Characters

Synchronization characters are transmitted on the line but are not expected in return. They are:

- For BSC ASCII: X'16'
- For BSC EBCDIC: X'32'.

5 EIB/ITB

Apply the following rules if you entered EIB or ITB ==> Y on the Data Wrap Test Pattern Selection screen:

- In NCP, the ITB character X'1F' must be immediately followed by X'00', in both the transmit and expected patterns.
- In EP:
  - ETB and ETX characters must be immediately followed by X'00' only in the expected patterns.
  - If the ITB characters are to be considered as control characters on the line being tested (system generation), the ITB characters must be immediately followed by X'00' in the expected patterns only.

Example of a Personal Data Wrap Pattern

Assume that you want to create a transmit pattern and an expected pattern, and the differences between them are: the transmit control byte (32) is transmitted but not expected; and 18 and 19 are expected instead of 16 and 17.

Transmit pattern: 32 00 05 07 0B 0C 0D 0F 11 12 13 14 15 16 17
Expected pattern: 00 05 07 0B 0C 0D 0F 11 12 13 14 15 18 19

The following describes one way of creating your patterns. Enter one and only one blank (space bar) between each pair of hexadecimal characters.

1. Enter 32, press SEND, enter N, then press SEND twice.
2. Enter 00 05 07 08 0C OD OF 11, then press SEND three times.
3. Enter 12 13 14 15, then press SEND three times.
4. Enter 16 17, press SEND, enter N, press SEND, enter 18 19.
5. Enter C to indicate the pattern is complete then press SEND.

Personal Control Lead Wrap Pattern

The personal control lead wrap pattern consists of four control lead bytes. Each bit within the byte is represented on the screen by a period. When you create your pattern, replace each period by 0 or 1 to represent the logic level of that control lead.

The bit meaning is given under “Control Lead Bit Definition” on page 413.

- Byte **A** contains a control lead pattern to be transmitted.
- Byte **C** contains the expected control lead pattern resulting from byte **A**.
- Byte **B** contains a control lead pattern to be transmitted.
- Byte **D** contains the expected control lead pattern resulting from byte **B**.

```
------------------------------------------------------------- mm/dd/yy hh:mm
FUNCTION ON SCREEN: WRAP TEST
LINE ADDRESS: 0     CONTROL LEAD WRAP: PERSONAL PATTERN

                                  A        B
- ENTER TRANSMIT PATTERN ==> ........   ........
                                  C        D
- ENTER EXPECTED PATTERN ==> ........   ........









===>

F1:END  F2:MENU2  F3:ALARM        F6:QUIT
```

From this screen enter the transmit and expected pattern:

1. Replace each period of byte **A** by 0 or 1, then press the Tab key.
2. Replace each period of byte **B** by 0 or 1, then press the Tab key.
3. Replace each period of byte **C** by 0 or 1, then press the Tab key.
4. Replace each period of byte **D** by 0 or 1, then press the Tab key.

Bit 0 is the leftmost bit in the byte.

Control Lead Bit Definition

LIC1 (EIA-232 or CCITT V.24)

Transmit byte A or B	
Bit	**Meaning**
0	Data terminal ready (DTR)
1	Request to send (RTS)
2	New synchronization
3	Data signaling rate selector (DSRS)
4	Test control
5	Not used (always 0)
6,7	Not used (always 1)

Expected byte C or D	
Bit	**Meaning**
0	Data set ready (DSR)
1	Ready for sending
2	Ring indicator (RI)
3	Receive line signal detector (RLSD)
4	Test indicator (TI)
5	Not used (always 0)
6,7	Not used (always 1)

LIC1 (RS366 or CCITT V.25) - Autocall

Transmit byte A or B	
Bit	**Meaning**
0	Digit signal 8
1	Digit signal 4
2	Digit signal 2
3	Digit signal 1
4	Call request
5	Digit present
6,7	Not used (always 1)

Expected byte C or D	
Bit	**Meaning**
0	Power indication
1	Data line occupied
2	Present next digit
3	Abandon call and retry
4	Call originator status
5	Not used (always 0)
6,7	Not used (always 1)

V.35 on HSS or TSS LIC3

Transmit byte A or B	
Bit	**Meaning**
0	Data terminal ready (DTR)
1	Request to send (RTS)
2	Not used
3	Not used
4	Modem test (TC)
5	Not synchro (MOUT)
6	-
7	-

Expected byte C or D	
Bit	**Meaning**
0	Data set ready (DSR)
1	Clear to send (CTS)
2	Not used
3	Receive line signal detector (RLSD)
4	Test indicator (TI)
5	Receive data (RD)
6	-
7	-

HSS-X.21

Transmit byte A or B	
Bit	**Meaning**
0	Not used
1	Control (C)
2	Not used
3	T-enable
4	Not used
5	Not synchro (MOUT)
6	-
7	-

Expected byte C or D	
Bit	**Meaning**
0	Not used
1	Indication (I)
2	Controlled not ready
3	Steady state
4	Not used
5	Receive data
6	-
7	-

Example of a Personal Control Lead Wrap Pattern

Assume that you want to create a personal control lead wrap pattern for the following lines, which are being wrapped at the modem cable end for a LIC 1 (EIA-232/CCITT V.24):

Request to send	--> Ready for sending
	--> Receive line signal detect
Data terminal ready	--> Data set ready

Furthermore, assume that you want to:

- Activate only the 'request-to-send' line and check that the 'ready-for-sending' and the 'receive-line-signal-detect' lines are activated.
- Activate only the 'data-terminal-ready' line and check that the 'data-set-ready line' is activated.

Enter your patterns according to the bit definitions for the LIC1 (EIA-232/CCITT V.24) given under "Control Lead Bit Definition." From these bit definitions, the personal control lead pattern is:

TRANSMIT PATTERN==> 01000011 10000011
EXPECTED PATTERN==> 01010011 10000011

Appendix C. Using Control Program Procedures (CPP)

Printing Control Program Procedures

Control program procedures may be printed on a host printer. The transfer and print procedures are documented in the *NCP, SSP, and EP Diagnosis Guide,* LY30-5591. The 3745 Procedure tools are listed in the following table:

Table 55. 3745 Procedure Tools

Name	Use	Go to page
DIRECTORY	To list all control program procedures.	416
DISPLAY	To display a specific procedure.	417
CREATE/COPY	To create or copy a procedure.	418
ERASE	To erase a procedure that *you* created and cataloged.	420
MODIFY	To modify a procedure that *you* created and cataloged.	420
EXECUTE	To execute any cataloged procedure.	422
CATALOG	To catalog a procedure that you created, copied, or modified.	423

Managing Control Program Procedures

You can create a procedure in *3745 storage*, then catalog it in a *procedure file* on the disk.

To display, modify, or execute a procedure, you move it from the procedure file on disk into 3745 storage, unless a procedure with the same name is already in 3745 storage. In this case, the following two F keys are displayed, so you can select the appropriate procedure:

F4: To use a procedure from the disk file.

F6: To use a procedure from storage.

Both versions of the same procedure may be at different levels.

To exit from a 3745 procedure tool:

- Select another 3745 procedure tool displayed in the secondary menu, or
- Press F1. It will cancel *all* 3745 procedure tools and erase any procedure that may be in 3745 storage.

Displaying the Directory

Use DIRECTORY to display the directory, that is, the list of all cataloged procedures. The directory is updated automatically when you catalog a procedure.

The following screen is displayed:

```
-------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       |      NAME    TITLE                   DATE (MM/DD/YY)
 2 DISPLAY         |
 3 CREATE/COPY     | A
 4 ERASE           | 01    CP01    SDLC LINK TEST (NCP)         mm/dd/yy
 5 MODIFY          | 02    CP02    3270 BSC POLL (NCP-EP)       mm/dd/yy
 6 EXECUTE         | 03    CP03    2740 S/S POLL (NCP-EP)       mm/dd/yy
 7 CATALOG         | 04    CP04    START ADDR TRACE (NCP)       mm/dd/yy
                   | 05    CP05    STOP ADDR TRACE (NCP)        mm/dd/yy
                   | 06    CP06    X.21 SWITCHED LINE TEST      mm/dd/yy
                   | 07
                   | 08
                   | 09
                   | 10
===>

F1:END  F2:MENU2  F3:ALARM                    F8:FWD
```

You cannot update the information displayed.

A The first two characters are the procedure number. This number cannot be used to select the procedure. Its only purpose is to locate a procedure within the directory.

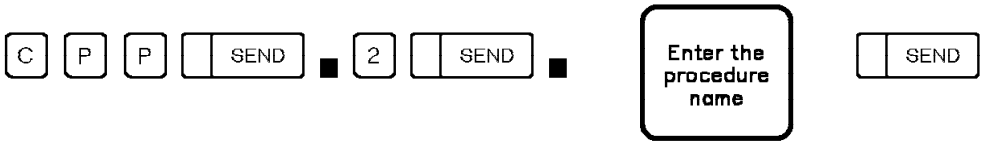
NAME and TITLE are those that you entered when creating the procedure.

DATE is that given by the 3745 when you cataloged the procedure.

The directory is automatically updated when you catalog a procedure.

Displaying a Cataloged Procedure

Use DISPLAY to display a specific procedure.



The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY          |          PW02 3270 BSC POLL (NCP-EP)
 2 DISPLAY            |
 3 CREATE/COPY        |
 4 ERASE              | 001 DISP L= 19 M= **** GENERAL POLL TO 3270 (BSC) **
 5 MODIFY             | 002 SETI D= 00000C F=07 I=Y
 6 EXECUTE            | 003 GOTO T= 031 A= 00000 C= & B= 00000
 7 CATALOG            | 004 DISP L= 12 M= CHANGE THE THREE 'F' BY THE NCP LINE
                      | 005 DISP L= 13 M= ADDRESS (HEX)
                      | 006 OSET D= 0F20FF F= 02 I= Y
                      | 007 GOTO T= 031 A= 0000FF C= B B= 00003
                      | 008 GOTO T= 012 A= 0000FF C= B B=000005
                      | 009 GOTO T= 014 A= 00FF00 C= B B=00FF00
                      | 010 DISP L= 12 M= ERROR (SEE LINE TEST FUNCTION)
===>

F1:END  F2:MENU2  F3:ALARM              F6:QUIT
```

From the above screen:

- Press F4 to display a procedure that is already cataloged.
- Press F6:TO USE PROC FROM STORE - To display the procedure that is in the 3745 storage.
- Press F6:QUIT - To clear the displayed procedure and allow you to display another.

Creating or Copying a Procedure

Use CREATE/COPY to create a new procedure or to copy an existing one under another name.

The maximum number of procedures that you can create depends on the size of the procedures, but can never exceed 63, including the six pre-cataloged control program procedures. The maximum number of statements in a procedure is 255.

The following screen is displayed. Enter the name and title of the procedure.

```
-------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       |
 2 DISPLAY         |
 3 CREATE/COPY     | - ENTER NAME OF PROCEDURE TO BE CREATED ==> A
 4 ERASE           | - ENTER TITLE (UP TO 24 CHAR) ==> B
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
                   |
                   |
===>

F1:END  F2:MENU2  F3:ALARM
```

Once you have entered the name and the title, press SEND

- If you want to copy an existing procedure under the name you just entered, continue as described under “Copying a Procedure” on page 419.
- If you want to create a new procedure under the name you just entered, press SEND a second time and continue as described under “Creating a New Procedure” on page 419.

A The name is mandatory and must not exceed four characters. The first two characters must not be CP, which is reserved for pre-cataloged procedures.

B The title is optional, and must not exceed 24 characters. It may be used to give any information that would help you to identify the contents of the procedure.

Creating a New Procedure

To create a new procedure:

1. Press SEND a second time to display the instructions.
2. Select one of the instructions on the screen by entering the first letter of the instruction (for example, O for OSET). For descriptions of the instructions and their operands, see “Instructions and Operands” on page 424.
3. Press SEND.
4. Enter the appropriate operands when requested to do so.
5. When you have entered all the operands, press SEND.
   - If there is no error, select another instruction or press F4 to repeat the same instruction.
   - If there is an error, correct it, then press SEND.
6. When the procedure is complete, enter E. The End instruction must be the last one.
7. Once created a procedure may be:
   - Cataloged (see page 423)
   - Executed (see page 422)
   - Displayed (see page 417).

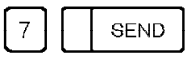
Copying a Procedure

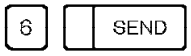
To copy a procedure:

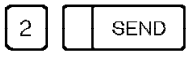
1. Enter the name of the procedure that you want to copy.
2. Press SEND.
3. Modify the procedure if you wish.
4. Press F6.
5. Enter 7 and press SEND to catalog the procedure.

Cataloging, Executing, and Displaying Procedures

Once created, a procedure may be:

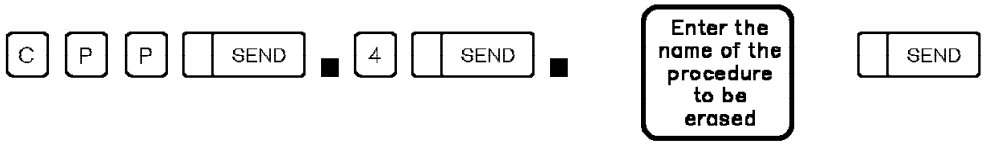
- Cataloged: 

- Executed: 

  If you create, erase, modify, execute, or display *another* procedure before you catalog the procedure just created, the latter is lost.
- Displayed: 

Erasing a Cataloged Procedure

Use ERASE to erase a cataloged procedure. The directory and the procedure file are automatically updated.

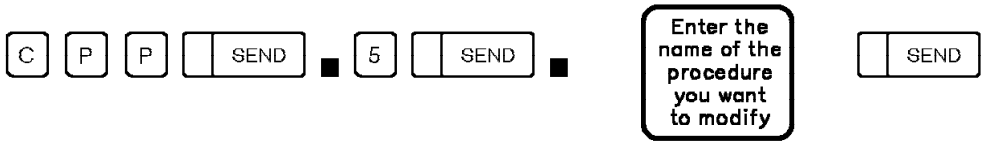


You cannot erase procedures starting with CP. You can erase *only* the procedures that *you* created and cataloged.

Modifying a Cataloged Procedure

Use MODIFY to delete, insert, or modify one or several instructions in a procedure already cataloged, except procedures starting with CP. If you want to modify a pre-cataloged procedure (CP), you must first copy it under another name (see “Creating or Copying a Procedure” on page 418).

Note: Before selecting MODIFY, you must know the step number of the instruction(s) that you want to modify.



The following screen is displayed:

```
-----------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       | CU02 LINE TEST
 2 DISPLAY         | - ENTER STEP NUMBER ==> A
 3 CREATE/COPY     | - SELECT ACTION: D=DELETE I=INSERT M=MODIFY ==> B
 4 ERASE           |
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
===>

F1:END  F2:MENU2  F3:ALARM          F6:END MODIFY
```

From the above screen:

- Enter the step number **A** of the instruction that you want to delete or modify, or after which you want to insert a new instruction.
- Select the action: **B** delete, insert, or modify.
- Press SEND.

You may also:

- Press F4 to modify the procedure that is already cataloged.
- Press F6 TO USE PROC FROM STORE: to modify the procedure that is in the 3745 storage.

The step you have just selected is displayed. If you selected the action:

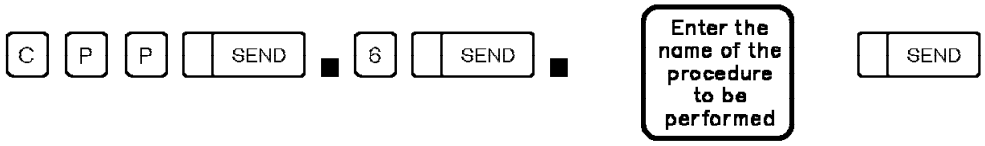
- DELETE: The selected step is immediately deleted. You cannot delete the last step of a procedure, which is always END. If you attempt to do so, the message INVALID INPUT is displayed.
- INSERT: You have to enter one or more instructions. To insert a step before the first step, enter the step number 0. The maximum number of instructions allowed in a procedure is 255.
- MODIFY: You have to modify the displayed instruction or replace it by a new instruction. (You cannot modify the last step of a procedure, which is always END.)

If you insert or delete one or several instructions, the T operands of the GOTO, HALT, WAIT, and LOOP instructions are automatically updated. Once the procedure is modified:

1. Press F6: END MODIFY, then
2. Catalog the procedure.

Executing a Cataloged Procedure

Use EXECUTE to execute a procedure that is cataloged or that you have just created or modified. The control program must be running and MOSS must be online.



The following screen is displayed:

```
------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       | CP04 START ADDR TRACE (NCP)
 2 DISPLAY         | - ENTER EXECUTION MODE
 3 CREATE/COPY     |   S=STEP BY STEP C=CONTINUOUS ==>
 4 ERASE           |
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
                   |
===>

F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

Select a mode of executive:

- Step-by-step mode: The procedure stops before executing each step, which is displayed on the function message line.
- Continuous mode: The procedure is executed automatically.

  In either mode, when an OSET, HALT, or WAIT instruction is encountered, the procedure stops and you are requested to take an action. These instructions are described under “Displaying Passwords.”

You may also press, if displayed:

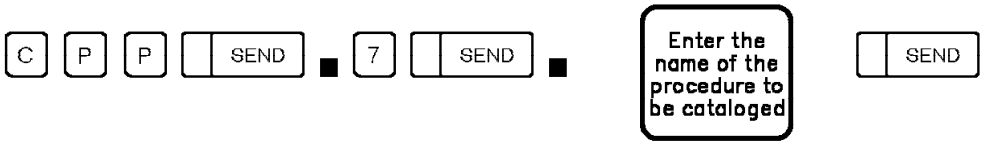
- F4 to execute the procedure that is already cataloged.
- F6 to execute the procedure that is in the 3745 storage.

While a procedure is being executed, the messages specified in the DISP instruction at creation time are displayed on the screen.

Cataloging a Procedure

Use CATALOG to catalog in the procedure file the procedure that you have created or modified in 3745 storage. The directory is updated automatically with the procedure name and title, and the date.

If you select the Terminate function before cataloging a procedure that you have just created or modified, the procedure is lost or the modifications are ignored.



When the procedure is cataloged, the following message is displayed:
PROCEDURE x CATALOGED

Instructions and Operands

Set Immediate Instruction (SETI)

```
SETI  D=xxxxxx  F=xx  I=x
```

Use the SETI instruction to call a control program function and provide data. The values that you enter in the SETI operands (D, F, and I) must not conflict with the control program requirements.

D=xxxxxx

To provide data to the control program function. xxxxxx is a string of up to 6 hexadecimal digits, which will be transferred to the CCU via the CCU X'71' input register (operator address/data entry register).

If you enter no value, the last one entered is taken.

F=xx

To call the control program function to be performed. xx is the decimal value from 1 to 16 (or S for 11, R for 12) to be transferred to the CCU via the CCU X'72' input register (operator display/function select register).

If you enter no value, the last one entered is taken.

I=Y or I=N

To request an operator level 3 Interrupt to signal to the control program that the specified function is to be performed. If you enter no value, the last one entered is taken.

Operator Set Instruction (OSET)

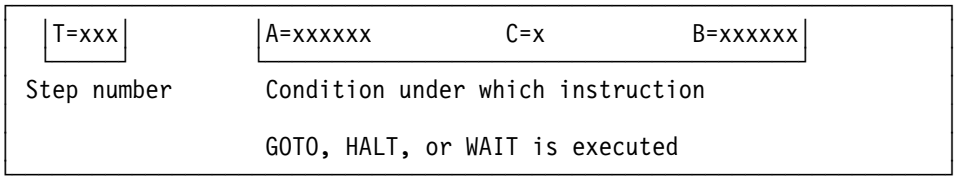
```
OSET  D=xxxxxx  F=xx  I=x
```

Use the OSET instruction every time you want to be prompted to call a control program function and/or enter data while executing a procedure. This allows you to enter, for example, a sub-channel number.

When the OSET instruction is read, you are invited to enter D, F, and/or I operands. If you enter no operands and press SEND, the current OSET operands are transmitted unchanged to the CCU.

The OSET operands are the same as those for the SETI instruction.

GOTO, HALT, and WAIT Instructions



Instructions GOTO, HALT, and WAIT have the same format and operands.

T=xxx

xxx is the target step number. If you do not specify a step number, the next one is assumed.

A=xxxxxx or no value

xxxxxx is the hexadecimal value expected in the CCU X'71' output register. Enter no value if you expect no specific value in the CCU X'71' output register. The contents of the CCU X'71' output register are displayed in MSA field f (see Appendix A).

C=x

& means conditions A and B.

! means condition A or B.

A means that the value entered in the A operand is to be compared to the X'71' output register contents masked by the value entered in the B operand.

B means that the value entered in the B operand is to be compared to the X'72' output register contents masked by the value entered in the A operand.

If you enter an instruction with no condition (that is, no value in operands A, B, and C), the instruction is executed unconditionally.

B=xxxxxx or no value

xxxxxx is the hexadecimal value expected in the CCU X'72' output register. Enter no value if you expect no specific value in the CCU X'72' output register. The contents of the CCU X'72' output registe are displayed in MSA field l.

GOTO Instruction

The GOTO instruction allows you to go to step xxx and execute it if the condition is fulfilled; otherwise the next step is executed.

GOTO with no value has no effect. The procedure continues in sequence.

HALT Instruction

The HALT instruction allows you to go to the step that you specified in operand T and to stop before executing that step, if the condition is fulfilled. When a HALT instruction is encountered, the following screen is displayed:

```
-------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       |STEP BY STEP      CU02 LINE TEST
 2 DISPLAY         |   ENTER STEP NUMBER OR  ==>
 3 CREATE/COPY     |   PRESS F4 F5 F6 OR SEND (EXECUTE CURRENT STEP: 001)
 4 ERASE           |
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
                   |001 HALT T= 002 A= 00000005 C= B= 0000000F
                   |F4:EXECUTE SETI F5:STOP EXECUTION F6:CHANGE EXEC MODE
===>
F1:END F2:MENU2 F3:ALARM
```

The current step is displayed on the function message line.

From the above screen:

To resume processing, do one of the following:

- Press SEND to execute the current step.
- Enter a step number. Then press SEND.
- Press F4 to request an additional SETI instruction.
- Press F5 to stop the function execution.
- Press F6 to change the execution mode. If the execution mode is step-by-step, it switches to continuous mode, and conversely. Then press SEND or any other displayed F key.

WAIT Instruction

The WAIT instruction allows you to wait until the condition is fulfilled, and then to go to the step that you specified in operand T. To get control of the operator console, press the BREAK key. The following screen is displayed:

```
-------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       |STEP BY STEP      CU02 LINE TEST
 2 DISPLAY         |   ENTER STEP NUMBER OR  ==>
 3 CREATE/COPY     |   PRESS F4 F5 F6 OR SEND (EXECUTE CURRENT STEP: 003)
 4 ERASE           |
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
                   |003 HALT T= 004 A= 0000003F C= B= 0000004F
                   |F4:EXECUTE SETI F5:STOP EXECUTION F6:CHANGE EXEC MODE
===>
F1:END  F2:MENU2  F3:ALARM
```

From the above screen:

To resume processing, do one of the following:

- Press SEND to return to wait state.
- Enter a step number. Then press SEND.
- Press F4 to request an additional SETI instruction.
- Press F5 to stop the function execution.
- Press F6 to change the execution mode. If the execution mode is step-by-step, it switches to continuous mode, and conversely. Then press SEND or any other displayed F key.

```
-------------------------------------------------------------------mm/dd/yy hh:mm
FUNCTION ON SCREEN: CONTROL PGM PROC
 1 DIRECTORY       |STEP BY STEP      CU02 LINE TEST
 2 DISPLAY         |   ENTER STEP NUMBER OR  ==>
 3 CREATE/COPY     |   PRESS F4 F5 F6 OR SEND (EXECUTE CURRENT STEP: 003)
 4 ERASE           |
 5 MODIFY          |
 6 EXECUTE         |
 7 CATALOG         |
                   |
                   |
                   |
                   |
                   |003 HALT T= 004 A= 0000003F C= B= 0000004F
                   |F4:EXECUTE SETI F5:STOP EXECUTION F6:CHANGE EXEC MODE
===>
F1:END  F2:MENU2  F3:ALARM
```

LOOP Instruction

```
LOOP  T=xxx  N=xxx
```

When it reaches this instruction, the procedure loops from this step to that specified in the T operand, for the number of times that you indicated in the N operand minus 1 (because the LOOP instruction is located at the end of the loop block).

The value specified in the T operand must be smaller than the step number of the LOOP instruction.

If a GOTO or a HALT instruction is within the range of steps covered by the LOOP instruction and branches to a step outside this range, the LOOP instruction is ended and the GOTO or HALT instruction is executed.

Nested LOOP instructions may give unpredictable results.

DISP Instruction

```
DISP  L=xxx  M=message
```

The DISP instruction allows you to display on the line specified in the L operand, the message specified in the M operand.

This message informs you of the progression of the procedure or asks you to perform specific actions.

A message remains on the screen until a new one is displayed on the same line or until you clear it.

To clear a message, enter another DISP instruction on the same line (same operand L) with no character for the M operand.

```
DISP L= 15 M=
```

Notes:

1. You cannot enter messages longer than 40 characters.
2. You cannot specify more than 50 messages (DISP instructions) in a procedure. This number does not include DISP instructions with blank characters.

END Instruction

The END instruction indicates the end of the procedure. It must be the last instruction of the procedure. This statement cannot be modified or erased.

Pre-Cataloged Control Program Procedures

Pre-cataloged procedures are procedures already cataloged on the controller disk when you receive your 3745. The names of pre-cataloged procedures always start with CP. You cannot modify or erase them.

For each procedure the detailed description may help you if you want to create a similar procedure or to copy the procedure under a different name and modify it.

If an *unintentional* loop occurs while executing a control program procedure, perform the following:

1. Re-IML MOSS (see the *3745 Basic Operations Guide*)
2. Correct the control program procedure using the 3745 procedure tools described in this section, and
3. Execute the procedure again.

The pre-cataloged procedures are:

CP01 - SDLC Test Frames (NCP only)
CP02 - 3270 BSC General Poll (NCP/EP)
CP03 - 2740 Start-Stop Poll (NCP/EP)
CP04 - Start Address Trace (NCP only)
CP05 - Stop Address Trace (NCP only)
CP06 - X.21 Switched Line Test (NCP only)
CP07 - Line Test End (NCP/EP)

Control program procedures use NCP or EP subroutines. Most of these subroutines are described in “Data Exchange (DEX)” on page 87. The subroutine identifier is the:

- First two characters of the D operand of each SETI and OSET instruction if the D operand is four characters long.
- Second and third characters of the D operand of each SETI and OSET instruction if the D operand is five characters long.

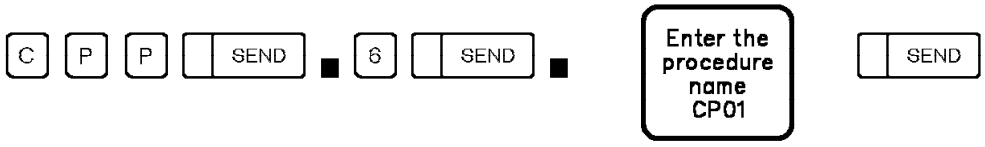
These identifiers are listed in columns xx of Table 13 on page 91 and Table 26 on page 115.

Example: SETI D= 051F3 F= 2 I= Y
SETI D= 51F3 F= 2 I= Y
Then the subroutine Load Transmit Buffer is used.

When an error occurs while executing a pre-cataloged control program procedure, the procedure stops and the error code is displayed in field l of the MSA. These codes are documented under the appropriate functions, in “Data Exchange (DEX)” on page 87.

CP01 - SDLC Test Frames (NCP)

Use this function to transmit SDLC test frames (command F3) from the 3745 to any SDLC link in your network.



Detailed Description

Table 56 (Page 1 of 2). CP01 Procedure

Step	Instructions	Comments
3	SETI D= **00000C** F=**07** I=**Y**	Set NCP mode.
4	GOTO T= **029** A= **000000**C= B=**000000**	If EP, go to step 29.
5	DISP L= **18** M=******SDLC TEST-FRAMES TO SDLC LINK *****	Display on line 18 text in operand M.
6	DISP L= **14** M=**CHANGE 'FFF' INTO THE NCP**	Display on line 14 text in operand M.
7	DISP L= **15** M=**LINE ADDRESS (HEX)**	Display on line 15 text in operand M.
8	OSET D= **0F20FF** F=**02** I=	Save line information in the LTS control block.
9	DISP L= **14** M=	Clear message displayed on line 14.
10	DISP L= **15** M=	Clear message displayed on line 15.
11	GOTO T= **029** A= **0000FF** C= **B** B= **000003**	The line is an EP line, go to step 29.
12	GOTO T= **017** A= **0000FF** C= **B** B= **000005**	The line is active, go to step 17.
13	GOTO T= **015** A= **00FF00** C= **B** B= **000000**	Errors, go to step 15.
14	SETI D= **004000** F= I=	Enable the line.
15	DISP L= **14** M=	Dummy message to increase delay.
16	GOTO T= **021** A= **00FF00** C=**B** B=**00FF00**	No error detected, go to step 21.
17	DISP L= **14** M= **ERROR (SEE LINE TEST FUNCTION)**	An error is detected during initialization. The error code is in MSA fields f and l. See Table 14 on page 97.

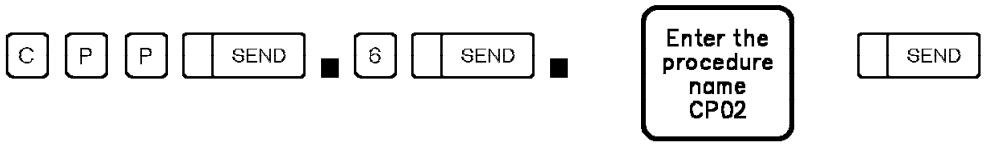
Table 56 (Page 2 of 2). CP01 Procedure

Step	Instructions	Comments
18	GOTO T= **030** A= C= B=	Go to step 30.
19	DISP L= **14** M= **LINE IS ACTIVE: (DEACTIVE)**	Display on line 14 text in operand M.
20	HALT T= **004** A= C= B=	Go to step 4 after the line is deactivated.
21	DISP L= **14** M= **ERROR (SEE LINE TEST FUNCTION)**	Same comment as STEP 015.
22	GOTO T= **030** A= C= B=	Go to step 30.
23	DISP L= **14** M=**CHANGE 'AA' TO SDLC STATION ADDRESS**	Display on line 14 text in operand M.
24	OSET D= **0067AA** F= I=	Load addressing character.
25	SETI D= **006210** F= I=	Set SDLC test mode.
26	GOTO T= **026** A= **00FFFF** C= **B** B= **000000**	No error, go to step 26.
27	GOTO T= **019** A= C= B	Error, go to step 19.
28	DISP L= **14** M= **TO END THE TEST, PRESS SEND**	Display on line 14 text in operand M.
29	OSET D= **005000** F= I=	End the line test.
30	GOTO T= **031** A= C= B=	Go to step 31 (end).
31	DISP L= **14** M= **INITIATED LINE IS SUPPORTED BY EP**	Display on line 14 text in operand M.
32	HALT T= **031** A= C= B=	Halt.
33	END	End of procedure.

CP02 - 3270 BSC General Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3745 to any IBM 3270 Information Display System in EBCDIC with BSC protocol. For a 3270 in ASCII, replace data in the D operands marked by an asterisk by appropriate data. To do so, copy and modify the procedure.

The CP02 procedure runs in EP environment as well as in an NCP or NCP/PEP environment.



Detailed Description

Table 57 (Page 1 of 4). CP02 Procedure

Step	Instructions	Comments
1	DISP L= **19** M=****** GENERAL POLL TO 3270 (BSC)******	Display on line 19 text in operand M.
2	SETI D= **00000C** F=**07** I=**Y**	Set NCP mode.
3	GOTO T= **030** A= **000000** C= B=**000000**	If EP, go to step 30.
4	DISP L= **12** M=**CHANGE 'FFF' INTO THE NCP**	Display on line 12 text in operand M.
5	DISP L= **13** M=**LINE ADDRESS (HEX)**	Display on line 13 text in operand M.
6	OSET D= **0F20FF** F=**02** I= **Y**	Save line information in the LTS control block.
7	DISP L= **12** M=	Clear message displayed on line 12.
8	DISP L= **13** M=	Clear message displayed on line 13.
9	GOTO T= **033** A= **0000FF** C= **B** B= **000003**	PEP line, go to step 33.
10	GOTO T= **014** A= **0000FF** C= **B** B= **000005**	Line is active, go to step 14.
11	GOTO T= **016** A= **00FF00** C= **B** B= **000000**	Line is available, go to step 16.
12	DISP L= **12** M= **ERROR (SEE LINE TEST FUNCTION)**	An error is detected during initialization. The error code is in MSA fields f and l. See Table 14 on page 97.
13	GOTO T= **027** A= C= B=	Go to step 27.

Table 57 (Page 2 of 4). CP02 Procedure

Step	Instructions	Comments
14	DISP L= **12** M= **LINE IS ACTIVE IN NCP. (DEACTIVE)**	Display on line 12 text in operand M.
15	GOTO T= **027** A= C= B=	Go to step 27.
16	DISP L= **12** M= **CHANGE 'AA' TO CU-POLLADDRESS (TWICE)**	Display on line 12 text in operand M.
17	OSET D= **0066AA** F= I=	Load polling character.
18	OSET D= **0066AA** F= I=	Load polling character.
19	SETI D= **00667F** F= I=	Load all-device poll address.
20	SETI D= **00667F** F= I=	Load all-device poll address.
21	SETI D= **00662D** F= I=	Load ENQ character.
22	SETI D= **004000** F= I=	Enable the line.
23	SETI D= **004A11** F= I=	Continuous polling.
24	GOTO T= **026** A=**0000FF** C=**B** B=**000000**	Go to step 26.
25	GOTO T= **012** A= C= B=	Go to step 12.
26	DISP L= **12** M= **-----LINE TEST IS RUNNING-----**	Display on line 12 text in operand M.
27	DISP L= **13** M= **TO END THE TEST, PRESS SEND**	Display on line 13 text in operand M.
28	OSET D= **005000** F= I=	End the line test.
29	GOTO T= **057** A= C= B=	Go to step 57.
30	DISP L= **12** M= **ERROR (SEE LINE TEST FUNCTION)**	An error is detected. The error code is in MSA fields f and l. See Table 14 on page 97 (NCP) or Table 27 on page 116 and Table 28 on page 116 (EP).
31	OSET D= **008DAA** F= I=	Display last message.
32	GOTO T= **054** A= C= B=	Go to step 54.
33	SETI D= **00000E** F= **07** I=	Set EP mode.

Table 57 (Page 3 of 4). CP02 Procedure

Step	Instructions	Comments
34	DISP L= **13** M= **CHANGE 'AA' TO CU-POLL ADDRESS (TWICE)**	Display on line 13 text in operand M.
35	SETI D= **000037** F= **05** I=	Load EOT character.
36	SETI D= **0000FF** F= I=	Load PAD.
37	SETI D= **000032** F= I=	Load SYN.
38	SETI D= **000032** F= I=	Load SYN.
39	SETI D= **0000AA** F= **05** I=	Load to poll address.
40	SETI D= **0000AA** F= **05** I=	Load to poll address.
41	SETI D= **00007F** F= I=	Load all-device poll.
42	SETI D= **00007F** F= I=	Load all-device poll.
43	SETI D= **00002D** F= I=	Load ENQ character.
44	SETI D= **000099** F= I=	Load end-of-buffer.
45	SETI D= **000110** F= I=	Load ACK bufffer 1.
46	SETI D= **000161** F= I=	Load ACK.
47	SETI D= **000199** F= I=	Load end buffer 1.
48	SETI D= **000437** F= I=	Load compare character EOT.
49	SETI D= **000903** F= I=	Load swap chatacter ETX.
50	DISP L= **13** M= **CHANGE 'AA' TO SUB-CHANNEL ADDRESS**	Display on line 13 text in operand M.
51	OSET D= **0080AA** F= I=	Enable line.
52	OSET D= **0020AA** F= I=	Transmit buffer.
53	GOTO T= **030** A= **200000** C= **A** B= **200000**	EP errors, go to step 30.
54	DISP L= **12** M= **TO END THE TEST**	Display on line 12 text in operand M.
55	OSET D= **008FAA** F= I=	End test and disable the line.

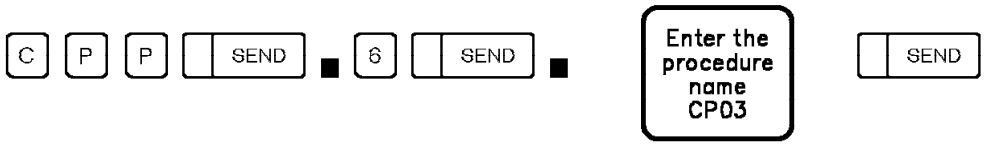
Table 57 (Page 4 of 4). CP02 Procedure

Step	Instructions	Comments
56	GOTO T= **030** A= **00FFFF** C= **A** B= **00FFFF**	Error, go to step 30.
57	END	End of procedure.

CP03 - 2740 Start-Stop Poll (NCP/EP)

Use this procedure to transmit a poll sequence from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in a network working with the same protocol.

CP03 runs in EP environment as well as in an NCP or NCP/PEP environment.



Detailed Description

Table 58 (Page 1 of 3). CP03 Procedure

Step	Instructions	Comments
1	DISP L= **19** M=****** S/S POLL TO 2740 WITH *****	Display on line 19 text in operand M.
2	SETI D= **00000C** F=**07** I=**Y**	Set control to NCP mode.
3	GOTO T= **030** A= **000000** C= B= **000000**	If EP, go to step 30.
4	DISP L= **12** M=**CHANGE 'FFF' INTO THE NCP**	Display on line 12 text in operand M.
5	DISP L= **13** M=**LINE ADDRESS (HEX)**	Display on line 13 text in operand M.
6	OSET D= **0F20FF** F=**02** I= **Y**	Save line information in the LTS control block.
7	DISP L= **12** M=	Clear message displayed on line 12.
8	DISP L= **13** M=	Clear message displayed on line 13.
9	GOTO T= **028** A= **0000FF** C= **B** B= **000003**	PEP line, go to step 28.
10	GOTO T= **014** A= **0000FF** C= **B** B= **000005**	Line is active, go to step 14.
11	GOTO T= **016** A= **00FF00** C= **B** B= **00FF00**	Line is active, go to step 16.
12	DISP L= **12** M= **ERROR (SEE LINE TEST FUNCTION)**	An error is detected during initialization. The error code is in MSA fields f and l. See Table 14 on page 97.
13	GOTO T= **025** A= C= B=	Go to step 25.
14	DISP L= **12** M= **LINE IS ACTIVE IN NCP. (DEACTIVE)**	Display on line 12 text in operand M.

Table 58 (Page 2 of 3). CP03 Procedure

Step	Instructions	Comments
15	GOTO T= **025** A= C= B=	Go to step 25.
16	DISP L= **12** M= **CHANGE 'AA' TO 2740 STATION ADDRESS**	Display on line 12 text in operand M.
17	OSET D= **0066AA** F= I=	Load the station address.
18	SETI D= **006640** F= I=	
19	SETI D= **004000** F= I=	Enable the line.
20	GOTO T= **019** A= **0000FF** C= **B** B= **000023**	Error, go to step 19.
21	SETI D= **004A11** F= I=	Receive mode.
22	GOTO T= **024** A= **00004A** C= & B= **000000**	Go to step 24.
23	GOTO T= **012** A= C= B=	Error, go to step 12.
24	DISP L= **12** M=**-----LINE TEST IS RUNNING-----**	Display on line 12 text inoperand M.
25	DISP L= **13** M= **TO END THE TEST, PRESS SEND**	Display on line 13 text in operand M.
26	OSET D= **005000** F= I=	End the line test.
27	GOTO T= **041** A= C= B=	Go to step 41.
28	SETI D= **00000E** F= **07** I=	Set EP mode.
29	SETI D= **008CFF** F= I=	
30	SETI D= **00001F** F= **05** I=	
31	DISP L= **13** M= **CHANGE 'AA' TO 2740 ADDRESS (PDF-CODE)**	Display on line 13 text in operand M.
32	OSET D= **0000AA** F= I=	Load the station address.
33	SETI D= **000001** F= I=	Load EOA character.
34	SETI D= **000099** F= I=	Load buffer-end.
35	SETI D= **00047C** F= I=	
36	DISP L= **13** M= **CHANGE 'AA' TO SUB-CHANNEL ADDRESS**	Display on line 13 text in operand M.

Table 58 (Page 3 of 3). CP03 Procedure

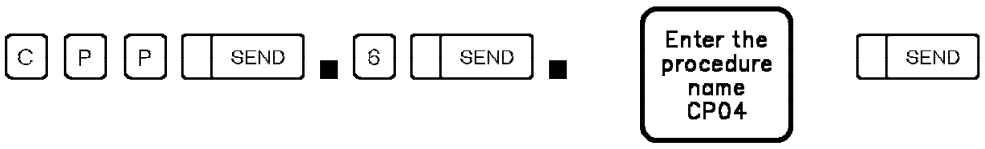
Step	Instructions	Comments
37	OSET D= **0080AA** F= I=	Enable the line.
38	OSET D= **0020AA** F= I=	Transmit buffer.
39	DISP L= **12** M= **TO END THE TEST**	Display on line 12 text in operand M.
40	OSET D= **008FAA** F= I=	End the line test.
41	END	End of procedure.

CP04 - Start Address Trace (NCP)

Use this procedure to debug TP problems by storing up to four register values or storage values in a trace table each time the address that you specified is accessed in a specific program level. To stop the address trace, use procedure CP05 or the CCU data exchange function.

To display the address trace table, see “Address Trace Table - Under NCP” on page 104.

You can use procedure CP04 only in an NCP or NCP/PEP environment if TRACE=YES is specified in the BUILD macro.



Detailed Description

Table 59 (Page 1 of 3). CP04 Procedure

Step	Instructions	Comments
1	SETI D= **00000C** F=**07** I=**Y**	Set NCP mode.
2	GOTO T= **026** A= **000000** C= & B= **000000**	If not NCP, go to step 26.
3	DISP L= **18** M=*****START ADDRESS TRACE*****	Display on line 18 text in operand M.
4	SETI D= **008002** F=**01** I=**Y**	Set on Allow Additional Register Range Bit (AARR).
5	SETI D= **000001** F=**01** I=**Y**	Set Address Trace function in NCP.
6	DISP L= **13** M=**ENTER DESIRED PGM LEVELS (1 - F)**	Display on line 13 text in operand M.

7	OSET D= F= I=	Set program levels. Enter in D= the program level (s) to be traced (X'1' to X'F'). It can be any combination of:
		`1... level 2`
		`.1.. level 3`
		`..1. level 4`
		`...1 level 5`

8	GOTO T= **019** A= **0FFFFF** C= **B** B= **03FFFF**	Error, go to step 19.
9	DISP L= **13** M=**ENTER STORAGE-ADDR IN 'D' + S IN 'F'**	Display on line 13 text in operand M.
10	DISP L= **14** M= **OR REG.-ADDR: R0R0 IN 'D' + R IN 'F'**	Display on line 14 text in operand M.

Table 59 (Page 2 of 3). CP04 Procedure

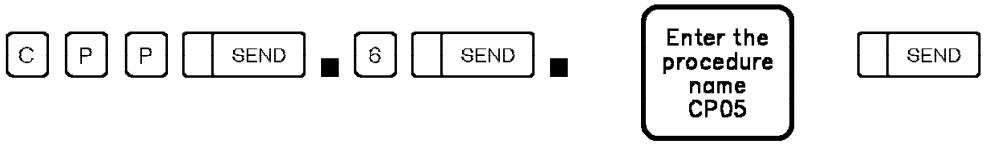
Step	Instructions	Comments
11	OSET D= F= I=	Enter in D= either the storage or the register address. (Enter the register address as r0r0: for register X'42' enter 4020). Enter in F= either S for storage or R for register.
12	GOTO T= **014** A= C= B=	Go to step 14.
13	GOTO T= **016** A= C= B=	Go to step 16.
14	LOOP T= **013** N= **004**	Four loops required to enter data.
15	GOTO T= **021** A= C= B=	All data entered, go to step 21 to continue.
16	DISP L= **13** M= **IF MORE VALUES TO ENTER, PRESS SEND**	Display on line 13 text in operand M.
17	DISP L= **14** M= **IF MORE VALUES TO ENTER STEP ===> 21**	Display on line 14 text in operand M.
18	HALT T= **009** A= C= B=	
19	DISP L= **13** M= **INVALID PGM-LEVEL VALUE ENTERED**	Display on line 13 text in operand M.
20	GOTO T= **006** A= C= B=	Go to step 06.
21	DISP L= **13** M=	Clear message on line 13.
22	DISP L= **14** M= ***ALL POSSIBLE VARIABLES ARE ENTERED***	Display on line 14 text in operand M.
23	SETI D= F= **06** I=	
24	SETI D= F= **03** I=	Start the trace.
25	GOTO T= **028** A= C= B=	Go to step 28.
26	DISP L= **13** M=***CP04 ISN'T SUPPORTED BY EP***	Display on line 13 text in operand M.
27	HALT T= **031** A= C= B=	
28	DISP L= **13** M=**ADDR: TRACE IS NOW ACTIVE, SET 'AC' WITH**	Display on line 13 text in operand M.
29	DISP L= **14** M= **LEVEL 1 INTERR. OPTION (CCU:SAC)**	Display on line 13 text in operand M.
30	HALT T= **031** A= C= B=	

Table 59 (Page 3 of 3). CP04 Procedure

Step	Instructions	Comments
31	END	End of procedure.

CP05 - Stop Address Trace (NCP)

Use this procedure to stop an address trace. You can use procedure CP05 only in an NCP or NCP/PEP environment. You can execute CP05 only if you already executed procedure CP04 - Start Address Table.



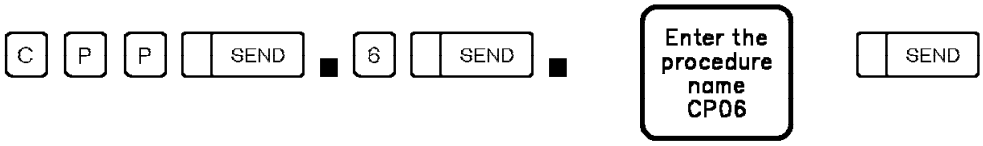
Detailed Description

Table 60. CP05 Procedure

Step	Instructions	Comments
1	SETI D= **00000** F=**07** I=**Y**	Set NCP mode.
2	GOTO T= **009** A= **000000** C= B= **000000**	If EP, go to step 9.
3	DISP L= **18** M= ******STOP ADDRESS TRACE******	Display on line 18 text in operand M.
4	SETI D= F=**06** I= **Y**	Stop the Address Trace function.
5	SETI D= **000002** F=**01** I=**Y**	Set off the Allow Additional Register Range (AARR) bit.
6	DISP L= **13** M=**THE ADDRESS TRACE IS NOW STOPPED**	Display on line 13 text in operand M.
7	DISP L= **14** M=**CANCEL AC (FUNCTION RAC)**	To cancel the Address Compare, select the RAC function. **Note:** This action is required only if you selected an Address Compare.
8	HALT T= **011** A= C= B=	Go to step 11 (end).
9	DISP L= **13** M= ***CP05 ISN'T SUPPORTED BY EP***	Display on line 13 text in operand M.
10	HALT T= **011** A= C= B=	Go to step 11 (end).
11	END	End of procedure.

CP06 - X.21 Switched Line Test (NCP)

Use this procedure to transmit test frames.



Detailed Description

Table 61 (Page 1 of 5). CP06 Procedure

Step	Instructions	Comments
1	SETI D= **00000C** F=**07** I=**Y**	Set NCP mode.
2	GOTO T= **005** A= **000000** C= B= **00000C**	If NCP, go to step 5.
3	DISP L= **18** M=**CP06 CANNOT BE PERFORMED BY EP**	Display message on line 18.
4	HALT T= **086** A= C= B=	EP mode, go to step 86 and halt.
5	DISP L= **18** M=******X.21 SWITCHED LINE TEST******	Display name of the procedure on line 18.
6	GOTO T= **010** A= C= B=	Go to step 10.
7	DISP L= **16** M=	Clear message on line 16.
8	DISP L= **15** M=	Clear message on line 15.
9	DISP L= **14** M=	Clear message on line 14.
10	DISP L= **13** M=**LINE ADDRESS SELECTION**	Display message on line 13.
11	DISP L= **14** M=**CHANGE THE 'FFF' INTO NCP**	Display message on line 14.
12	DISP L= **15** M=**LINE ADDRESS (HEX)**	Display on line 15 text in operand M.
13	OSET D= **0F20FF** F= **02** I=	Enable the line test.
14	DISP L= **14** M=	Clear message on line 14.
15	DISP L= **15** M=	Clear message on line 15.
16	GOTO T= **030** A= **00FF00** C= **B** B=**00FF00**	No error detected, go to step 30.

Table 61 (Page 2 of 5). CP06 Procedure

Step	Instructions	Comments
17	GOTO T= **021** A= **0000FF** C= **B** B= **000003**	EP line, go to step 21.
18	GOTO T= **023** A= **0000FF** C=**B** B= **000005**	The line is active, go to step 23.
19	DISP L= **14** M=**LINE INIT. ERROR, SEE X71/X72 IN MSA**	An error is detected during the initialisation of the line. The error code is displayed in MSA field I. See Table 14 on page 97.
20	GOTO T= **024** A= C= B=	Go to step 24.
21	DISP L= **14** M= **SELECTED LINE IS SUPPORTED BY EP**	This message is displayed only in a PEP environment when the line is supported by EP.
22	GOTO T= **024** A= C= B=	Go to step 24.
23	DISP L= **14** M= **LINE IS ACTIVE: DEACTIVATE IT FROM HOST**	Display message on line 14.
24	DISP L= **15** M= **ENTER STEP NUMBER 81 TO TERMINATE, OR**	Display on line 15.
25	DISP L= **16** M= **PRESS SEND TO SELECT ANOTHER LINE**	Display message on line 16.
26	HALT T= **007** A= C= B=	Go to step 7 and halt.
27	DISP L= **16** M=	Clear message on line 16.
28	DISP L= **15** M=	Clear message on line 15.
29	DISP L= **14** M=	Clear message on line 14.
30	DISP L= **13** **M=DIAL NUMBER LOADING (2 TO 15 DIGITS)**	Display message on line 13.
31	DISP L= **14** M= **REPLACE BY DIAL DIGIT**	Display message on line 14.
32	OSET D= **00470E** F= I=	Load one dial digit.
33	DISP L= **14** M=	Clear message on line 14.
34	GOTO T= **037** A= **00FF00** C= **B** B= **00FF00**	Go to step 37.
35	DISP L= **14** M=**DIAL DIGIT ERROR, SEE X71/X72 IN MSA**	Display message on line 14.
36	HALT T= **037** A= C= B=	Go to step 37 and halt.

Table 61 (Page 3 of 5). CP06 Procedure

Step	Instructions	Comments
37	DISP L= **14** M= **IF ANOTHER DIGIT, PRESS SEND**	Display message on line 14.
38	DISP L= **15** M= **OTHERWISE, ENTER STEP NUMBER 43**	Display message on line 15.
39	HALT T= **038** A= C= B=	Go to step 38 and halt.
40	DISP L= **15** M=	Clear message on line 15.
41	DISP L= **14** M=	Clear message on line 14.
42	GOTO T= **031** A= C= B=	Go to step 31.
43	DISP L= **15** M=	Clear message on line 15.
44	DISP L= **14** M=	Clear message on line 14.
45	SETI D= **00470F** F= I=	Indicate that the last digit has been entered.
46	DISP L= **13** M=**SDLC STATION ADDRESS SELECTION**	Display message on line 13.
47	DISP L= **14** M=**REPLACE AA BY SDLC ADDRESS**	Display message on line 14.
48	OSET D= **0067AA** F= I=	Load addressing characters.
49	DISP L= **14** M=	Clear message on line 14.
50	DISP L= **13** M=**DIAL OPERATE (SET MODE AND DIAL ISSUED)**	Display message on line 13.
51	SETI D= **004800** F= I=	Issue a Set mode and Dial to the line and complete the connection using the digits entered on step 36.
52	DISP L= **17** M=	Clear message on line 17. This instruction is used to delay the dial operate test.
53	GOTO T= **062** A= **00FF00** C=**B** B= **00FF00**	No error detected, go to step 62.
54	DISP L= **14** M=**DIAL OPERATE ERROR, SEE X71/X72 IN MSA**	The error code is displayed in field l of the MSA. See Table 14 on page 97.
55	HALT T= **054** A= C= B=	Go to step 56 and halt.
56	SETI D= **004D00** F= I=	Display LTS pointer address in MSA field l.

Table 61 (Page 4 of 5). CP06 Procedure

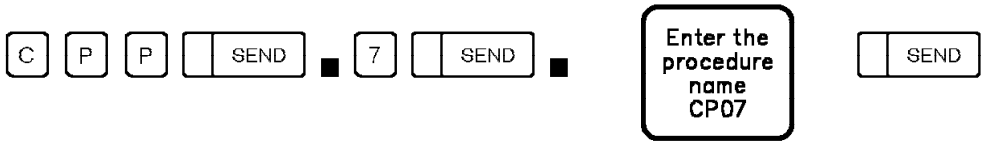
Step	Instructions	Comments
57	DISP L= **14** M= **USE CCU FNCT DLO TO DISPLAY LTS, SEE X72**	Select the display Long function to display the LTS block. The address of the LTS pointer is displayed in MSA field I.
58	HALT T= **073** A= C= B=	Go to step 75 and halt.
59	DISP L= **16** M=	Clear message on line 16.
60	DISP L= **15** M=	Clear message on line 15.
61	DISP L= **14** M=	Clear message on line 14.
62	DISP L= **13** M=**SDLC TEST FRAME TRANSMISSION**	Clear message on line 13.
63	SETI D= **006200** F= I=	Transmit on SDLC test frame to the station selected in step 48.
64	GOTO T= **069** A= **00FFFF** C= **B** B= **000000**	No error, go to step 69.
65	DISP L= **14** M= **TEST FRAME ERROR, SEE X'71/X72' IN MSA**	The error code is displayed in field I of the MSA. See Table 14 on page 97.
66	HALT T= **065** A= C= B=	Go to step 67 and halt.
67	DISP L= **14** M=	Clear message on line 14.
68	GOTO T= **070** A= C= B=	Go to step 70.
69	SETI D= **005F00** F= I=	End the SDLC test frame transmission but not the line test.
70	DISP L= **13** M= **X.21 DTE CLEAR REQUEST**	Display message on line 13.
71	SETI D= **005D00** F= I=	Issue an X.21 DTE clear request to the line without ending the line test.
72	GOTO T= **076** A= **00FF00** C= **B** B= **00FF00**	No error, go to step 76.
73	DISP L= **14** M= **X.21 DTE CLEAR ERROR, SEE X71/72 IN MSA**	The error code is displayed in field I of the MSA. See Table 14 on page 97.
74	HALT T= **073** A= C= B=	Go to step 75 and halt.
75	DISP L= **14** M=	Clear message on line 14.

Table 61 (Page 5 of 5). CP06 Procedure

Step	Instructions		Comments
76	DISP L= **13**	M=**PRESS SEND TO TERMINATE OR ENTER STEP**	Display message on line 13.
77	DISP L= **14**	M=**- 59 TO LOOP ON SAME STATION (IF DIALED)**	Display message on line 14.
78	DISP L= **15**	M=**- 27 TO TEST A STATION ON SAME LINE**	Display message on line 15.
79	DISP L= **16**	M=**- 7 TO TEST A STATION ON ANOTHER LINE**	Display message on line 16.
80	HALT T= **079**	A= C= B=	Go to step 85 and halt.
81	DISP L= **16**	M=	Clear message on line 16.
82	DISP L= **15**	M=	Clear message on line 15.
83	DISP L= **14**	M=	Clear message on line 14.
84	DISP L= **13**	M=	Clear message on line 13.
85	SETI D= **005000**	F= I=	End the Line Test function.
86	DISP L= **18**	M=	Clear procedure name displayed on line 18.
87	END		End of procedure.

CP07 - Line Test End (NCP/EP)

Use this function to end any active line test (if needed).



Detailed Description

Table 62. CP07 Procedure

Step	Instructions	Comments
1	DISP L= **18** M=***** LINE TEST END (NCP/PEP)**	Display on line 18 bit in operand M.
2	SETI D= **000000C** F=**07** I= **Y**	Set NCP mode.
3	GOTO T= **008** A= **00000C** C= B=**00000C**	If NCP, go to step 8.
4	DISP L= **13** M=**CHANGE 'AA' TO SUBCHANNEL ADDRESS**	Display on line 13 text in operand M.
5	OSET D= **008FAA** F=**05** I=	End the line test.
6	DISP L= **13** M=	Clear message on line 13.
7	GOTO T= **012** A= C= B=	Go to step 12.
8	DISP L= **13** M= **TO END THE FUNCTION, PRESS SEND**	Display on line 13 text in operand M.
9	HALT T= **010** A= C= B=	Go to step 10 and halt.
10	DISP L= **13** M=	Clear message on line 13.
11	SETI D= **005000** F= **02** I=	End the line test.
12	DISP L= **18** M=	Clear message on line 18.
13	END	End of procedure.

Examples of Control Program Procedure Creation

The following pages show you how to create five control program procedures:

FE01 - Install a ZAP (NCP or NCP/PEP)

CE01 - Text to 3270 - BSC in EBCDIC (NCP)

CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

CE03 - Text to 2740 - start-stop (NCP)

CE04 - Text to 2740 - start-stop (EP, PEP)

These procedures use several NCP and EP subroutines. Most of these subroutines are described in Table 13 on page 91 and Table 26 on page 115. The subroutine identifier is the first two characters of the D operand of each SETI and OSET instruction.

Example:

```
SETI   D= 0032  F= 5  I= Y
Load Transmit Buffer 1 subroutine (X'00')
```

FE01 - Install a ZAP (NCP or NCP/PEP)

Create this procedure at ZAP installation in NCP.

Requirements:

- NCP with or without PEP
- BSC line protocol
- EBCDIC line code.

Table 63 (Page 1 of 2). Install a ZAP (NCP or NCP/PEP)

Step	Procedure	Comments
1	C P P SEND ■ 3 SEND	To select CREATE.
2	- ENTER NAME OF PROCEDURE TO BE CREATED==>	Enter FE01.
3	- ENTER TITLE (UP TO 24 CHAR)==>	
4	SEND Twice	
5	**If** - NCP, go to step 9.	
6	**If** - NCP/PEP, go to next step.	
7	S SEND	SETI instruction.
8	SETI D=**C** F=**7** I=**Y** SEND	In NCP/PEP environment, you have to switch to NCP mode.
9	**To store** - halfwords, go to step 20.	
10	**To store** - bytes, go to next step.	
11	F4 ■ SETI D=**3** F=**1** I=**Y** SEND	Byte mode.
12	F4 ■ SETI D=**xxxxx** F=**2** I=**Y** SEND	**xxxxxx** is the storage address right-justified.
13	F4 ■ SETI D=**xx** F=**3** I=**Y** SEND	**xx** is the byte to be stored.
14	**If** - more consecutive bytes, go to 13.	
15	**If** - no more consecutive bytes, go to next step.	
16	**If** - more non-consecutive bytes, go to step 12.	
17	**If** - no-more bytes, go to next step.	

Table 63 (Page 2 of 2). Install a ZAP (NCP or NCP/PEP)

Step	Procedure	Comments
18	**If** - no more data, go to step 29.	
19	**If** - more data but in halfwords, go to next step.	
20	F4 ■ SETI D=**4** F=**1** I=**Y** SEND	Halfword mode.
21	F4 ■ SETI D=**xxxxxx** F=**2** I=**Y** SEND	**xxxxxx** is the storage address right-justified.
22	F4 ■ SETI D=**xxxx** F=**3** I=**Y** SEND	**xxxx** is the halfword to be stored.
23	**If** - more consecutive halfwords, go to step 22.	
24	**If** - no more consecutive halfwords, go to next step.	
25	**If** - more non-consecutive halfwords, go to step 21.	
26	**If** - no more halfwords to store, go to next step.	
27	**If** - more data but in bytes, go to step 11.	
28	**If** - no more data (all data stored), go to next step.	
29	D SEND	DISP instruction.
30	L = **12** M = **ZAP xxx IS NOW INSTALLED** **PRESS SEND TO END** SEND	To display on line 12 text in operand M.
31	O SEND	OSET instruction.
32	SETI D= F=**6** I=**Y** SEND	To end the dynamic store function. Enter no value in D.
33	E SEND	To end the procedure. (Do not forget to catalog the procedure.)

CE01 - Text to 3270 - BSC in EBCDIC (NCP)

Create this procedure to transmit text messages from the 3745 to any 3270 with BSC protocol.

Requirements:

- NCP line
- BSC line protocol
- EBCDIC line code.

Table 64 (Page 1 of 3). CE01 - Text to 3270 - BSC in EBCDIC (NCP)

Step	Procedure	Comments
1	C P P SEND . 3 SEND	To select CREATE.
2	- ENTER NAME OF PROCEDURE TO BE CREATED==>	Enter CE01.
3	- ENTER TITLE (UP TO 24 CHAR)==>	
4	SEND Twice	
5	**If** - no display of title line, go to step 8. - display of title line, go to step.	
6	D SEND	DISP instruction.
7	L=**12** M=**TEXT TO 3270** SEND	To display the title. 'TEXT TO 3270' is an example of title line.
8	**If** - NCP environment, go to step 11. - PEP environment, go to next step.	
9	S SEND	
10	SETI D=**C** F=**7** I=**Y** SEND	In PEP environment to switch to NCP mode.
11	D SEND	DISP instruction.
12	L=**15** M=**CHANGE FFF TO NCP HEX LINE ADDRESS** SEND	To display on line 15 text in operand M.
13	O SEND	OSET instruction.
14	SETI D=**0F20FF** F=**2** I=**Y** SEND	To enter the NCP line address.
15	D SEND	DISP instruction.
16	L=**15** M=**AA TO 3270 POLL ADDRESS TWICE** SEND	To display on line 15 text in operand M.

Table 64 (Page 2 of 3). CE01 - Text to 3270 - BSC in EBCDIC (NCP)

Step	Procedure	Comments
17	O SEND	OSET instruction.
18	SETI D=**066AA** F=**2** I=**Y** SEND	To enter 3270 CU poll address.
19	F4 SEND	To repeat and transmit previous OSET instruction unchanged.
20	S SEND	
21	SETI D=**0667F** F=**2** I=**Y** SEND	To enter all-device=poll address (X'7F').
22	F4 SEND	To repeat and transmit previous SETI instruction unchanged.
23	SETI D=**0662D** F=**2** I=**Y** SEND	To enter inquiry character ENQ (X'2D').
24	D SEND	DISP instruction.
25	L= **15** M= **CHANGE AA TO CU-SELECTION ADDR TWICE** SEND	To display on line 15 text in operand M.
26	O SEND	OSET instruction.
27	SETI D=**067AA** F=**2** I=**Y** SEND	To enter 3270 CU-select address.
28	F4 SEND	To repeat and transmit previous OSET instruction unchanged.
29	D SEND	DISP instruction.
30	L= **15** M= **CHANGE AA TO DEVICE SELECTION ADDR TWICE** SEND	To display on line 15 text in operand M.
31	O SEND	OSET instruction.
32	SETI D=**067AA** F=**2** I=**Y** SEND	To enter 3270 dev-select address.
33	F4 SEND	To repeat previous and transmit OSET instruction unchanged.
34	S SEND	
35	SETI D=**0672D** F=**2** I=**Y** SEND	To enter enquiry character ENQ (X'2D').

Table 64 (Page 3 of 3). CE01 - Text to 3270 - BSC in EBCDIC (NCP)

Step	Procedure	Comments
36	F4 ■ SETI D=**5800D** F=**2** I=**Y** SEND	To set transmit buffer offset X'00'.
37	F4 ■ SETI D=**5127** F=**2** I=**Y** SEND	To enter ESC (X'27').
38	F4 ■ SETI D=**51xx** F=**2** I=**Y** SEND	To enter text (first enter 3270 wcc character) **xx**= data byte of text.
39	**If** - more characters to enter, go to step 38. - no more characters to enter, go to next step.	
40	F4 ■ SETI D=**4000** F= **2** I= **Y** SEND	To enable the line.
41	F4 ■ SETI D=**4A10** F= **2** I= **Y** SEND	To poll the 3270 and monitor for response.
42	F4 ■ SETI D=**4F10** F=**2** I= **Y** SEND	To transmit the message text.
43	D SEND	DISP instruction.
44	L= **15** M= **TO END THE TEST PRESS SEND** SEND	To display on line 15 text in operand M.
45	O SEND	OSET instruction.
46	F4 ■ SETI D=**5000** F=**2** I=**Y** SEND	To wait for operator's response.
47	E SEND	End of procedure. (Do not forget to catalog the procedure.)

CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

Create this procedure to transmit a text message from the 3745 to any 3270 in your network.

Requirements:

- EP or PEP line
- BSC line protocol
- EBCDIC line code.

Table 65 (Page 1 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

Step	Procedure	Comments
1	C P P SEND ■ 3 SEND	To select CREATE.
2	- ENTER NAME OF PROCEDURE TO BE CREATED==>	Enter CE02.
3	- ENTER TITLE (UP TO 24 CHAR)==>	
4	SEND Twice	
5	**If** - no display of title line, go to step 9.	
6	**If** - display of title line, go to next step	
7	D SEND	DISP instruction.
8	L=**12** F=**TEXT TO 3270** SEND	To display the title. 'TEXT TO 3270' is an example of title line.
9	S SEND	
10	SETI D=**E** F=**7** I=**Y** SEND	To switch to EP mode.
11	S SEND	
12	SETI D=**0037** F=**5** I=**Y** SEND	To enter EOT character (X'37') into buffer 1.
13	F4 ■ SETI D=**00FF** F=**5** I=**Y** SEND	To enter PAD character (X'FF') into buffer 1.
14	F4 ■ SETI D=**0032** F=**5** I=**Y** SEND	To enter SYNC character (X'32') into buffer 1.
15	F4 SEND	To repeat and transmit previous SETI instruction unchanged.
16	D SEND	DISP instruction.

Table 65 (Page 2 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

Step	Procedure	Comments
17	L=**15** M=**CHANGE AA TO CU-SELECT-ADDRESS** SEND	To display in line 15 text in operand M.
18	O SEND	OSET instruction.
19	SETI D=**00AA** F=**5** I=**Y** SEND	To enter CU-select test address into buffer 1.
20	F4 SEND	To repeat and transmit previous OSET instruction unchanged.
21	D SEND	DISP instruction.
22	L=**15** M=**CHANGE FF TO DEV-SELECT-ADRESS** SEND	To display on line 15 text in operand M.
23	O SEND	OSET instruction.
24	SETI D=**00FF** F=**5** I=**Y** SEND	To enter dev_select address into buffer 1.
25	F4 SEND	To repeat and transmit previous OSET instruction unchanged.
26	S SEND	
27	SETI D=**002D** F=**5** I=**Y** SEND	To enter ENQ character (X'2D').
28	F4 ■ SETI D=**0099** F=**5** I=**Y** SEND	To enter end-buffer 1 character.
29	F4 ■ SETI D=**0102** F=**5** I=**Y** SEND	To enter STX character (X'02') into buffer 2.
30	F4 ■ SETI D=**0127** F=**5** I=**Y** SEND	To enter ESC character (X'27') into buffer 2.
31	F4 ■ SETI D=**01F1** F=**5** I=**Y** SEND	To enter Erase/Write command (X'F1') into buffer 2.
32	F4 ■ SETI D=**01C2** F=**5** I=**Y** SEND	To enter WCC (X'C2') into buffer 2.
33	F4 ■ SETI D=**01xx** F=**5** I=**Y** SEND	To enter text into buffer 2. xx=data byte of text (up to 15 characters).
34	**If** - more data bytes, go to step 33.	
35	**If** - no more data bytes, go to next step.	
36	S SEND	

Table 65 (Page 3 of 3). CE02 - Text to 3270 - BSC in EBCDIC (EP, PEP)

Step	Procedure	Comments
37	SETI D=**0103** F=**5** I=**Y** [SEND]	To enter ETX character (X'03') into buffer 2.
38	[F4] ■ SETI D=**0199** F=**5** I=**Y** [SEND]	To enter end-buffer 2 characters.
39	[F4] ■ SETI D=**0861** F=**5** I=**Y** [SEND]	To enter ACK 1 (X'61') or swap character 1.
40	[F4] ■ SETI D=**0970** F=**5** I=**Y** [SEND]	To enter ACK 0 (X'70') or swap character 2.
41	[D] [SEND]	DISP instruction.
42	L=**15** L=**CHANGE AA TO SUB-CHANNEL ADDRESS**	To display on line 15 text in operand M.
43	[O] [SEND]	OSET instruction.
44	SETI D=**20AA** F=**5** I=**Y** [SEND]	To start the line test on sub-channel AA.
45	[D] [SEND]	DISP instruction.
46	L=**14** M=**TO END THE TEST, PRESS SEND** [SEND]	
47	[O] [SEND]	OSET instruction.
48	SETI D=**8FAA** F=**5** I=**Y** [SEND]	To wait for operator's display.
49	[E] [SEND]	End of procedure. (Do not forget to catalog the procedure.)

CE03 - Text to 2740 - Start-Stop (NCP)

Create this procedure to transmit a text message from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in your network.

Requirements:

- NCP
- Start-stop line protocol
- EBCDIC line code
- 2740 with station control.

Table 66 (Page 1 of 2). CE03 - Text to 2740 - Start-Stop (NCP)

Step	Procedure	Comments
1	C P P SEND . 3 SEND	To select CREATE.
2	- ENTER NAME OF PROCEDURE TO BE CREATED==>	Enter CE03.
3	- ENTER TITLE (UP TO 24 CHAR)==>	
4	SEND Twice	
5	**If** - no display of title line, go to step 9.	
6	**If** - display of title line, go to next step.	
7	D SEND	DISP instruction.
8	L=**12** L=**TEXT TO 2740** SEND	To display the title. 'TEXT TO 2740' is an example of title line.
9	S SEND	
10	SETI D=**C** F=**7** I=**Y** SEND	To switch to NCP mode.
11	D SEND	DISP instruction.
12	L=**15** L=**CHANGE FFF TO NCP HEX LINE ADDRESS** SEND	To display on line 15 text in operand M.
13	O SEND	OSET instruction.
14	SETI D=**0F20FF** F=**2** I=**Y** SEND	To enter NCP line address.
15	S SEND	
16	SETI D=**5800** F=**2** I=**Y** SEND	To set transmit buffer offset (X'00').

Table 66 (Page 2 of 2). CE03 - Text to 2740 - Start-Stop (NCP)

Step	Procedure	Comments
17	F4 ■ SETI D=**511F** F=**2** I=**Y** SEND	To load circle c (X'1F') into transmit buffer.
18	F4 ■ SETI D=**5137** F=**2** I=**Y** SEND	To load circle c (X'37') into transmit buffer.
19	D SEND	DISP instruction.
20	L=**15** M=**CHANGE AA TO 2740 ADDRESS** SEND	
21	O SEND	OSET instruction.
22	SETI D=**51AA** F=**2** I=**Y** SEND	To enter 2740 station address.
23	S SEND	SETI instruction.
24	F4 ■ SETI D=**5101** F=**2** I=**Y** SEND	To load EOA character (X'01') into buffer.
25	F4 ■ SETI D=**51xx** F=**2** I=**Y** SEND	To load data into buffer **xx**=data byte.
26	**If** - more data bytes, go to step 25.	
27	**If** - no more data bytes, go to next step.	
28	F4 ■ SETI D=**4000** F=**2** I=**Y** SEND	To enable the line.
29	F4 ■ SETI D=**4F10** F=**2** I=**Y** SEND	To start transmitting data.
30	D SEND	DISP instruction.
31	L=**15** L=**TO END THE TEST PRESS SEND** SEND	To display on line 15 text in operand M.
32	O SEND	OSET instruction.
33	SETI D=**5000** F=**2** I=**Y** SEND	To wait for operator's response to stop the function.
34	E SEND	End of procedure. (Do not forget to catalog the procedure.)

CE04 - Text to 2740 - Start-Stop (EP, PEP)

Create this procedure to transmit a text message from the 3745 to any IBM 2740 Communications Terminal or other start-stop terminal in your network.

Requirements:

- EP or PEP line
- Start-stop line protocol
- EBCDIC line code
- 2740 with station control.

Table 67 (Page 1 of 2). CE04 - Text to 2740 - Start-Stop (EP, PEP)

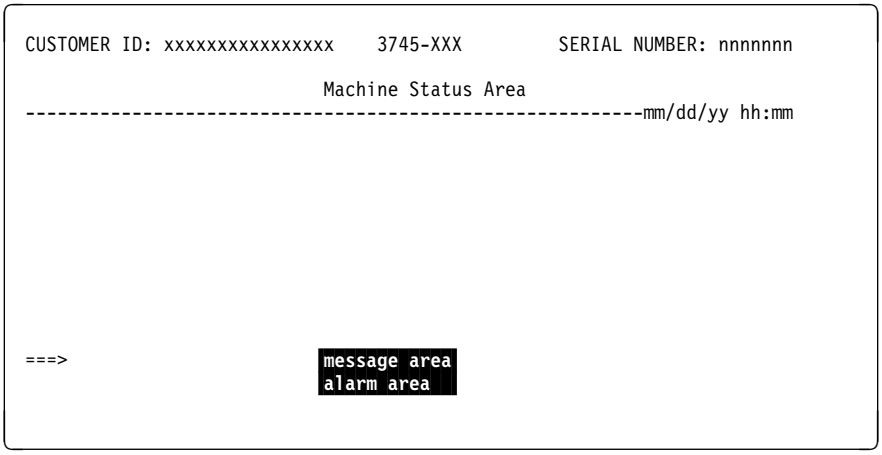
Step	Procedure	Comments
1	C P P SEND ■ 3 SEND	To select CREATE.
2	- ENTER NAME OF PROCEDURE TO BE CREATED	ENTER CE04.
3	- ENTER TITLE (UP TO 24 CHAR)	
4	SEND Twice	
5	**If** - no display of title line, go to step 9.	
6	**If** - display of title line, go to next step.	
7	D SEND	DISP instruction.
8	L=**12** L=**TEXT TO 2740** SEND	To display the title. 'TEXT TO 2740' is an example of title line.
9	S SEND	
10	SETI D=**E** F=**7** I=**Y** SEND	To switch to EP mode.
11	F4 ■ SETI D=**001F** F=**5** I=**Y** SEND	To load circle c (X'1F') into buffer 1.
12	F4 ■ SETI D=**0037** F=**5** I=**Y** SEND	To load circle c (X'37') into buffer 1.
13	D SEND	DISP instruction.
14	L=**15** L=**CHANGE AA TO 2740 ADDRESS** SEND	To display on line 15 text in operand M.
15	O SEND	OSET instruction.
16	SETI D=**0=00AA** F=**5** I=**Y** SEND	To enter 2740 station address.

Table 67 (Page 2 of 2). CE04 - Text to 2740 - Start-Stop (EP, PEP)

Step	Procedure	Comments
17	S SEND	
18	SETI D=**0001** F=**5** I=**Y** SEND	To load EOA character (X'01') into buffer 1.
19	F4 ■ SETI D=**0099** F=**5** I=**Y** SEND	To load end-of-buffer 1 character.
20	F4 ■ SETI D=**0116** F=**5** I=**Y** SEND	To load into buffer 2.
21	F4 ■ SETI D=**01xx** F=**5** I=**Y** SEND	To load text into buffer 2. Maximum number of bytes that can be loaded is 18. xx=data byte.
22	D SEND	DISP instruction.
23	**If** - more data bytes (max. 18), go to step 21.	
24	**If** - no more bytes, go to next step.	
25	F4 ■ SETI D=**011F** F=**5** I=**Y** SEND	To load circle c (X'1F') into buffer 2.
26	F4 ■ SETI D=**0199** F=**5** I=**Y** SEND	To load end-of-buffer 2 character.
27	F4 ■ SETI D=**081F** F=**5** I=**Y** SEND	To enter the swap character 2 (X'1F').
28	F4 ■ SETI D=**0976** F=**5** I=**Y** SEND	To enter the swap character 2.
29	D SEND	DISP instruction.
30	L=**15** M=**CHANGE AA TO SUB-CHANNEL ADDRESS** SEND	
31	SETI D=**20AA** F=**5** I=**Y** SEND	To enable the line.
32	D SEND	DISP instruction.
33	L=**14** M=**TO END THE TEST PRESS SEND**	To display on line 14 text in operand M.
	O SEND	OSET instruction.
34	SETI D=**8FAA** F=**5** I=**Y** SEND	To wait for operator's response to end the function.
35	E SEND	End of procedure. (Do not forget to catalog the procedure.)

Appendix D. Messages

Function and operator control messages are displayed on line 22 of the operator console. They inform you of the progression of the function and indicate errors.



Messages are explained in the following pages in alphabetical order.

Note: For Models **21A, 31A, 41A, and 61A** the alarms are accessed through the MOSS-E functions `Display alarms`.

Self-explanatory messages are included for reference only.

ABNORMAL ALC INDICATION FROM CP: WRAP FUNCTION CANCELED

Cause: ALC not supported by the CP

Action: None.

'ACTIVATE LINK' IS ALREADY ALLOWED FOR THIS TIC

Cause: You selected a token-ring interface coupler that does not have its activate link inhibit indicator on.

'ACTIVATE LINK' IS NOW ALLOWED

Cause: The *activate inhibit indicator* for the TIC selected has been reset in the NCP control block. The TIC may now be activated from the host.

ADAPTER CONFIG STATUS IS INVALID

Cause: Self-explanatory.

Action: None.

ALL OR PART OF 'VERIFY DATA' IS OUTSIDE MODULE

Action: Verify the address of the data to be patched.

ALTERNATE CONSOLE CALLING

Cause: The alternate console operator is trying to log on.

Action: You may log off to allow the alternate console operator to log on.

ALTERNATE TRACK ASSIGNMENT MAP FULL. CHANGE DISK

Cause: Too many disk track errors.

Action: Change disk.

ANSWER TONE MUST BE SET TO 'N'

Cause: The ANSWER TONE parameter is set to 'Y' while the SWITCHED LINE parameter is set to 'N'.

Action: When the SWITCHED LINE is set to 'N', the ANSWER TONE and RING INDICATOR parameters must be set to 'N'.

ARC NOT INSTALLED

Cause: Self-explanatory.

Action: None.

BEGINNING OF PORT SWAP FILE

Cause: Self-explanatory.

Action: None.

BOX OPERATING CHANGE SUCCESSFUL

Cause: Self-explanatory.

Action: None.

BT BUFFER INCORRECTLY DEFINED

Cause: The branch trace register address and/or length are destroyed.

Action: Restore the branch trace register address and/or length. Go to page 84. If the message appears again, contact the appropriate service representative.

BUFFERS NOT AVAILABLE: WRAP TEST STOPPED

Cause: The CCU control program stopped the wrap test because no more buffer space was available (control program overloaded).

Action: Select the Wrap Test function later.

BUFFERS TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED

Cause: The buffers are not available for the moment. The Wrap Test function is canceled.

Action: Select the Wrap Test function later.

CABLE DOES NOT EXIST

Cause: The cable for the specified port is not present.

Action: If the cable is plugged into the specified port, update the configuration data file.

CABLE ID NOT ACCESSED

Cause: The line is not active.

Action: Activate the line.

CABLE NOT INSTALLED

Cause:

1. The line that you specified is considered as not installed because there is no cable between the LIC and the modem, or
2. The configuration data file has not been updated after a cable change.

Action:

1. Enter the address of an installed line, or
2. If the cable is installed, update the configuration data file.

CABLE-ID IS NOT LOCAL ATTACHED

Cause: You have selected a direct-attached clocking for a TSS port but this port has external-attached clocking.

Action: Select the appropriate clocking.

CALL FAILURE

Cause: DCE on a link using a V.25 bis protocol reported one of the following call failure reasons:

- Engaged tone
- Forbidden call
- Local DCE busy
- Abort call
- Answer tone detected
- Ring tone.

Action: If a retry is not automatically performed by NCP, use a VTAM command to restart the calling procedure. If the problem persists, perform a problem determination on the link. If the failure is due to a forbidden call, the DCE must be suspected.

CANCEL I-SIT FAILED ON LINE xxxx SCANNER xxxx

Action: Try again.

CANCEL IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

CANCELED: TARGET VALUE > END STEP NUMBER

Cause: While performing the procedure, a GOTO, HALT, or WAIT target value greater than the step number of the END instruction was encountered.

Action: Correct the target value and execute the procedure x another time. See “Control Program Procedures (CPP).”

CCU ALREADY IN I-STEP MODE

Cause: You selected the function Set I-Step and the CCU was already in instruction step mode.

CCU ALREADY IN PROCESS MODE

Cause: You selected the function Reset I-Step and the CCU was already in Process mode.

CCU CHECK RESET

Cause: The CCU check condition is reset.

Action: None.

CCU DOWN: CONTACT SERVICE PERSONNEL

Cause: You cannot IPL a single CCU because the CCU is down.

Action: Contact the appropriate service representative to repair the CCU.

CCU FUNCTION NOT ALLOWED

Cause: When using the Menu 2 functions, you cannot use MCF.

CCU FUNCTION STILL PENDING

Cause: You tried to log off while a CCU function was pending.

Action: Perform or terminate the pending function.

CCU FUNCTIONS NOT ALLOWED

Cause: F2 is not allowed during Disk function.

CCU FUNCTIONS REFUSED

Cause: You selected the CCU functions before MOSS IML phase 2.

Action: Select the CCU functions after MOSS IML phase 2.

CCU FUNCTIONS REFUSED ON THE SELECTED CCU

Cause: Self-explanatory.

Action: None.

CCU IS NOT SELECTED: USE CSR FUNCTION

Cause: You have not selected a CCU.

Action: Use the CCU Select/Release (CSR) function to select a CCU.

CCU NOT IN THE RUN STATE (SEE MSA) - FUNCTION CANCELED

Cause: An error occurred that prevents the CCU from functioning correctly, or the CCU is stopped.

Action:

1. Re-IPL the link test program (if necessary) on the CCU.
2. Set the CCU to the run state (if necessary).
3. Restart the test.
4. If the error persists, contact the service representative.

CCU NOW IN I-STEP MODE

Cause: The CCU is set to instruction step mode.

CCU NOW IN NORMAL MODE

Cause: The CCU is set to normal processing. All CCU default options are set: for example, no address compare, no branch trace.

CCU NOW IN PROCESS MODE

Cause: The CCU is set to normal processing.

CCU POWER BLOCK IS NOT UP: CHECK IT FIRST

Cause: The CCU power block is either not present or not up.

Action: Check it with the POS function in order to set it UP.

CCU POWER BLOCK IS NOT UP: CHECK IT FIRST OR IPL SECOND CCU

Cause: The CCU power block is either not present or not up.

Action: Check it with the POS function in order to set it UP, or to IPL.

CCU POWER BLOCKS ARE NOT UP: CHECK THEM FIRST

Cause: Both CCU power blocks are either not present or not up.

Action: Check them with the POS function in order to set them UP.

CCU STATE IS IN REFRESH MODE, PRESS BREAK TO STOP REFRESH

Cause: Self-explanatory.

Action: Press BREAK to stop refresh.

CCU WILL BYPASS CCU CHECK

Cause: The CCU will continue to run when a CCU check condition occurs.

CCU WILL BYPASS IOC CHECK

Cause: The CCU will continue to run when an IOC-detected level-1 interrupt occurs.

CCU WILL STOP ON CCU CHECK

Cause: The CCU will stop when a CCU check condition occurs.

CCU WILL STOP ON IOC CHECK

Cause: The CCU will stop (hardcheck) when an IOC-detected level-1 interrupt occurs.

CCU-A INIT ERROR. CALL SERVICE REPRESENTATIVE TO RUN DIAGS.

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

CCU-A IS DOWN AND CCU-B POWER BLOCK IS NOT UP: CHECK CCU-B POWER

Cause: CCU-A is down and CCU-B power block is either not present or not up.

Action: Check the CCU-B power block.

CCU-A IS DOWN, MOSS IML HAS DETECTED CCU-B FAILURE.

Cause: When CCU-B was IMLed errors were found and CCU-A is down.

Action: Contact the appropriate service representative.

CCU-A POWER BLOCK IS NOT UP AND CCU-B IS DOWN: CHECK CCU-A POWER

Cause: CCU-B is down and CCU-A power block is either not present or not up.

CCU-A POWER BLOCK IS NOT UP, MOSS IML HAS DETECTED CCU-B FAILURE

Cause: When CCU-B was IMLed errors were found and the CCU-A power block is either not present or not up.

CCU/MOSS ERROR - LINK TEST FUNCTION CANCELED

Cause: A hardware error occurred between the CCU and the MOSS.

Action:

1. Activate the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

CCU/MOSS ERROR: BT BUFFER NOT ACCESSIBLE

Cause: The length and address of the branch trace buffer are not available because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 02.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: BT BUFFER NOT UPDATED

Cause: The branch trace parameters cannot be saved in the buffer header because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 02.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: DISK FUNCTION CANNOT BE PERFORMED: PRESS SEND

Cause: The Disk function cannot be performed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: FUNCTION CANNOT BE PERFORMED

Cause: The CCU interface was not disabled.

Action: Re-enter MCF.

CCU/MOSS ERROR: FUNCTION NOT PERFORMED

Cause: The function that you selected cannot be performed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: End the function, using the F1 key, and contact the appropriate service representative.

CCU/MOSS ERROR: INPUT X'71', X'72' REG NOT ACCESSIBLE

Cause: The registers cannot be accessed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: RESET CCU FUNCTION CANCELED

Cause: A physical error occurred when communicating with the CCU. The Reset CCU/LSSD function is canceled. A BER is created: type 01, ID 85.

Action: Select the Reset CCU/LSSD function another time. If the problem persists, contact the appropriate service representative.

CCU/MOSS ERROR: STEP NOT EXECUTED

Cause: A SETI or OSET instruction was not executed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: WORK REGISTERS CANNOT BE ALTERED

Cause: The CCU interrupt level cannot be accessed because of a hardware error on the MOSS-to-CCU boundary. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

CCU/MOSS ERROR: WRAP FUNCTION CANCELED

Cause: A physical error occurred when communicating with the CCU. The Wrap Test function is canceled. A BER is created: type 01, ID 85.

Action: Check that an IPL has been correctly performed on the CCU and that MOSS is online (MSA field d should display MOSS-ONLINE).

Select the Wrap Test function another time. If the problem persists, contact the appropriate service representative.

CDF ERROR xxxx IN yyyy: CONTACT SERVICE PERSONNEL

Cause: There is an unexpected error when calling a CDF access function. The access function and the code returned by CDF are specified in the message.

Action: Contact the appropriate service representative.

CDF ERROR: SOME POWER SUPPLY INFO CAN'T BE DISPLAYED

Cause: Some subsystem information may be missing on power supplies due to an error return code coming from the CDF access function.

Action: None.

CDF ERROR: SPECIFIED POWER SUPPLY CAN'T BE POWERED DOWN

Cause: An error occurred while accessing to CDF access function. Therefore the power supply cannot be powered down because the type is unknown.

Action: None.

CDF LA CHANGE ABORTED

Cause: The line adapter change could not be performed.

Action: Retry. If it is not successful, perform problem determination procedure for this line adapter.

CDF NOT ACCESSIBLE: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: A disk error has occurred while accessing the configuration data file.

Action: Contact the appropriate service representative.

CDF NOT CREATED: CREATE IT BEFORE REQUESTING DII

Cause: The configuration data file has not been created before requesting disk IPL information.

Action: End the function and perform a CDF create.

CDF NOT CREATED: WRAP FUNCTION CANCELED

Cause: The 3745 configuration data file has not been tested.

Action: Contact the appropriate service representative.

CDF NOT CREATED: CREATE IT BEFORE PERFORMING IPL

Cause: Self-explanatory.

Action: Create CDF before performing the IPL.

CHANGE REJECTED: A FALLBACK IS ACTIVE

Cause: Self-explanatory.

Action: None.

CLC NOT OPERATIONAL

Cause: Self-explanatory.

Action: None.

CLP NOT INSTALLED

Cause: Self-explanatory.

Action: None.

CLP NOT OPERATIONAL: WRAP FUNCTION CANCELED

Cause: Self-explanatory.

Action: None.

CLP NOT OPERATIONAL

Cause: Self-explanatory.

Action: None.

CLP OF LINE WRAP IS INOPERATIVE: WRAP FUNCTION CANCELED

Cause: Self-explanatory.

Action: None.

CODE ALREADY RESTORED

Cause: Self-explanatory.

Action: None.

CODE ALREADY UPGRADED

Cause: Self-explanatory.

Action: None.

COMMAND NOT ALLOWED FOR MOSS POWER SUPPLY

Cause: Power down of MOSS power supply has been requested.

Action: None.

COMMAND PERFORMED WITH ERROR: SEE STATUS

Cause: The command has been executed but the result is not the expected one due to a power subsystem error.

Action: See displayed status and press F4 for more information.

COMMAND REJECT RECEIVED DUE TO BUFFER OVERRUN

Cause: This message applies only to the requester. An overrun condition occurred at the responder.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

COMMAND REJECT RECEIVED DUE TO INVALID COMMAND

This message applies only to the requester. It is followed by two hexadecimal digits representing the invalid command code that was received by the responder and returned to the requester.

Cause: An invalid command (not X'F3' = TEST) was received by the responder.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the service representative.

COMMAND REJECT RETURNED BY SCANNER

Cause: A scanner hard stop error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function, then re-IML the scanner. If the problem persists, contact the appropriate service representative.

COMMAND SUCCESSFULLY COMPLETED

Cause: Self-explanatory.

Action: None.

COMMAND REJECTED: WRAP TEST STOPPED

Cause: 3746-900 internal box error

Action: Retry, and if the problem persists, on MOSS-E, select the 3746-900 menu then on the Problem management menu display alarms and errors. If needed contact the appropriate service representative.

COMMAND SUCCESSFULLY PERFORMED

Cause: The power supply status has been updated or the BER has been correctly logged.

Action: None.

CONFIGURATION MISMATCH: WRAP TEST STOPPED

Cause: Self-explanatory.

Action: Check for:

An invalid hardware type
An invalid cable ID
An invalid wrap mode
An invalid wrap level

CONTENTION, PLEASE REENTER

Cause: The command or data that you entered was incorrectly received.

Action: Re-enter all your input, even though it is still displayed on the screen.

CONTROL PROGRAM NOT READY: TRY LATER

Cause: Fallback has been aborted on mailbox exchange. Switchback is not allowed until the CP timer for fallback runs out (4 minutes).

Action: None.

CONTROLLER DATA UNAVAILABLE: FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The function is canceled.

Action: Select the function again time. If the problem persists, contact the appropriate service representative.

CONTROLLER IS DOWN: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: The CCU is down.

Action: Contact the appropriate service representative to repair the CCU.

COUNTERS HAVE BEEN RESET

Cause: Self-explanatory.

Action: None.

CREATE IS COMPLETE

Cause: Ports have been logically switched.

Action: Switch ports physically.

CUSTOMER IDENTIFICATION HAS BEEN UPDATED

Cause: Self-explanatory.

Action: None.

DATA MUST BE PAIRS OF HEX CHARS SEPARATED BY 1 BLANK

Cause: This message applies only to the requester. One of the following conditions occurred during data entry using the personal pattern screen:

1. The pairs of hexadecimal digits were not separated by a single blank.
2. More than one blank separated a pair of hexadecimal digits.
3. The hexadecimal digits were not entered in pairs.
4. One or more characters were outside the range X'0' through X'F'.

Action: Position the cursor at the error and correct it using the insert/delete keys, then press SEND.

DELAYED CALL

Cause: This message is reported by the DCE. Due to a network problem, the call must be delayed. A delayed timer value is given by the DCE.

Action: An automatic retry is done by NCP.

DELETE REFUSED: CCU OF SWAP NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

DESTINATION DISK(ETTE) ERROR: FUNCTION CANNOT BE PERFORMED

Cause: An error occurred when trying to copy patches from one disk(ette) to another.

Action: Press F1 to leave the function.

DESTINATION PORT ALREADY SWAPPED

Cause: The destination port has already been defined in another port swap.

DESTINATION PORT IS INVALID

Cause: The value of the destination port is invalid.

Action: Enter another value.

DESTINATION PORT IS MISSING

Cause: The input is incomplete, or the configuration data file has not been updated after a configuration change.

Action: Enter a value for the destination port. If you already entered the value for the destination port, update the configuration data file.

DIRECT-ATTACHMENT IS NOT AUTHORIZED FOR A LIC PORT 5 OR 6

Cause: You have tried to directly attach a LIC type 5 or 6.

Action: Select the appropriate clocking.

DISCREPANCY BETWEEN CDF AND SCANNER (MUX AND OR BYPASS)

Cause: Self-explanatory.

Action: None.

DISK AND DISKETTE EC NUMBERS ARE DIFFERENT

Cause: Self-explanatory.

Action: Try another diskette.

DISK DIRECTORY CAPACITY EXCEEDED: MOSS DOWN

Cause: Too many customer files. The capacity of the disk directory is exceeded.

Action: Contact the appropriate service representative.

DISK ERROR: CONTACT SERVICE PERSONNEL FOR MAINTENANCE

Cause: An error has occurred while accessing the MOSS disk.

Action: Contact the appropriate service representative.

DISK ERROR: DIRECTORY MAY BE DAMAGED

Cause: A disk hardware error occurred when writing the directory. The directory may be damaged. Control program procedures may be lost. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: DIRECTORY NOT ACCESSIBLE

Cause: A hardware error occurred on the disk. The directory is no longer available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR DURING LOADING PROCESS

Cause: When you are loading information on the disk, there is a problem and the disk does not reflect the new information.

DISK ERROR DURING PORT SWAP PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR DURING READING PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR DURING WRITING PROCESS

Cause: Self-explanatory.

Action: None.

DISK ERROR: FUNCTION CANCELED. PRESS SEND

Cause: A physical error occurred when accessing the disk. The function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the function again. If the problem persists, contact the appropriate service representative.

DISK ERROR: FUNCTION NOT AVAILABLE

Cause: A hardware error occurred on the disk. The function that you selected is not available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: End the function, using the F1 key, and contact the appropriate service representative.

DISK ERROR: I-SIT NOT SAVED ON DISK

Action: Try again.

DISK ERROR: IML CANCELED

Cause: A hardware error occurred on the disk. The scanner microcode is not accessible. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Terminate the function, and contact the appropriate service representative.

DISK ERROR: MOSS DOWN

Cause: MOSS is down because a hardware error occurred when writing on the disk. MOSS is no longer available.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE CANNOT BE FILED/MODIFIED

Cause: A disk hardware error occurred when writing the procedure. The procedure cannot be cataloged or modified. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE FILE MAY BE DAMAGED

Cause: A disk hardware error occurred when erasing a procedure. The procedure file may be damaged. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: PROCEDURE NOT AVAILABLE

Cause: A hardware error on the disk. The procedure that you selected is not available. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Contact the appropriate service representative.

DISK ERROR: SAVE CANCELED

Cause: A disk error was detected while saving the disk onto one of the five or six diskettes.

Action: Start another save from the beginning. If the problem persists, contact the appropriate service representative.

DISK ERROR: THE DISK CONTENTS CANNOT BE DISPLAYED

Cause: Self-explanatory.

Action: None.

DISK ERROR: UNABLE TO LOAD ADAPTER DUMP MODULE

Cause: A disk error occurred while an automatic scanner dump was attempted.

Action: Contact the appropriate service representative.

DISK ERROR: UNABLE TO LOAD CCU IPL MODULE

Cause: A disk error occurred during an automatic 3745 initialization.

Action: Initialize the 3745 from the control panel or the operator console. If the 3745 initialization fails, contact the appropriate service representative. While waiting for service, set the 3745 to diskette mode.

DISK ERROR: UNABLE TO LOAD FUNCTION MODULE

Cause: A disk error occurred while selecting a 3745 function.

Action: Try again. If the problem persists, contact the appropriate service representative.

DISK ERROR WHILE CLOSING PORT SWAP FILE
DISK ERROR WHILE OPENING PORT SWAP FILE
DISK ERROR WHILE READING PORT SWAP FILE
DISK ERROR WHILE WRITING PORT SWAP FILE

Action: Leave the Port Swap function and start again.

DISK ERROR WHILE OPENING FILE

Cause: Self-explanatory.

Action: None.

DISK FILE NOT FOUND

Cause: Self-explanatory.

Action: None.

DISK FILE NOW EMPTY

Cause: Self-explanatory.

Action: None.

DISK FORMATTING IN PROGRESS: PLEASE WAIT SEVERAL MINUTES

Cause: Disk is being initialized.

DISK FUNCTIONS CANNOT BE PERFORMED WHEN MOSS IS ONLINE

Action: Press F1 or F6.

DISK NOT INITIALIZED

Cause: Disk is not initialized.

Action: Perform disk initialization.

DISK NOT READY

Cause: A disk error occurred while selecting a 3745 function.

Action: Try again. If the problem persists, contact the appropriate service representative.

DISK STOPPED

Cause: There has been no access of the disk for 20 minutes.

Action: Press any key on the keyboard or request a function to trigger the disk access again.

DISK UNUSABLE: EC NOT INITIALIZED

Cause: There is no microcode on the disk.

Action: Perform the 'Restore disk from diskettes' function.

DISK(ETTE) ERROR: MCF FUNCTION CANCELED

Action: Re-enter MCF.

DISK/DISKETTE POWER SUPPLY ERROR

Cause: Start-Stop disk/diskette cannot be processed by power control.

Action: Follow the procedure when there is a power supply error.

DISKETTE BADLY INITIALIZED

Cause: The diskette is not formatted.

Action: Select the DIF function to format the diskette.

DISKETTE ERROR: FUNCTION CANCELED: PRESS SEND

Cause: A physical error occurred when accessing the diskette. The function is canceled.

Action: Select the function again. If the problem persists, contact the appropriate service representative.

DISKETTE ERROR: FUNCTION NOT AVAILABLE

Cause: The function that you selected is not available because of a hardware error on the diskette. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: End the function, using the F1 key, and contact the appropriate service representative.

DISKETTE ERROR: MOSS DOWN

Cause: MOSS is down because a hardware error occurred when writing to the disk. MOSS is no longer available.

Action: Contact the appropriate service representative.

DISKETTE ERROR: MOUNT A NEW ONE, THEN PRESS SEND

Cause: An error has been detected on the diskette that you mounted.

Action: Change diskette.

DISKETTE ERROR: REQUEST IGNORED

Cause: Your request cannot be performed because of a diskette error. A BER is created: type 01, ID 03 Alarm A4 or A5 is displayed.

Action: Retry. If the error persists, contact the appropriate service representative.

DISKETTE ERROR: RESET CCU FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The Reset CCU/LSSD function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the Reset CCU/LSSD function again. If the problem persists, contact the appropriate service representative.

DISKETTE ERROR: WRAP FUNCTION CANCELED

Cause: A physical error occurred when accessing the diskette. The Wrap Test function is canceled. A BER is created: type 01, ID 03. Alarm A3 is displayed.

Action: Select the Wrap Test function again. If the problem persists, contact the appropriate service representative.

DISKETTE FUNCTIONS CANNOT BE PERFORMED WHEN MOSS IS ONLINE: PRESS SEND

Cause: Diskette functions cannot be performed when MOSS is connected to the CCU control program.

Action: Set MOSS offline as described on page 243.

DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR

Cause: Self-explanatory.

Action: None.

DISKETTE NOT READY

Cause: The diskette is not mounted, not correctly mounted (upside down), or the diskette engaging lever is not set correctly.

Action: Mount the diskette or set the diskette engaging lever correctly. If it is not the cause, contact the service representative.

DISKETTE UNFORMATTED

Cause: The diskette is not formatted.

Action: Select the DIF function to format the diskette.

DSR/CTS DROPPED

Cause: 3746-900 external box error found:

Action: Check the DCE or the DCE connection.

DSR/CTS FAILED TO COME UP

Cause: 3746-900 external box error found:

Action: Check the DCE or the DCE connection.

DX FACILITY MUST BE SET TO 'N' IF YOU WANT HALF DUPLEX MODE

Cause: You selected half-duplex mode while DX FACILITY is set to 'Y'.

Action: Set DX FACILITY to 'N'.

DX FACILITY MUST BE SET TO 'Y' IF YOU WANT DUPLEX MODE

Cause: You selected duplex mode while DX FACILITY is set to 'N'.

Action: Set DX FACILITY to 'Y'.

E-SIT ALREADY ACTIVE ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

EC INSTALLATION FROM xxxxx DISKETTE IN PROGRESS

Cause: The EC primary, secondary, third, fourth, fifth, or sixth diskette is being copied onto the disk.

ENABLE COMMAND FAILED - LINK TEST FUNCTION CANCELED

Cause: The line cannot be enabled.

Action:

1. Check that the IPL port table has been correctly defined.
2. Check that the modem cable is correctly connected.
3. Check that the modem is powered on and operational.
4. If the link is a direct attachment, check that the responder is powered on and initialized.
5. If the error persists after the above operations, contact the service representative.

Note: The SCF, LCS, and SES are also displayed for this type of error.

END OF PORT SWAP FILE

Cause: Self-explanatory.

Action: None.

ENTER YOUR SELECTION (A OR B)

Cause: You have entered a blank instead of A or B.

Action: Enter A or B.

ENTER YOUR SELECTION (Y OR N)

Cause: You have entered a blank instead of Y or N.

Action: Enter Y or N.

ERROR DETERMINING TRID MESSAGE MOSS/TIC ERROR FUNCTION CANCELED

Cause: The TIC is not yet activated by NCP.

Action: Activate the TIC via NCP.

ERROR DURING CALL ACCESS FUNCTION

Cause: Self-explanatory.

Action: None.

ERROR DURING ERROR RECOVERY

Cause: An undefined error was detected during the error recovery. The scanner is not able to process the MOSS command. A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, contact the appropriate service representative.

ERROR DURING IPL PROCESS

Cause: The IPL file cannot be updated according to your request.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING LKP

Cause: You could not update the IPL nor could you change the link IPL ports file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING LKP AND PORT SWAP

Cause: You could not update the IPL nor could you change the link IPL ports or port swap files to their previous status.

Action: Contact the appropriate service representative.

ERROR DURING IPL; WARNING PORT SWAP

Cause: You could not update the IPL nor could you change the port swap file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING PORT SWAP PROCESS

Cause: You could not update the port swap file

Action: Contact the appropriate service representative.

ERROR DURING PORT SWAP PROCESS; WARNING LKP

Cause: You could not update the port swap file nor could you change the link IPL ports file to its previous status.

Action: Contact the appropriate service representative.

ERROR DURING THE LOADING OF A MODULE

Cause: The link IPL port file has been changed.

ERROR IN CDF DURING PORT SWAP PROCESS

Cause: Self-explanatory.

Action: None.

ERROR IN FRONT END SCANNER PROCESSOR

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function.

ERROR IN SCANNER DURING COMMAND PROCESSING

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: End the function, using the F1 key, and contact the appropriate service representative.

ERROR IN SCANNER: ICC/LIC FAILED OR IS NOT PRESENT

Cause: A scanner hardware error is detected. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function.

ERROR ON TRACK 0. CHANGE DISK

Cause: Self-explanatory.

Action: Change disk.

ERROR WHEN SENDING MBX IN PORT SWAP PROCESS

Cause: When MOSS is online, NCP refuses the deletion of the port swap.

ERROR WHEN WRITING CDF FILE ON THE DISK

Action: Retry. If the problem persists, contact the appropriate service representative.

ERROR WHILE ACCESSING POWER SUB-SYSTEM

Cause: An error occurred while getting scheduled power-on data from the power subsystem after option 2 was selected. A BER has been created.

ERROR WHILE FLAGGING BAD TRACK: CHANGE DISK

Cause: Self-explanatory.

Action: Change disk.

ERROR WHILE SENDING REQUEST TO CTL PGM

Cause: There is an error while sending the mailbox to the control program.

ERROR WHILE TRANSMITTING DATA

Cause: An error occurred when transmitting the data to the power subsystem. Date and time have not been updated. A BER has been created.

ERROR WITH CDF: DISK ERROR

Action: Contact the appropriate service representative.

ERROR WITH CDF: ERROR ON SWAD OPERATION

Cause: There is a switch adapter (SWAD) error when CDF tries to access the switch information.

ERROR WITH CDF: INVALID INPUT

Cause: Self-explanatory.

Action: Correct the input.

ERROR WITH CDF: TIMEOUT ON REQUEST

Cause: There is a port swapping error because of an error in the CDF.

EXEC CANCELED ON OPERATOR REQUEST

Cause: You canceled the procedure by pressing F5 while the procedure was being executed.

EXEC CANCELED: OUTPUT X'71' REGISTER NOT ACCESSIBLE

Cause: The execution of the selected procedure is canceled because of a hardware error on the MOSS-to-CCU boundary when reading the output X'71' register. A BER is created: type 01, ID 85.

Action: Contact the appropriate service representative.

'EXPECTED DATA' CANNOT BE ENTERED AFTER 'Y'

Cause: You entered data in the EXPECTED area of the screen although you left the letter Y which means that the TRANSMIT and EXPECTED data are identical.

Action: Do one of the following:

- If TRANSMIT and EXPECTED data are identical, erase the EXPECTED data
- If they are different, replace Y by N.

FALLBACK NOT ALLOWED IN DUAL MODE (TWIN CONFIGURATION)

Cause: The 3745 is in twin-dual mode. The fallback function is not available.

Action: None.

FALLBACK NOT ALLOWED: SINGLE CCU INSTALLED

Cause: You have requested fallback but a single CCU is installed.

Action: None.

FALLBACK NOT AVAILABLE IN PRESENT CCU CONFIGURATION

Cause: Fallback is not allowed because:

- 3745 is in twin-standby mode. Either no CCUs are reset/ready or both CCUs are reset/ready.
- 3745 is in twin-backup mode. No CCU is running or one CCU already supports the whole configuration.

Action: None.

FALLBACK REFUSED: SELECTED CCU MUST BE RUNNING

Cause: You have requested fallback but the CCU specified to support all the resources is not running properly.

Action: Perform an IPL before requesting fallback.

FIELD MUST BE BLANK WHEN BYTE MULTIPLEXER CHANNEL = N

Cause: When the channel is not a byte multiplexer channel, you cannot have an ESC address.

FILE CHGxxxxx NOT FOUND ON xxxxxx: FUNCTION CANCELED, PRESS SEND

Cause: File CHGxxxxx cannot be found on the new EC diskette, or is no longer on the disk.

Action: Contact the appropriate service representative.

FILE CHGxxxxx SMALLER ON DISKETTE: FUNCTION CANCELED, PRESS SEND

Cause: The space allocated for the file CHGxxxxx on the new EC diskette is too small.

Action: Contact the appropriate service representative.

FILE NOT AVAILABLE ON DISK

Cause:

- The file is already opened, a disk operation is going on.
- You specified a wrong load module name.

Action: Restart the operation later on.

FILE NOT AVAILABLE ON DISKETTE

Cause: There is no load module on the diskette.

Action: Replace or regenerate another diskette.

FILE IN USE: RETRY LATER

Cause: BERs are currently being created.

FIRST STOP THE CCU

Cause: You cannot alter work registers if the CCU is not stopped.

Action: Stop the CCU and restart the Alter function.

FIRST TERMINATE FUNCTION ON SCREEN

Cause: Self-explanatory.

Action: Terminate function on screen.

FIRST TERMINATE SAME TYPE FUNCTION

Cause: Self-explanatory.

Action: Terminate same type function.

FORMAT COMMAND FAILED. CHANGE DISK

Cause: Disk cannot be initialized.

Action: Change disk.

FORMAT COMPLETED

Cause: The disk initialization has been completed.

FRAME NOT INSTALLED OR DATA NOT ACCESSIBLE

Cause: Self-explanatory.

Action: The power configuration identification table has not been created. Ask your service representative to create this table.

FREEZE IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

FREEZE IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

FUNCTION CANCELED: DISK AND DISKETTE EC NUMBERS ARE DIFFERENT

Action: Try another diskette.

FUNCTION CANCELED: DISKETTE MCF NBR NOT GREATER THAN DISK MCF NBR

Cause: The last MCF number on the diskette is less than or equal to that on the MOSS disk.

Action: Check the diskette.

FUNCTION CANCELED: DISKETTE MCF NOT SEQUENTIAL WITH LAST DISK MCF

Cause: The MCF is not sequential with the last MCF resident on disk.

Action: Display the MCF history table to identify the last MCF applied and check.

FUNCTION CANCELED: FIRST MCF ON DISKETTE NOT SEQUENTIAL WITH LAST DISK MCF

Cause: The MCF that you are trying to apply is not sequential with the last MCF applied on disk.

Action: Display the MCF history table to identify the last applied MCF. You may have forgotten to apply previous MCFs.

FUNCTION CANCELED: THERE IS NO MCF FILE ON DISKETTE

Action: Transfer MCF file from another diskette, if any.

FUNCTION CANNOT BE PERFORMED WHEN MOSS IS ONLINE

Action: Set MOSS offline (page 243).

FUNCTION COMPLETED

Cause: The function that you selected has been performed.

Action: Do one of the following:

- Select another function from the same secondary menu, or
- End the function using the F1 key.

FUNCTION IN PROGRESS

Cause: The function that you selected is being performed.

FUNCTION IN PROGRESS: WAIT FOR COMPLETION BEFORE PRESSING F1

Cause: F1 does not function during the fallback and switchback process.

Action: Wait until the fallback or switchback process is completed before pressing F1.

FUNCTION NOT ALLOWED IN DISKETTE MODE

Cause: Self-explanatory.

Action: None.

FUNCTION NOT ALLOWED: CHECK CCU STATE

Cause: You selected a function that cannot be performed under the current status of MOSS.

Action: Either wait until the appropriate MOSS status is displayed in the MSA or change the MOSS status (see page 394).

FUNCTION NOT AVAILABLE DURING IPL

Cause: You selected a function while initializing the 3745.

Action: Select the function once the 3745 initialization is completed.

FUNCTION NOT AVAILABLE IN DISKETTE MODE

Cause: No function can be selected in diskette mode.

Action: Contact the appropriate service representative.

FUNCTION NOT AVAILABLE: TRY LATER

Cause: The function that you selected is not available because a file is being transferred to the host.

FUNCTION NOT YET AVAILABLE

Cause: Self-explanatory.

Action: None.

FUNCTION TERMINATION NOT ALLOWED: COMPLETE FUNCTION

Cause: Self-explanatory.

Action: Complete the function.

HARDWARE ERROR ON RECEIVE

Cause: A cable or modem error occurred on receive.

Action:

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

HARDWARE ERROR ON TRANSMIT

Cause: A cable or modem error occurred on transmit.

Action:

1. Verify the modem and modem cable.
2. Restart the test.
3. If the error persists, contact the service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

I-SIT ACTIVE ON LINE xxxx SCANNER xx, BUT NO EVENTS RECORDED

Cause: Self-explanatory.

Action: None.

I-SIT ALREADY ON DISK, PRESS 'E' BEFORE SAVING

Cause: Self-explanatory.

Action: None.

I-SIT AVAILABLE FROM BUFFER FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT AVAILABLE FROM DISK FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT CANCELED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT FROZEN FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT NOT ALLOWED ON LINE xxxx: SCANNER xxxx TRACE COMPLETE

Cause: You cannot put more than four traces on a given scanner.

I-SIT NOT STARTED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT RESUMED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

I-SIT SAVED ON DISK

Cause: Self-explanatory.

Action: None.

I-SIT STARTED ON LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

IML FOR SCANNER xxxx COMPLETED: SCANNER IS CONNECTED

Cause: The scanner is operational and under control of the CCU control program. MSA field m displays SCANNER xxxx CONNECTED.

IML FOR SCANNER xxxx IN PROGRESS

Cause: The IML of scanner xxxx is being processed normally.

IML REQUESTED - TERMINAL DISCONNECTED

Cause: Self-explanatory.

Action: None.

IMMEDIATE FUNCTION FAILED

Cause: Self-explanatory.

Action: None.

INCOMING CALL

Cause: This message is reported by the DCE or the DTE due to a call collision (Incoming and Outgoing call at the same time). Priority is given to the incoming call.

Action: If a retry is not automatically performed by NCP, use a VTAM command to restart the calling procedure.

INCOMPATIBLE WITH DATA STREAMING

Cause: You have entered a value for a parameter that is incompatible with data streaming.

Action: If you enter a value for data streaming, do not enter a value for high-speed data transfer or byte multiplexer channel.

INCORRECT DISKETTE, IT MUST BE A PRIMARY AT SAME EC

Action: Mount the correct diskette.

INCORRECT DISKETTE, YOU MUST MOUNT THE IML DISKETTE

Cause: Self-explanatory.

Action: Mount the IML diskette.

INCORRECT MCF FILE: CONTACT SERVICE REPRESENTATIVE

Cause: Self-explanatory.

Action: Contact the appropriate service representative.

INCORRECT PASSWORD

Cause: You entered an incorrect password to have access to the Password Management function.

Action: Check the password and reenter.

INCORRECT PASSWORD - PLEASE REENTER

Cause: You entered an incorrect logon password.

Action: Enter the correct password.

- Local console password: The number of unsuccessful attempts is not limited.
- Remote console password: The number of unsuccessful attempts is limited to three. Then the remote console is disconnected.

INCORRECT PASSWORD - TERMINAL DISCONNECTED

Cause: You entered an incorrect logon password three times on the remote console. The remote console is disconnected.

Action: Check whether the password has been modified or if you still have access to the remote console.

If you obtain the new password, you have to reconnect the remote console.

INCORRECT VALUE FOR TIMER

Cause: You entered a value outside the allowed range of 05 to 30.

Action: Enter a correct value (05 to 30).

INCORRECT VALUE FOR TIMER: ENTER INTEGER FROM 05 to 30

Cause: You entered a value outside the allowed range of 05 to 30.

Action: Enter an integer from 05 to 30.

INPUT CHECKSUM DOES NOT MATCH COMPUTED ONE

Action: Request the patch again.

INPUT MUST BE PAIRS OF HEX CHARACTERS SEPARATED BY BLANKS

Cause: You did not enter two hexadecimal characters at a time.

Action: Correct your input.

INPUT MUST BE 8 BINARY DIGITS

Cause: Either you entered fewer than eight digits, or the digits you entered are binary.

Action: All dots of the field in error must be replaced by zeros or ones.

INTF STANDARD NOT ACCESSED

Cause: Self-explanatory.

INVALID

Cause: This message is reported by the DCE when an invalid command is received from the DTE.

Action: Suspect an operator error or an NCP problem.

INVALID ADDRESS FIELD RECEIVED

This message is followed by:

1. **Two hexadecimal digits representing the address field that was received, if they are not already displayed on the link test statistical counter screen.**
2. **By the number of each type of error.**

Cause: An invalid address field was received in the test frame.

Action:

1. Check that the responder address specified when you initialized the requester is correct.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

INVALID ARC TYPE

Cause: Self-explanatory.

Action: None.

INVALID CLP TYPE

Cause: Self-explanatory.

Action: Check CDF/CDF-E.

INVALID BOX OPERATING MODE WITH THE CCU CONFIGURATION

Cause: Self-explanatory.

Action: None.

INVALID CHANGE (MOSS NOT ALONE)

Cause: Self-explanatory.

Action: None.

INVALID CLP TYPE

Cause: Self-explanatory.

Action: Check CDF/CDF-E.

INVALID COMMAND OR PARAMETER: WRAP FUNCTION CANCELED

Cause: Self-explanatory.

Action: Check NCP generation

INVALID LIC TYPE

Cause: Self-explanatory.

Action: Check CDF/CDF-E.

INVALID SEQUENCE MOSS-NCP: WRAP FUNCTION CANCELED

Cause: An error occurred while communicating with NCP

Action: Retry.

INVALID CONFIGURATION IN THE CDF: CONTACT SERVICE PERSONNEL

Cause: The configuration and the mode are invalid in the CDF. This can happen when one of the following is performed:

- An EC install
- A power off/power on
- An IML from the disk
- A CDF create.

INVALID CONTROL FIELD RECEIVED

This message is followed by:

1. **Two hexadecimal digits representing the control field that was received, if they are not already displayed on the link test statistical counter screen.**
2. **By the number of each type of error.**

Cause: An invalid control field was received in the test frame.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

INVALID DATA RECEIVED

This message applies only to the requester.

Cause: The received data does not match the transmitted data, which is therefore displayed on a separate screen.

Action:

1. Examine the data to determine the character in error. The cursor is positioned in front of the first character that does not match.

Note: Up to 64 bytes can be shown on a screen, so two screens may be needed to display all the data. In this case, you can see which screen is displayed by looking at the bottom right-hand corner of the screen:

- If F8:FORWARD is displayed, you are looking at the first screen (first 64 bytes).
- If F7:BACKWARD is displayed, you are looking at the second screen (second 64 bytes).

2. Use F8 or F7 to switch between screens as required.
3. Press F4 to continue the test.

Notes:

1. If, in addition, too many bytes have been received, the error message is: INVALID DATA RECEIVED - TOO MUCH DATA RECEIVED.
2. The NCP and the Responder Link Test program can both buffer a full 128 bytes. Other responders may be limited to less than 128 bytes; for example, the controller load/dump program (CLDP) is limited to 32 bytes. In this case, there will be an INVALID DATA RECEIVED message if the test message sent by the requester was longer than the limit.

INVALID DATA RECEIVED - TOO MUCH DATA RECEIVED

See message INVALID DATA RECEIVED Notes 1 and 2.

INVALID DATE

Action: Enter the date as requested.

INVALID FILE NAME

Cause: File does not exist.

Action: In diskette mode, the file might not be on the primary diskette. Enter the patch in disk mode.

INVALID INPUT

Cause: You did one of the following:

- You pressed SEND before entering the requested input on a screen.
- You entered one or more invalid characters.
- You entered an invalid value, for example, an address outside the specified range.
- You made a formatting error.

Action: Do one of the following:

- Correct the input, or
- Press one of the F keys displayed on the screen.

INVALID INPUT, ENTER A OR B

Cause: You have entered a character other than A or B when only A or B is expected.

Action: Enter A or B.

INVALID INPUT , CSS NO PRESENT

Cause: 37CS not installed

Action: Check CDF-E if 3746-900 installed

INVALID INPUT, ENTER Y OR N

Cause: You have entered a character other than Y or N when only Y or N is expected.

Action: Enter Y or N.

INVALID LCD: WRAP FUNCTION CANCELED

Cause: The control program transmitted an incorrect line control definition (LCD).

Action: Contact the control program service representative.

INVALID LIC NUMBER

Cause: You have entered a nonexistent LIC number.

Action: Enter the correct LIC number.

INVALID LINE ADDRESS

Cause: The line address that you entered is not within the correct range.

Action: Check the line address and re-enter.

INVALID MODULE NAME

Cause: The module does not exist.

Action: In diskette mode, the module might not be on the primary diskette. Enter the patch in disk mode.

INVALID SEL#

Cause: The selection number (SEL#) that you entered is not between 0 and the maximum number of BERs in the BER file.

Action: Enter a correct BER selection number.

INVALID SEQUENCE MOSS-NCP: WRAP FUNCTION CANCELED

Cause: An error occurred while communicating with NCP

Action: Retry.

INVALID TIME

Action: Enter the time as requested.

IOC ERROR DURING ERROR RECOVERY

Cause: The scanner is not able to process the MOSS command. An IOC error was detected during the error recovery. A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, contact the appropriate service representative.

IOC RESET

Cause: A "reset tag" pulse is generated on the IOC bus.

IOC/SCANNER ERROR: FUNCTION NOT PERFORMED

Cause: A hardware error is detected either in the scanner or in the IOC bus. The MOSS command cannot be performed. A BER is created: type 01, ID 05.

Action: End the function, using the F1 key, and contact the appropriate service representative.

IOC/TRA ERROR: FUNCTION NOT PERFORMED

Cause: An IOC error occurred during an MIOH processing.

Action: Follow the general process for MIOH error.

IPL NOT ALLOWED ON SELECTED CCU: PERFORM A FALLBACK

Cause: The 3745 is configured in twin-standby mode and IPL is requested on the backup CCU. IPL is refused.

Action: Perform fallback to perform the IPL.

IPL NOT ALLOWED ON SELECTED CCU: PERFORM A SWITCHBACK

Cause: The selected CCU does not support the configuration, and the 3745 is configured in backup mode. All adapters are switched to the CCU that is not currently selected.

Action: Perform a switchback instead of an IPL.

IPL NOT ALLOWED, ENTER FBK TO COMPLETE FALLBACK

Cause: IPL is refused because the fallback was interrupted.

Action: Enter FBK to complete the fallback and then perform an IPL.

IPL NOT ALLOWED, ENTER SBK TO COMPLETE SWITCHBACK

Cause: IPL is refused because the switchback was interrupted.

Action: Enter SBK to complete the switchback and then perform IPL.

LEVEL INCOMPATIBLE WITH SELECTED LINE ADDRESS

Cause: The wrap test cannot be performed on this line at this level.

Action: Try another wrap level.

LIC ALREADY PRESENT

Cause: You have tried to add a LIC that already exists.

LIC DOES NOT EXIST

Cause: The LIC is not logically present in the CDF.

Action: If the LIC is physically installed, update the configuration data file.

LIC IS NOT PRESENT

Cause: The LIC is not physically present in the machine.

LIC IS STILL PRESENT

Cause: The LIC is still physically present in the machine.

LIC NOT INSTALLED

Cause: You entered a line address that corresponds to a LIC that is not installed, or the configuration data file has not been updated after a LIC change.

Action: Do one of the following:

- Enter a line address that corresponds to a LIC that is installed.
- If the line address is correct, update the configuration data file.

LIC NOT OPERATIONAL

Cause: Self-explanatory.

Action: None.

LIC NUMBER MANDATORY

Action: Enter a LIC number.

LINE ADDRESS DOES NOT BELONG TO AN INSTALLED SCANNER

Cause: The scanner referred to by the line address that you entered is not installed.

Action: Check the line address and re-enter.

LINE IS NOT ON THE CONNECTED CCU

Cause: You selected a line which is not on the CCU connected to MOSS.

Action: Retry after selecting the other CCU.

LINE NOT DISABLED/DEACTIVATED: WRAP FUNCTION CANCELED

Cause: You pressed SEND before disabling or deactivating the line.

Action: Select the Wrap Test function. Make sure that the line is disabled or deactivated before pressing SEND.

LINE NOT SYSTEM GENERATED: WRAP FUNCTION CANCELED

Cause: The line that you specified had not been defined at CCU control program generation time. The Wrap Test function is canceled.

Action: Select the Wrap Test function and specify a valid line address.

LINE NOT YET INITIALIZED

Cause: The control program has not yet requested the line initialization (SET MODE command).

Action: Activate the line at the host console and retry.

LINE SPEED MAY BE 230 KBPS OR ABOVE

Cause: Displaying the states of the data set leads for high-speed lines (230 kbps or above) may disturb the transmission of data.

Action: Do one of the following:

- Enter Y to display the lead states.
- Terminate the function.
- Press one of the displayed F keys.

LINE SPEED MAY BE 230 KBPS OR ABOVE: LEAD STATE NOT ACCESSIBLE

Cause: You tried to display the states of the data set leads for high-speed lines (230 kbps or above) but the scanner cannot provide the leads.

Action: Do one of the following:

- Terminate the function,
- Select another line, or
- Press one of the displayed F keys.

LINE TEMPORARILY NOT AVAILABLE: WRAP FUNCTION CANCELED

Cause: You cannot perform, for the moment, wrap tests on the line that you specified. The Wrap Test function is canceled.

Action: Try again later.

LINE TEST ACTIVE: WRAP FUNCTION CANCELED

Cause: You tried to perform the Wrap Test function on a line that is being tested.

LINE TRACE ACTIVE: WRAP FUNCTION CANCELED

Cause: You tried to perform the Wrap Test function on a line that is being traced.

LINK DISABLED - LINK TEST FUNCTION CANCELED

Cause: An error occurred that disabled the link.

Action:

1. Determine the error condition from the display.
2. Restart the test in investigation mode and check the other error message.

LINK NOT DEFINED IN IPL PORT TABLE

Cause: The link being tested is not defined in the IPL port table.

Action:

1. Define the link as an IPL port for the CCU.
2. Re-IPL the link test program on the CCU.
3. Restart the test.

LINK TEST PROGRAM ABEND

Cause: A hardware error occurred during IPL phase 3.

Action:

1. Press the Power On Reset pushbutton to reset the 3745.
2. Re-IPL the link test program.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

LINK TEST PROGRAM NOT LOADED - FUNCTION CANCELED

Cause: You tried to select the Stand-Alone Link Test (SAT) function when the link test program was not loaded.

Action: Select the Load Link Test Requester (LTQ) function or Load Link Test Responder (LTS) function to load the link test program.

LOAD FROM MOSS DISK IN PROGRESS

Cause: The control program is being loaded into the CCU from the MOSS disk.

Action: Wait until IPL is finished.

LOAD IN PROGRESS, FUNCTION NOT AVAILABLE

Cause:

- A load module is being transferred on the disk (issued by an MLM command from the host).
- A copy of the load module to the diskette is in progress.

Action: Wait for the end of the current operation and restart the function. Refer to DII function.

LOAD MODULE TOO BIG, CANNOT BE COPIED TO DISKETTE

Cause: The load module is greater than 1 Megabyte.

Action: Regenerate a smaller load module.

LOCAL CONSOLE CALLING

Cause: The local console operator is trying to log on.

Action: It is recommended that you log off. The local console operator can disconnect the remote, alternate, or RSF console at any time.

LOCAL MODEM LEVEL FOR LIC11 V.35 IS NOT ALLOWED
LOCAL MODEM LEVEL FOR LIC12 IS NOT ALLOWED

Cause: Self-explanatory.

Action: None.

LOCAL PASSWORD AND MAINTENANCE PASSWORD MUST BE DIFFERENT

Cause: Self-explanatory.

Action: Enter different local and maintenance passwords.

LVL3 INTERRUPT SENT TO CCU

Cause: A CCU level-3 interrupt is sent to the CCU.

MAINTENANCE PASSWORD HAS BEEN DEACTIVATED

Cause: The request to deactivate the maintenance password is successful.

Action: None.

MAINTENANCE PASSWORD HAS BEEN PERMANENTLY ACTIVATED

Cause: The request to activate permanently the maintenance password is successful.

Action: None.

MAINTENANCE PASSWORD HAS BEEN TEMPORARILY ACTIVATED

Cause: The request to temporarily activate the maintenance password is successful.

Action: None.

MANDATORY INPUT

Action: Enter the requested value.

MCF FILE COPIED ON DISK

Cause: Self-explanatory.

Action: None.

MCF FILE IS EMPTY

Cause: Self-explanatory.

Action: None.

MICROCODE DETECTED ERROR DURING COMMAND PROCESSING

Cause: The scanner microcode detected an error. The function cannot be performed. A BER is created: type 01, ID 05.

Action: Terminate the function, then re-IML the scanner. If the problem persists, contact the appropriate service representative.

MIXED COMMANDS ARE NOT ALLOWED

Cause: Self-explanatory.

Action: None.

MORE THAN 128 BYTES RECEIVED

Cause: This message applies only to the responder. The link test responder expects to receive up to 128 bytes of data, but more than 128 bytes were received. The extra data is ignored.

Action:

1. Press F4 to return to the responder statistical counters screen.
2. If the error persists, contact the appropriate service representative.

MOSS DOWN BECAUSE YOU SELECTED PF1

Cause: You ended the function while the disk was being written. MOSS is no longer available.

Action: Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU FAILURE

Cause: During the IML, errors were found in a single configuration.

Action: None.

MOSS IML HAS DETECTED CCU-A AND CCU-B FAILURE

Cause: During the IML, errors were found for both CCU-A and CCU-B.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, CCU-B IS DOWN

Cause: During the IML, errors were found for CCU-A, and CCU-B is down.

Action: Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU-A FAILURE, CCU-B POWER BLOCK IS NOT UP

Cause: During the IML, errors were found for CCU-A, and the CCU-B power block is either not present or not up.

Action: Check the CCU-B power. Contact the appropriate service representative.

MOSS IML HAS DETECTED CCU-A FAILURE, FALLBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-A. Fallback is not possible on CCU-A.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, SWITCHBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-A. Switchback is not possible on CCU-A.

Action: None.

MOSS IML HAS DETECTED CCU-A FAILURE, YOU MAY TRY ANOTHER OPTION

Cause: During the IML, errors were found and you cannot IPL CCU-A.

Action: Perform another action.

MOSS IML HAS DETECTED CCU-B FAILURE, FALLBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-B. Fallback is not possible on CCU-B.

Action: None.

MOSS IML HAS DETECTED CCU-B FAILURE, SWITCHBACK IS NOT POSSIBLE

Cause: During the IML, errors were found for CCU-B. Switchback is not possible on CCU-B.

Action: None.

MOSS IML HAS DETECTED CCU-B FAILURE, YOU MAY TRY ANOTHER OPTION

Cause: During the IML, errors were found and you cannot IPL CCU-B.

Action: Perform another action.

MOSS IS NOT ONLINE: SET IT FIRST BY USING MOSS ONLINE FUNCTION

Cause: Fallback has been manually requested and the MOSS is not online. Switchback has been requested and the MOSS is offline.

Action: Set the MOSS online by using the MON function in Menu 2.

MOSS MCL FILE FULL, PLEASE APPLY CURRENT MCFS. REQUEST CANCELED

Cause: The MCL is larger than the MCL file space.

Action: Apply the copied MCFs to the 3745 microcode and then call the function again to transfer the rest of the MCFs.

MOSS/MOSS-E COMMUNICATION ERROR: REQUEST CANCELED

Cause: There is problem with the MOSS to MOSS-E link.

Action: Check the MOSS indicators on the 3745 control panel and the *Basic Operations Guide*.

MOSS NOT ONLINE: WRAP FUNCTION CANCELED

Cause: The Wrap Test function is canceled because MOSS is not online.

Action: Set the MOSS online and restart the wrap test.

MOUNT CORRECTLY THE DISKETTE, THEN PRESS SEND

Cause: Self-explanatory.

Action: None.

MOUNTED DISKETTE IS NOT A xxxxx

Cause: You were requested to mount a primary, secondary, third, fourth, fifth, or sixth diskette, but the diskette that you mounted is not the correct one.

Action: Mount the correct diskette.

NCP DUMP PURGE ON MOSS_E DISK IS CANCELED

Cause: There is problem with the MOSS to MOSS-E link.

Action: Check the MOSS indicators on the 3745 control panel and the *Basic Operations Guide*.

NCP TRSS SUPPORT NOT AVAILABLE: FUNCTION IGNORED

Cause: The function selected is not permitted if NCP does not support TRSS.

NCP/MOSS ERR.: FUNCTION CANCELED

Cause: A matching MOSS Interface Table (MIT) was not found for the selected TIC. NCP is set as not supporting TRSS. Since NCP is needed for the current function, it is canceled.

Action: Verify NCP generation.

NCP/MOSS ERR.: PRESS SEND TO CONTINUE

Cause: A matching MOSS Interface Table (MIT) was not found for the selected TIC. NCP is set as not supporting TRSS.

Action: Press SEND to continue the function. Verify the NCP generation.

NM NOT ALLOWED WHEN A CCU FUNCTION IS ACTIVE

Cause: You cannot select the CCU Normal Mode function if a CCU function has already been selected.

NO ANSWER FROM CCU CONTROL PROGRAM: WRAP FUNCTION CANCELED

Cause: The CCU control program does not respond to a MOSS request. A BER is created: type 01, ID 85.

Action: Check that MOSS is online (MOSS-ONLINE is displayed in MSA field c). If the control program supports the wrap tests, select the Wrap Test function and try again. If the problem persists, contact the appropriate service representative.

NO ANSWER FROM CONTROL PROGRAM: FUNCTION NOT PERFORMED

Cause: There was no answer from the control program when selecting the MOSS Online or MOSS Offline function.

Action: Check if the control program is running.

NO ANSWER FROM LINK TEST PROGRAM - FUNCTION CANCELED

Cause: The link test program did not reply within 2 minutes during initialization, or within 2 seconds if running.

Action:

1. Press the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program on the CCU.
3. Restart the test.
4. If the error persists, contact the appropriate service representative.

Note: The 2-minute time out may occur during initialization on a dial-up line because the connection was not established.

NO ANSWER TO ERROR STATUS REQUEST DURING ERROR RECOVERY

Cause: The scanner is not able to process the MOSS command; it did not answer during error recovery. A BER is created: type 01, ID 05.

Action:

1. Perform a 3745 IPL from the operator console (see “3745 IPL from the Operator Console (IPL)” on page 199).
2. If the error persists, contact the appropriate service representative.

NO CCU AVAILABLE: CHECK CCU INFORMATION IN THE CDF

Cause: There is no CCU available according to the CDF information.

Action: Check the CCU information in the CDF.

NO CCU SELECTED - FUNCTION CANCELED

Cause: The link test program has been loaded but it is impossible to determine which CCU is selected.

Action:

1. Re-IPL the link test program on the CCU connected to the link in test.
2. Restart the test.
3. If the error persists, contact the service representative.

NO CONTROL PROGRAM BUFFER: FUNCTION NOT PERFORMED

Cause: No control program buffer is available to execute your request.

Action: Try later.

NO FUNCTION VALUE

Cause: You did not enter a function value in FUNCTION ==>.

Action: Enter a function value in FUNCTION ==>.

NO NEW MCF IN FILE

Cause: Self-explanatory.

Action: None.

NO NEW MCL AVAILABLE. REQUEST CANCELED

Cause: There is no new MCL(s) on the MOSS-E disk to transfer.

Action: None.

NO OLD MCF IN FILE

Cause: Self-explanatory.

Action: None.

NO POWER SUPPLY INSTALLED

Cause: Power supplies are either installed or their status in the POS function is down.

Action: Check if the power supplies are installed. If they are installed, check that the power supply status in the POS function is up.

NO PROCEDURE TO CATALOG

Cause: You selected CATALOG but there is no procedure to catalog.

NO RECORD FOUND FOR THE SELECTED OPTION

Cause: Self-explanatory.

Action: None.

NO SCANNER ANSWER: CHECK CCU STATE AND IF NEEDED RE-IML CS

Cause: The scanner cannot answer MOSS commands because of the CCU or the scanner.

Action: Do one of the following:

- If the scanner is down and the CCU state is RUN (see MSA field g), re-IML the scanner then try again.
- If the CCU state is not RUN, perform a 3745 IPL from the operator console, re-IML the scanner, then try again.

NO SUPPORT FOR ALC LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on ALC lines. The Wrap Test function is canceled.

NO SUPPORT FOR AUTOCALL LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on autocall lines. The Wrap Test function is canceled.

NO SUPPORT FOR OEM LINE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on OEM lines. The Wrap Test function is canceled.

Action: None.

NO SWAP FILED

Cause: The Port Swap file is empty. This message is displayed when selecting the Port Swap function for the first time or when all switched ports have been reset.

NO TRA'S INSTALLED OR SWITCH ERROR: FUNCTION CANCELED

Cause: There are no token-ring adapters in the CDF, or the switch adapter is not initialized.

Action: Run CDF or run IPL to initialize the switch.

NO TRACE ACTIVE FOR LINE xxxx SCANNER xxxx

Cause: Self-explanatory.

Action: None.

NO VALID RECORDS FOUND

Cause: Self-explanatory.

Action: None.

NO 37CS PRESENT IN CDF: WRAP CANCELED

Cause: 3746-900 is not present in CDF: Self-explanatory.

Action: Check CDF

NON-CCU FUNCTION STILL PENDING

Cause: You tried to log off while a Menu 1 function was pending.

Action: Perform or terminate the pending function.

NON-OPERATIONAL EP DUALCOM LINE: WRAP FUNCTION CANCELED

Cause: The line is equipped with the EP Dualcom feature. The Wrap Test function cannot be performed on such lines.

Action: Do not perform a wrap test on this line.

NOT IMLED: INVALID LA TYPE FOR IML

Cause: The selected line adapter is not a scanner.

Action: Enter a scanner number.

NOT INSTALLED

Cause: The appropriate adapter or port is not installed or does not exist on this model.

NTT CABLE LEVEL FOR LIC11 V.35 or X.21 IS NOT ALLOWED

Cause: Self-explanatory.

Action: None.

NTT CABLE LEVEL FOR LIC12 IS NOT ALLOWED

Cause: Self-explanatory.

Action: None.

NUMBER OF LINK IPL PORTS IS GREATER THAN 8

Cause: Twin-standby mode with one CCU running supports a maximum of eight ports. You have more than eight ports.

Action: You must perform the Link IPL Ports function and delete the extra ports.

ONE LINE IS SWAPPED IN RANGE

Cause: You are about to delete a LIC that contains a swapped line.

Action: Reconsider before you delete the LIC.

ONLY ONE SCAN OR MODIFY ON SAME SCREEN

Cause: You can scan or modify only one patch at a time.

OPTION REFUSED: RESTORE DISK FROM DISKETTE

Cause: An attempt has been made to perform an EC microcode installation on a disk that has just been formatted. The disk must be restored from diskette.

Action: Perform the Restore from Diskette function before continuing.

PASSWORD HAS BEEN UPDATED

Cause: The request to update the local or remote password is successful.

Action: None.

PASSWORD MUST BE AT LEAST FIVE ALPHANUMERIC CHARACTERS LONG WITHOUT BLANKS

Action: Reenter the password correctly.

PASSWORD REJECTED: PANEL SERVICE MODE IS NOT 0

Cause: You entered a customer password when the service mode was not set to 0.

Action:

1. Set the service mode to 0 from the control panel.
2. IML the MOSS from the control panel or from the operator console.

PATTERN MUST CONTAIN AT LEAST 4 PAIRS OF HEX CHARACTERS

Cause: Your pattern contains fewer than four pairs of hexadecimal characters.

Action: Enter at least four pairs of hexadecimal characters. When your pattern is complete, enter C, then press SEND.

PLEASE WAIT, IML IN PROGRESS

Cause: Self-explanatory.

Action: None.

PORT SWAP ALREADY EXISTS

Cause: Self-explanatory.

Action: None.

PORT SWAP CHECKING IN ERROR

Cause: Self-explanatory.

Action: None.

PORT SWAP CHECKING REFUSED: MOSS NOT ONLINE

Action: Put MOSS online and retry.

PORT SWAP NOT FOUND

Cause: Self-explanatory.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: COMMAND NOT PERFORMED

Cause: An error occurred when transmitting the command to the power subsystem. A BER has been created.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: NEW CONFIGURATION TABLE IGNORED

Cause: An error occurred while transmitting the confirmation to the power subsystem. The new configuration table is therefore not taken into account by the power subsystem. This message comes from the result of option C.

Action: None.

POWER SUB-SYSTEM/MOSS ERROR: OPTION NOT AVAILABLE

Cause: An error occurred while communicating with the power subsystem after option C has been selected. A BER has been created by Power Interface Control code.

Action: None.

POWER SUPPLY OF CCU-A IS NOT OPERATIVE. CALL SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

PRESS BREAK TO STOP

Cause: The Display function is in refresh mode.

PRESS SEND TO EXIT THE FUNCTION

Cause: You have not confirmed your selection. The screen is blank.

Action: Press SEND to return to Menu 1.

PRESSING F1 CAUSES MOSS DOWN & DISK DATA DESTROYED

Cause: Self-explanatory.

Action: Re-IML.

PROBLEM DETECTED BY MOSS-E MICROCODE: REQUEST CANCELED

Cause: There is a microcode problem in the MOSS-E.

Action: Contact your service representative.

PROCEDURE IN STORAGE CANNOT BE EXECUTED

Cause: The selected procedure cannot be executed because it is not completely created or modified.

Actions:

- Creation: END must be the last instruction of the procedure.
- Modification: Once you have modified a procedure, do not forget to press F6.
- When creating a procedure, END must be the last instruction, or
- Once you have entered all the modifications, press F6.

PROCEDURE NAME ALREADY USED

Cause: The name of the procedure that you want to create is already used.

Action: Enter a procedure name that is not in the directory.

PROCEDURE NAME CANNOT START WITH CP

Cause: You cannot create, modify, erase, or catalog a procedure whose name starts with CP.

Action: If you want to modify such a procedure, you must copy it under another name and modify the copied procedure (see “Disk IPL Information (DII)” on page 147).

PROCEDURE NOT FOUND IN FILE

Cause: You selected a procedure that does not exist in the procedure file.

Action: Enter the name of an existing procedure.

PROCEDURE x CATALOGED

Cause: Procedure x is successfully cataloged. The procedure directory is automatically updated.

PROCEDURE x CREATED

Cause: Procedure x is created.

Action: You should catalog the procedure. However, before cataloging it, you may execute or modify it. The procedure just created will be lost unless you catalog it before you create, erase, modify, execute, or display **another** procedure.

PROCEDURE x ERASED

Cause: Procedure x is erased. The procedure directory is automatically updated.

PROCEDURE x MODIFIED

Action: You should catalog the procedure. However, before cataloging it, you may execute or modify it.

PROCESS REFUSED: UNKNOWN RETURN CODE FROM CTL PGM

Cause: The control program refused the port switching for a reason undefined to MOSS.

Action: Contact the appropriate service representative.

READ CHECKING IN PROGRESS: PLEASE WAIT SEVERAL MINUTES

Cause: Disk is being checked.

RECOVERY OF A CANCELED APPLY

Cause: When entering MCF after an apply was canceled, MCF tries to restore the apply part of the patch.

RECOVERY OF A CANCELED RESTORE

Cause: Self-explanatory.

Action: None.

RECOVERY OF A CANCELED UPGRADE

Cause: When entering MCF after a canceled upgrade, MCF restores all the patches applied in that previous upgrade.

Action: None.

REFRESH MODE: PRESS BREAK TO STOP REFRESH

Cause: Refresh mode is active.

Action: Press the break key to stop refresh.

REFUSED BY CTL PGM: ADAPTER TYPES MISMATCH

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: FALLBACK IN PROGRESS

Cause: Self-explanatory.

Action: Wait until the fallback is finished.

REFUSED BY CTL PGM: NEW LINE ADAPTER NOT INSTALLED

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: NEW PORT ALREADY DEFINED

Cause: The new port that you entered is not a spare.

Action: Enter a spare port.

REFUSED BY CTL PGM: OLD LINE ADAPTER NOT INSTALLED

Cause: Self-explanatory.

Action: None.

REFUSED BY CTL PGM: OLD PORT IS A NON-COMPATIBLE NEO LINE

Cause: Ports cannot be switched because the line is an OEM line.

REFUSED BY CTL PGM: OLD PORT IS AN EP LINE

Cause: The Port Swap function cannot be performed in an EP environment.

REFUSED BY CTL PGM: OLD PORT IS NOT INACTIVE

Cause: There are two possible causes:

1. The line for which you want to switch ports is still active.
2. The is a SIT trace running on the line.

Action: There are two possible actions:

1. If the line is active, deactivate it at the host.
2. Check for the SIT trace. If an SIT trace is running on the line, either:
   - Use the MOSS-E to check for the trace (there would be a window or icon for the trace)
   - Use VTAM to check for an External SIT Trace.

After the line is free, perform the Port Swap function.

REFUSED BY CTL PGM: OLD PORT IS UNIDENTIFIED

Cause: The source port that you entered is a spare.

Action: Enter a valid port then press SEND.

REFUSED BY CTL PGM: OLD PORT IS UNDEFINED

Cause: The source port that you entered is a spare.

Action: Enter a valid port.

REFUSED: CCU OF DESTINATION PORT NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

REFUSED: CCU OF SOURCE PORT NOT IDENTIFIED

Cause: Self-explanatory.

Action: None.

REFUSED: DESTINATION PORT IS INVALID

Cause: Self-explanatory.

Action: None.

REFUSED: DIRECTORY IS FULL

Cause: You cannot catalog a procedure because the maximum number of cataloged procedures (47) is already reached in the directory.

Action: If you want to catalog a procedure, you must erase a procedure that is already cataloged (see “Disk IPL Information (DII)” on page 147).

REFUSED: ENABLED IS ALREADY REQUESTED ON BOTH INTERFACES

Cause: You have selected TCS mode and there are two interfaces.

Action: Select TPS mode.

REFUSED: EXTERNAL TRACE RUNNING ON DESTINATION PORT

Cause: A trace was started by the control program.

REFUSED: EXTERNAL TRACE RUNNING ON SOURCE PORT

Cause: A trace was started by the control program.

REFUSED: FILE SPACE EXCEEDED

Cause: You cannot catalog a procedure because there is not enough space in the procedure file.

Action: If you want to catalog a procedure, you must erase a procedure that is already cataloged to free some space in the procedure file (see “Disk IPL Information (DII)” on page 147).

REFUSED FROM CDF: NEW PORT LINE ADAPTER NOT INSTALLED

Cause: No LIC or cable is installed, or a cable other than the one for modem or direct attachment is installed.

Action: Contact the appropriate service representative.

REFUSED FROM CDF: OLD PORT LINE ADAPTER NOT INSTALLED

Cause: No LIC or cable is installed, or a cable other than the one for modem or direct attachment is installed.

Action: Contact the appropriate service representative.

REFUSED: INCOMPATIBLE CLOCKING

Cause: Self-explanatory.

Action: None.

REFUSED: INCOMPATIBLE LA TYPES

Cause: You have tried to swap a TSS port and an HPTSS port.

REFUSED: INCOMPATIBLE LIC TYPES

Cause: The LIC types for the old and new ports are of different types.

REFUSED: INTERNAL TRACE RUNNING ON DESTINATION PORT

Cause: A trace was started by the MOSS and the destination port cannot be swapped.

Action: Cancel the trace.

REFUSED: INTERNAL TRACE RUNNING ON SOURCE PORT

Cause: A trace was started by the MOSS and the source port cannot be swapped.

Action: Cancel the trace.

REFUSED: MAX NUMBER OF MESSAGES REACHED

Cause: You cannot enter another message (DISP) in the procedure because the maximum number of messages (50) is already reached.

REFUSED: MAX NUMBER OF STEPS REACHED

Cause: You cannot insert another step in the procedure because the maximum number of steps (255) is already reached.

REFUSED: MOSS IS NOT ONLINE

Cause: You cannot perform the port swap function when MOSS is not in MOSS-ONLINE status.

Action:

- If MOSS is in MOSS-OFFLINE status, set MOSS to MOSS-ONLINE status.
- If MOSS is in MOSS-ALONE status, initialize the 3745.

REFUSED: NEW PORT IFA TYPE IS NOT LIC11 OR LIC12

Cause: Port swap tried on a port which is not a LIC11 or a LIC12.

Action: Enter a port number which is a LIC11 or a LIC12 or check the CDF-E.

REFUSED: NEW PORT ARC NOT PRESENT
REFUSED: NEW PORT CLP NOT AVAILABLE
REFUSED: NEW PORT LIC NOT AVAILABLE
REFUSED: NEW PORT LIC NOT INSTALLED
REFUSED: NEW PORT MUX NOT INSTALLED
REFUSED: NEW PORT NOT INSTALLED
REFUSED: NEW PORT TYPE IS NOT TIC3
REFUSED: OLD PORT ARC NOT PRESENT
REFUSED: OLD PORT CLP NOT PRESENT
REFUSED: OLD PORT CLP TYPE IS INVALID
REFUSED: OLD PORT TYPE IS NOT TIC3
REFUSED: OLD PORT LIC NOT INSTALLED
REFUSED: OLD PORT MUX NOT INSTALLED

REFUSED: OLD PORT NOT INSTALLED

Cause: Self-explanatory.

Action: Check with CDF-E the presence or status of the port.

REFUSED: ONE LINE IS SWITCHED. OTHER ONE IS NOT

Cause: Self-explanatory.

Action: None.

REFUSED: PORT TRACE INFORMATION NOT ACCESSIBLE DUE TO CCU/MOSS ERROR

Cause: The CCU rejected the MOSS request to get the port trace information.

Action: Check if a line adapter is disconnected. If so, reconnect it.

REFUSED: PORTS ARE NOT ATTACHED TO THE SAME CCU

Cause: Self-explanatory.

Action: None.

REFUSED: PORTS MUST HAVE THE SAME CLP TYPE

Cause: Self-explanatory.

Action: None.

REFUSED: PORT SWAP IS NOT AUTHORIZED ON ESCP OR CBSP

Cause: You are not authorized to do port swap on ESCP or CBSP

Action: Check with CDF-E to select another port.

REFUSED: SOURCE AND DESTINATION PORTS HVE THE SAME VALUE

Cause: Self-explanatory.

Action: None.

REFUSED: SOURCE PORT IS INVALID

Cause: Self-explanatory.

Action: None.

REFUSED: 3746-900 PORTS ARE INCOMPATIBLE WITH NON 3746-900 PORTS

Cause: Self-explanatory.

Action: None.

REJECTED FROM CCU CONTROL PROGRAM: WRAP FUNCTION CANCELED

Cause: The request from MOSS is rejected by NCP

Action: Check NCP generation

REMOTE CONSOLE CALLING

Cause: The remote console operator is trying to log on.

Action: You may log off to allow the remote console operator to log on.

REMOTE CONSOLE LOGON COUNTER HAS BEEN UPDATED

Cause: You entered a new counter value.

Action: None

REMOTE CUSTOMER PASSWORD AND REMOTE MAINTENANCE PASSWORD MUST BE DIFFERENT

Action: Enter different customer and remote maintenance passwords.

REQUEST IGNORED

Cause: Your request cannot be accepted in the present environment.

Action: Check how to enter your request in the section describing the function that you are selecting.

REQUEST IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

REQUEST IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT ACTIVE OR FROZEN

Cause: No trace has started.

REQUEST REFUSED: WAIT FOR FALLBACK COMPLETION (SEE ABOVE)

Cause: You have requested to terminate while fallback is in progress. Your request is refused.

Action: Wait until you see the message FALLBACK COMPLETE before terminating the fallback.

REQUEST REJECTED : CCU-A RUNNING

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED : CCU-B RUNNING

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED: DISK UPDATING NOT AVAILABLE

Cause: Another task is using the control information file.

Action: Try again later.

REQUEST REJECTED: DUMP FILE DOES NOT EXIST

Cause: You have attempted to purge a dump that does not exist.

Action: Press SEND to refresh the screen and erase the error message.

REQUEST REJECTED: I-SIT BUFFER NOT CONSISTENT

Cause: Self-explanatory.

Action: None.

REQUEST REJECTED : LA ARE CONNECTED

Cause: Line adapters are connected.

Action: None.

REQUEST REJECTED: NO ACTIVE LOAD MODULE ON DISK

Cause: You have attempted to set the automatic dump/load option but no active load module resides on the disk. The automatic dump/load option may be set only if an active load module resides on the disk.

Action: Press SEND to refresh the screen and erase the error message.

REQUEST REJECTED: NO I-SIT BUFFER AVAILABLE

Cause: Self-explanatory.

Action: None.

REQUESTED LINE ADDRESS IS INVALID FOR A TOKEN-RING

Action: Enter a valid line address.

RESET CCU CHECK IGNORED

Cause: You have tried to reset the CCU check condition but it was already reset.

RESET CCU COMPLETED

Cause: The immediate function CCU Reset is successfully completed.

Action: None.

RESET CCU FAILED

Cause: The CCU cannot be reset because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

RESET CCU NOT ALLOWED

Cause: The immediate function CCU Reset is not allowed while performing the CCU extend functions (for service personnel).

Action: None.

RESET IS COMPLETE

Cause: You switched port "b" back to port "a". The information in the Port Swap file about the switching from port "a" to port "b" has been removed.

RESTORE DISK FROM xxxxx DISKETTE IN PROGRESS

Cause: The disk is being restored from either the primary, secondary, third, fourth, fifth, or sixth diskette.

RESTORE NOT AUTHORIZED FROM THIS DISKETTE: PRESS SEND

Cause: You cannot restore the disk from an EC diskette.

Action:

- You can, from an EC diskette:
  1. Perform an EC installation.
  2. Mount the correct diskette.
  3. Terminate the Disk function.

  or
- You can restore the disk from backup diskettes.

RESUME IGNORED

Cause: F5 (RESUME) does not work in this case.

RESUME IGNORED ON LINE xxxx SCANNER xxxx: E-SIT ACTIVE

Cause: Self-explanatory.

Action: None.

RESUME IGNORED ON LINE xxxx SCANNER xxxx: NO I-SIT FROZEN

Cause: Self-explanatory.

Action: None.

RING INDICATOR MUST BE SET TO 'N'

Cause: The RING INDICATOR parameter is set to 'Y' while the SWITCHED LINE parameter is set to 'N'.

Action: When the SWITCHED LINE is set to 'N', the ANSWER TONE and RING INDICATOR parameters must be set to 'N'.

RSF CONSOLE CALLING

Cause: The RSF console operator is trying to log on.

Action: You may log off to allow the RSF console operator to log on.

SCANNER CANNOT BE CONNECTED: MOSS IS NOT ONLINE

Action: Set MOSS online (see page 245) and restart the IML as follows.

SCANNER CONNECTION REJECTED BY CCU CONTROL PROGRAM

Cause: The scanner that you IMLed is not recognized by the CCU control program. The scanner is not operational. A BER is created: type 01, ID 05.

Action:

1. Terminate the function.
2. Contact the appropriate service representative.

SCANNER CYCLE STEAL TO/FROM CCU FAILED

Cause: The scanner is not able to exchange data with the CCU. The scanner recovery failed. The error is in the scanner (incorrect cycle steal parameters). A BER is created: type 01, ID 05.

Action:

1. Re-IML the appropriate scanner.
2. If the error persists, perform a 3745 IPL from the operator console.
3. If the error still persists, contact the appropriate service representative.

SCANNER ERROR ON RECEIVE

Cause: A scanner error occurred.

Action:

1. Press the General Reset switch on the control panel to reset the 3745.
2. Re-IPL the link test program on the CCU.
3. Restart the test.

If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

SCANNER ERROR ON TRANSMIT

Cause: A scanner error occurred.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

SCANNER NOT INSTALLED

Cause: The line address that you specified corresponds to a scanner that is not installed.

Action: Check the line address and re-enter it.

SCANNER NOT OPERATIONAL - LINK TEST FUNCTION CANCELED

Cause: The scanner supporting the link to be tested is not operational.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

SEL# RANGE LIMITED TO n

Cause: To display a BER list, a BER index is built. This index has n entries. Any BER beyond this limit (n) cannot be displayed.

SELECTED PROCEDURE IS FROM STORAGE

Cause: The procedure that you have selected is already in storage because you have just created, displayed, or modified it. The procedure in storage and that in the procedure file may be at different levels.

Action: Do one of the following:

- Press F4, to use the procedure that is in the file, or
- Press F6, to use the procedure that is in storage.

SELECTED TIC NOT AVAILABLE: REQUEST REJECTED

Cause: The TIC you have selected is not shown as installed in the CDF.

SET MODE COMMAND FAILED - LINK TEST FUNCTION CANCELED

Cause: The scanner did not respond to a Set Mode command.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

SLOT CREATION REFUSED: LIC SPEED UNKNOWN DUE TO A CCU/MOSS ERROR

Cause: While the program was trying to read the LIC speed, a CCU/MOSS error occurred. This can happen when the MOSS is ONLINE or when PHASE 4 has not been passed.

Action: Check that MOSS is online and try again.

SOURCE AND DESTINATION PORTS HAVE THE SAME VALUE

Cause: The two addresses that you entered are the same.

Action: Enter the correct addresses then press SEND.

SOURCE DISK(ETTE) ERROR: FUNCTION CANNOT BE PERFORMED

Cause: An error occurred when trying to copy patches from one disk or diskette to another.

Action: Press F1 to leave the function.

SOURCE PORT ALREADY SWAPPED

Cause: You already switched port a to port b.

Action: None.

SOURCE PORT IS INVALID

Cause: Self-explanatory.

Action: Enter another value.

SOURCE PORT IS MISSING

Cause: Self-explanatory.

Action: Define the source port.

SPECIFIED POWER SUPPLY DOES NOT BELONG TO THIS FRAME

Cause: Self-explanatory.

Action: None.

SPECIFIED POWER SUPPLY IS ALREADY OFF

Cause: Self-explanatory.

Action: None.

SPECIFIED POWER SUPPLY IS NOT INSTALLED

Cause: Command Uxx or Dxx refers to supply block xx, which is not installed.

Action: None.

SPEED MUST BE BLANK WHEN DATA STREAMING = N

Cause: You have entered a value for the speed when data streaming is not supported.

Action: Enter a blank for the speed parameter.

SPEED MUST BE PROVIDED WHEN DATA STREAMING = Y

Cause: You have not entered a value for the speed when data streaming is supported.

Action: Enter a value for the speed parameter.

START CCU COMPLETED

Cause: The immediate function CCU Start is successfully completed.

Action: None.

START CCU FAILED

Cause: The CCU cannot be started because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

START CCU IGNORED

Cause: You are trying to start the CCU but it is already running.

START CCU NOT ALLOWED

Cause: You are trying to start the CCU but there is a CCU hardcheck or the CCU is reset.

Action:

- If there is a CCU hardcheck, reset the CCU check condition, then start the CCU (see page 339).
- If the CCU is reset, IPL the CCU (see page 199).

START NOT ALLOWED ON LINE xxxx SCANNER xxxx: TRACE IS FROZEN

Cause: Self-explanatory.

Action: None.

STEP 255 MUST BE THE END STATEMENT

Cause: The next step is the last one allowed (255).

Action: You must enter the END instruction.

STOP CCU COMPLETED

Cause: The immediate function CCU Stop is successfully completed.

Action: None.

STOP CCU FAILED

Cause: The CCU cannot be stopped because of a hardware error. A BER is created: type 01, ID 85.

Action: Re-IPL the CCU.

STOP CCU IGNORED

Cause: You are trying to stop the CCU but it is already stopped.

STOP CCU NOT ALLOWED

Cause: The immediate function CCU Stop is not allowed while performing the CCU extended functions (service personnel only).

Action: None.

STOP IGNORED

Cause: F4 (STOP) does not work in this case.

STORAGE SIZE REQUEST FAILED FOR CCU-A. CONTACT SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

STORAGE SIZE UNKNOWN FOR CCU-A. CONTACT SERVICE REPRESENTATIVE

Cause: An error occurred while upgrading the CDF.

Action: Contact the service representative.

SWITCH INCONSISTENCIES: CONTACT SERVICE PERSONNEL

Cause: The internal switch information is not compatible with the current 3745 configuration and mode.

Action: Contact the appropriate service representative.

SWITCHBACK HAS RESUMED

Cause: Self-explanatory.

Action: None.

SWITCHBACK IS CANCELED: PRESS F1

Cause: You have requested switchback, but either some lines on the CCU to be switched are not free, or some channel transmission groups are still in use over CAs being switched. Switchback is canceled.

Action: None.

SWITCHBACK NOT ALLOWED IN PRESENT CCU CONFIGURATION OR MODE

Cause: The 3745 is in single configuration, twin-standby mode, or in dual mode. The switchback function is not available in this configuration or mode.

Action: None.

SWITCHBACK NOT AVAILABLE IN PRESENT CCU CONFIGURATION

Cause: The 3745 is in twin-backup mode and the configuration is not switched to a single CCU.

Action: None.

TERMINAL DISCONNECTED

Cause: The remote operator console is disconnected for one of the following reasons:

- You have been inactive for a period of time exceeding the console disconnection time out (see page 272).
- You entered OFF on the remote console.
- You have been disconnected by the local console operator.

Action: Try to log on (if the local console is logged on, you cannot log on at the remote console).

TERMINAL DISCONNECTED FOR ALTERNATE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the alternate console operator logged on to the console.

Action: You may log on at the local operator console.

TERMINAL DISCONNECTED FOR ALTERNATE CONSOLE

Cause: The logon panel is available at the alternate console. Immediately after the alternate console was logged off, the logon panel is available at the local console during 15 seconds. If the local operator does not log on at the local console within this period, the local console is disconnected.

Action: To log on at the local console, you may request use of the local console via the 3745 control panel. Refer to the *3745 Problem Determination Guide* or to the reference card located to the left of the 3745 control panel.

TERMINAL DISCONNECTED FOR LOCAL CONSOLE

Cause: The alternate or remote console is disconnected. The operator has forced the control of the local console from the 3745 control panel.

Action: Try to log on. If the local console is logged on, you cannot log on at the remote or alternate console. In this case, contact the local operator.

TERMINAL DISCONNECTED FOR REMOTE CONSOLE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the remote console operator logged on to the console.

Action: You may log on at the local operator console.

TERMINAL DISCONNECTED FOR RSF CONSOLE

Cause: The local console is disconnected because the operator did not use the local console for more than 15 minutes and the RSF console has been logged on.

Action: You may log on at the local operator console.

THE BUFFER AND THE DISK ARE EMPTY

Cause: Self-explanatory.

Action: None.

THE FILE IS EMPTY: NO BER DATA

Cause: The BER data no longer exists.

Action: None.

THE HISTORY TABLE IS EMPTY

Cause: Self-explanatory.

Action: None.

THE NAME OF THE PROCEDURE TO BE CATALOGED IS: xxxx

Cause: The name of the procedure to be cataloged does not match the name of the procedure that is in 3745 storage (just created or modified).

Action: Enter the name indicated in the message.

THERE IS NO ACTIVE FUNCTION TO END. PRESS SEND

Cause: If you press F1 on either of the menu screens you receive this message.

THERE IS NO ALARM WAITING

Cause: If you press F3:ALARM while there is no alarm you receive this message. The message is automatically cleared after 10 seconds.

THIS CA CANNOT EXIST

Cause: Self-explanatory.

Action: None.

THIS CCU ALREADY SUPPORTS THE WHOLE CONFIG: PRESS F1

Cause: You have requested to perform a fallback of the whole configuration onto a CCU already supporting the whole configuration.

Action: None.

THIS LINE ADDRESS IS ALREADY A LINK IPL PORT

Cause: The line you specified is already defined as a link IPL port.

Action: Specify another line address.

THIS LINE IS NOT ATTACHED TO THIS CCU

Cause: The line you specified is not attached to the selected CCU.

Action: Select the correct CCU.

THIS LINE IS SWITCHED TO THIS CCU

Cause: The line address you specified is switched to the selected CCU, but it originally belongs to the other CCU.

Action: None.

TIMEOUT FOR REMOTE CONSOLE DISCONNECTION HAS BEEN UPDATED

Cause: You entered a new time out for the remote console.

Action: None.

TIMEOUT OCCURRED - TERMINAL DISCONNECTED

Action: Log on the remote console again.

TIMEOUT ON RECEIVE

This message applies only to the requester.

Cause: A time out occurred at the requester because no answer was received from the responder within the time out period.

Action:

1. Check that the responder is correctly IPLed on the CCU.
2. Check, at the responder side, that the controller address is correctly defined in the IPL Port Common Options screen.
3. Check the modems, cables and the line.
4. If the error persists, contact the appropriate service representative.

TIMEOUT ON SENDING REQUEST TO CTL PGM

Cause: The control program is not responding.

TIMEOUT ON TRANSMIT

Cause: The scanner did not reply to a command sent from the link test program within the time out period.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

TOO MUCH DATA RECEIVED

This message applies only to the requester.

Cause: More data than expected was received (extra data is ignored). However the received data *does* match the transmitted data.

Action:

1. Press F4 to continue the test.
2. If the error persists, contact the appropriate service representative.

TRA CANNOT BE SELECTED: CCU CONNECTION UNKNOWN

Cause: The switch is not initialized yet.

Action: Run IPL phase 1A.

TRA IS POWER DOWN, LINE CANNOT BE SELECTED

Cause: Self-explanatory.

Action: Bring up the power block.

TRA SELECTED IS NOT INSTALLED: REQUEST REJECTED

Cause: TRA selected is not present in the CDF.

TRANSMISSION ERROR ON RECEIVE

Cause: The scanner indicated a transmission error on receive.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

TRANSMISSION ERROR ON TRANSMIT

Cause: The scanner indicated a transmission error on transmit.

Action:

1. Re-IPL the link test program on the CCU.
2. Restart the test.
3. If the error persists, contact the appropriate service representative.

Notes:

1. The SCF, LCS, and SES are also displayed for this type of error.
2. Some errors of this type may disable the link. In this case, the F4 key is not made available and LINK DISABLED - LINK TEST FUNCTION CANCELED is displayed.

UNABLE TO LOAD MODULE: FUNCTION CANCELED

Cause: The load module cannot be loaded.

Action: Contact the appropriate service representative.

UNABLE TO PERFORM WTT ON THIS LIC, SCANNER NOT INSTALLED

Cause: Self-explanatory.

Action: Check the CDF

UNABLE TO PERFORM WTT ON THIS LIC, LIC NOT INSTALLED

Cause: Self-explanatory.

Action: Check the CDF

UNABLE TO SET LINE TO WRAP MODE: WRAP FUNCTION CANCELED

Cause: The wrap tests cannot be performed on the line that you specified, for one of the following reasons:

- The scanner is not IMLed (refer to IMS function on page 197).
- The modem is not powered on.
- The modem is not set to the appropriate test position.
- There is a hardware error in the modem, cable, or scanner.

The error code is given in the line communication status (LCS) byte on the Wrap Test Result screen. A BER is created: type 11.

Action: Check if the line address is valid. If it is, check if the modem is powered on and set to the appropriate position. In any other case, contact the appropriate service representative.

UNAUTHORIZED ACCESS - TERMINAL DISCONNECTED

Cause: The remote console password has been deactivated.

Action: Contact the person responsible for password management.

UNDEFINED F KEY

Cause: You pressed an F key that is not displayed on the screen.

Action: Do one of the following:

- Press one of the F keys displayed on the screen, if any, or
- Enter requested input.

UNKNOWN STATUS RECEIVED: WRAP FUNCTION CANCELED

Cause: Invalid status from NCP

Action: Check NCP generation

UNRECOVERABLE ERROR: PLEASE RE-FORMAT

Cause: Self-explanatory.

Action: Perform a disk initialization. If the problem persists, change the disk.

UPDATE OF THE CDF FILE SUCCESSFUL

Cause: Self-explanatory.

Action: None.

'VERIFY DATA' AND 'REPLACE DATA' HAVE DIFFERENT LENGTHS

Cause: Self-explanatory.

Action: None.

'VERIFY DATA' DOES MATCH 'MODULE DATA'

Action: Check the patch.

WARNING: ABEND PROCEDURE

Cause: Self-explanatory.

Action: None.

WARNING: AT LEAST ONE TARGET VALUE > END STEP NUMBER

Cause: While creating or modifying the procedure, you entered a GOTO, HALT, or WAIT target value that is greater than the step number of the END instruction.

Action: Correct the target value before cataloging or executing the procedure.

WARNING: CHECK AT THE TAILGATE THAT AUI CABLE IS PLUGGED FOR THE DESTINATION PORT

Cause: Self-explanatory.

Action: Check cable connection before returning to the PSF function.

WARNING: INCOMPATIBLE DSR INITIALIZATION PARAMETERS

Cause: The line protocols are not compatible.

Action: Press SEND to continue. The line protocols might not have been updated. Therefore, port switching may be possible. You may cancel the switch request by pressing F1.

WARNING: SWAP IS IN DELETED RANGE

Cause: If you delete the LIC you will delete the swap that is on one of the lines.

WRAP CONTROL LEAD AT LIC LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP CONTROL LEAD AT LOCAL MODEM LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP CONTROL LEAD AT REMOTE MODEM LEVEL NOT ALLOWED

Cause: The wrap test option selected when initializing the wrap test is not correct.

Action: Retry by selecting the correct option.

WRAP FUNCTION CANCELED ON OPERATOR REQUEST

Cause: You canceled the Wrap Test function by pressing F5.

WRAP TEST CANCELED, ABNORMAL ALC INDICATION FROM CP

Cause: ALC not supported by the CP.

Action: None.

WRAP TEST CANCELED, BUFFERS NOT AVAILABLE

Cause: Self-explanatory.

Action: Retry.

WRAP TEST CANCELED, BUFFERS TEMPORARILY NOT AVAILABLE

Cause: Self-explanatory.

Action: Retry.

WRAP TEST CANCELED, CCU/MOSS ERROR

Cause: Self-explanatory.

Action: Retry and if the problem persists contact the appropriate service representative.

WRAP TEST CANCELLED, CDF NOT CREATED

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED, ERROR DETECTED BY SCANNER

Cause: Self-explanatory.

Action: Retry and if the problem persists contact the appropriate service representative.

WRAP TEST CANCELLED, ERROR IN LIC ACCESS

Cause: 3745 CDF access failed.

Action: Check the CDF.

WRAP TEST CANCELED: FALLBACK IN PROGRESS

Cause: Fallback occurred.

Action: Retry after fallback.

WRAP TEST CANCELED, INVALID LCD

Cause: The line communication definition is invalid.

Action: None.

WRAP TEST CANCELED, LINE IS NOT ON THE CONNECTED CCU

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED, LINE NOT DISABLED/DEACTIVATED

Cause: Self-explanatory.

Action: Deactivate the line.

WRAP TEST CANCELED, LINE NOT SYSTEM GENERATED

Cause: Self-explanatory.

Action: Check NCP generation

WRAP TEST CANCELED, LINE TEMPORARILY NOT AVAILABLE

Cause: Self-explanatory.

Action: Retry.

WRAP TEST CANCELED, LINE TEST ACTIVE

Cause: Self-explanatory.

Action: None.

WRAP TEST COMPLETED, LINE TRACE ACTIVE

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED, LINES ARE NOT PRESENT IN THIS LIC

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELLED, MOSS NOT ONLINE

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED, NON-OPERATIONAL EP DUALCOM LINE

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED, NO SUPPORT FOR AUTOCALL LINE

Cause: Autocall line not supported by the CP.

Action: None.

WRAP TEST CANCELED, NO SUPPORT FOR OEM LINE

Cause: Self-explanatory.

Action: None.

WRAP TEST CANCELED: SCANNER AND/OR LINE TIME OUT, CALL FOR IBM SERVICE

Cause: There is no answer from the scanner. The wrap test cannot be performed on this LIC.

Action: Contact the appropriate service representative.

WRAP TEST COMPLETED

Cause: Self-explanatory.

Action: None.

WRAP TEST COMPLETED, MODEM SELF TEST IS KO

Cause: There is a problem on the modem.

Action: Check the modem.

WRAP TEST COMPLETED, MODEM SELF TEST IS OK

Cause: Self-explanatory.

Action: None.

WRAP TEST COMPLETED. THE LIC IS FAULTY

Cause: The wrap has been performed the number of times that you specified. The test is now completed and the LIC is faulty.

Action: Replace the LIC. Refer to the *3745 Connection and Integration Guide*.

WRAP TEST COMPLETED: THE LIC IS OK

Cause: The wrap has been performed the number of times that you specified. The test is now completed.

Action: If an incorrect pattern is indicated, press SEND to display it.

WRAP TEST IN PREPARE PHASE, PLEASE WAIT 30 SECONDS

Cause: This is the normal procedure for the automatic wrap test.

Action: None.

WRAP TEST STARTED, PLEASE WAIT 30 SECONDS

Cause: This is the normal procedure for the automatic wrap test.

Action: None.

WRAP TEST STOPPED BY NCP

Cause: Self-explanatory.

Action: None.

WRAP TEST STOPPED ON OPERATOR REQUEST

Cause: Self-explanatory.

Action: None.

WRAP TEST SUCCESSFUL

Cause: Self-explanatory.

Action: None.

WRAP TEST UNSUCCESSFUL, ERRONEOUS PATTERN(S) RECEIVED

Cause: The wrap has been performed the number of times that you specified. The test is now completed and unsuccessful.

Action: Press SEND to display the incorrect pattern. Perform the actions recommended by the *3745 Problem Determination Guide*.

WRAP TEST UNSUCCESSFUL, SOME DATA NOT RECEIVED

Cause: The wrap has been performed the number of times that you specified. The test is now completed and unsuccessful.

Action: Press SEND to display the incorrect pattern. Perform the actions recommended by the *3745 Problem Determination Guide*.

WRITE ERROR ON SECTOR 1 OR 2: CHANGE DISK

Cause: Self-explanatory.

Action: Change the disk.

WRITE PROTECTED DISKETTE

Cause: You tried to write on a protected diskette, or an unprotected diskette that was incorrectly inserted.

Action: Mount the diskette correctly.

xxxxx DISKETTE CHECKING IN PROGRESS

Cause: The xxxxx diskette is being checked.

xxxxx DISKETTE IS NOT THE ONE ALREADY CHECKED

Cause: The diskette that you mounted is not the xxxxx diskette that has just been checked.

Action: Mount the correct xxxxx diskette.

X.21 INVALID STATE

Cause: 3746-900 external box error found:

Action: Check the DCE or the DCE connection (local or remote).

X.21 LOOP TIME OUT

Cause: 3746-900 external box error found:

Action: Check the DCE or the DCE connection (local or remote).

YOU MAY SELECT ANOTHER OPTION

Cause: When CCU-B was IMLed errors were found and CCU-A is down.

Action: Contact the appropriate service representative.

YOU MUST CANCEL OR FORCE THE SWITCHBACK

Cause: Self-explanatory.

Action: None.

YOU MUST CONFIRM YOUR SELECTION

Cause: Self-explanatory.

Action: None.

YOU MUST INITIALIZE THE CCU(S) BEFORE PRESSING F2

Cause: Self-explanatory.

Action: None.

YOU MUST NOW PERFORM AN IML FROM CONTROL PANEL NO OTHER ACTION IS POSSIBLE

Cause: The EC is correctly installed or the disk is correctly restored.

YOU MUST NOW PERFORM AN IML FROM DISK

Cause: Self-explanatory.

Action: Perform an IML from disk.

YOU MUST SAVE THE COMPLETE SET OF DISKETTES

Cause: Self-explanatory.

Action: Save the set of diskettes.

YOU MUST SELECT AN OPTION

Cause: Self-explanatory.

Action: None.

56 KBPS LIC(S)6 MISPLUGGED: PLUG IN ODD POSITION

Cause: One or several 56 kbps LIC6 are plugged in even position(s). They have been ignored by the CDF.

Action: Plug the LIC(s) in odd position(s). The affected LIC(s) will stay ignored by the CDF until you perform another LIC add/replace operation in the CDF.
Refer to the *3745 Connection and Integration Guide* to plug them at the right place.

37CS CONFIG. UNAVAILABLE, MOSS/MOSS-E LAN FAILURE: WRAP CANCELED

Cause: CDF-E not available because the link MOSS/MOSS-E is down.

Action: Check the MOSS/MOSS-E LAN connection, and if the problem persists contact the appropriate service representative.

37CS CONFIG. UNAVAILABLE, MOSS-E FAILURE: WRAP CANCELED

Cause: The MOSS-E rejected the MOSS command. MOSS-E processor error.

Action: Check the MOSS/MOSS-E LAN connection, and if the problem persists contact the appropriate service representative.

37CS INTERNAL BOX ERROR FOUND: WRAP TEST STOPPED

Cause: 3746-900 internal box error: Self-explanatory.

Action: Retry, and if the problem persists, on MOSS-E, select the 3746-900 menu then on the Problem management menu display alarms and errors. If needed contact the appropriate service representative.

Appendix E. VTAM Command Sense Data

Note to Reviewers

The following is a new appendix to be added to the 3745 Advanced Operations Guide.

Please send your comments to Jack Roquemore, SCSITE16 at LGEVMXA, 6081. Please do not use SCSITE26 at LGEVM1 as I only use it for my international mail.

The following is list of hexadecimal return codes for the VTAM commands that are sent to the 3745 MOSS to handle IPLs and the various dumps.

Refer to the following documents for information about all the sense codes related to VTAM and NCP:

- *VTAM: Messages and Codes*, SC31-6433
- *NCP: Messages and Codes*, SC30-3169.

PIU = Path Information Unit.

08090000

Cause: The NCP, MOSS, or CSP file needed for a dump transfer is empty causing the file transfer to end. (This may be normal.)

Action: Check that the transfer command used the correct NCP, MOSS, or CSP file name.

PIU: DISPSTOR (Display Store)

080A0000

Cause: There is an invalid dump address, invalid NCP load module address, or invalid load module entry point. VTAM/SSP may be supplying incorrect information for the dump command.

Action: Ask your system programmer to check the VTAM/SSP programs or re-generate the load module.

PIU: DUMPTEXT, IPLFINAL, or IPLTEXT

08120000

Cause: There are no more NCP buffer available to send an alert or transfer a dump. (This maybe due to the NCP being in the SLOWDOWN mode.) The operation was canceled.

Action: Find out why there are not enough buffers to support the file transfer and repeat the file transfer when there is less traffic through the NCP.

PIU: DISPSTOR (Display Storage)
RECMS (Record Formatted Maintenance Statistics)

0812001D

Cause: The NCP dump was lost. There is already a dump on the disk and there is not enough space on the MOSS hard disk to save a new dump. The command FORCE_DUMP was not processed.

Action: Transfer an existing dump to the host and then purge it from the MOSS fixed disk. Try the FORCE_DUMP command again.

PIU: DUMPINIT

08150000

Cause: The command was not processed because an IPL or dump is already in progress.

Action: Wait until the IPL or dump is finished and retry the command.

PIU: IPLINIT or DUMPINIT

08150005

Cause: Another command is being processed using the NCP load module specified in a ADD or REPLACE command just issued.

Action: Wait until the other VTAM or the MOSS command finishes and then retry the new command again.

PIU: IPLINIT

081A0000

Cause: A message has been received out of sequence or its origin address field (OAF) is different than the previous message.

Action: Check that two VTAMs are not attempting to add, rename, or load the same NCP load module at the same time.

PIU: Any valid PIU.

081C0000

Cause: The command was not processed due a MOSS fixed disk error.

Action: Call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: Any valid PIU.

084B0005

Cause: The MOSS fixed disk cannot be accessed to process the ADD, REPLACE, PURGE, or TIMED_IPL command

Action: Check if the 3745 is in the diskette mode. If it is, retry the command when the 3745 is in the disk mode.

If the 3745 is not in the diskette mode, call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: IPLINIT, IPLTEXT, or IPLFINAL

084F0001

Cause: The MOSS disk is full: a NCP load module could not be stored.

Action: Purge a load module from the MOSS fixed disk to make room for the new load module.

PIU: IPLINIT

08790001

Cause: The command to load a NCP load module during an IPL was not completed due a MOSS fixed disk error.

Action: Call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: IPLINIT

08790002

Cause: The command to ADD, PURGE, or REPLACE a NCP load module was not processed due a MOSS fixed disk error with the load module file.

Action: Call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: IPLTEXT

08790003

Cause: The command to ADD, PURGE, or REPLACE a NCP dump was not processed due a MOSS fixed disk error with the control information file.

Action: Call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: IPLFINAL

08970014

Cause: The FORCE_DUMP command cannot be processed for one of the following reasons:

- There is no load module on the MOSS fixed disk
- The automatic IPL flag is not set
- The 3745 is in the diskette mode.

Action: Either:

- Save a load module on the MOSS fixed disk with DUMPLOAD=YES

  or

- Retry the command when the 3745 is in the disk mode.

PIU: DUMPINIT

089A0001

Cause: There is no NCP load module on the MOSS fixed disk with the name specified in the command.

Action: Retry the command with the name of a load module that is on the MOSS fixed disk.

PIU: IPLINIT

089A0002

Cause: There is already a NCP load module on the MOSS fixed disk with the name specified in the command.

Action: Either:

- Retry the command with the name of a load module that is not on the MOSS fixed disk

  Or

- Use the Replace option with the command to replace the existing load module with a new load module.

PIU: IPLINIT

089A0003

Cause: The NCP load module for a CANCEL_TIMED_IPL command does not have the timed IPL information set.

Action: Check the exact spelling of the load module name and retry the command.

PIU: IPLINIT

089A0004

Cause: For the same load module a second TIMED_IPL command time is less than five minutes after the previous TIMED_IPL command. This second command was not processed.

Action: Retry the TIMED_IPL command again with a time difference greater than five minutes.

PIU: IPLINIT

10020000

Cause: A SNA message (PIU) has an incorrect length.

Action: Contact your system programmer.

PIU: Any valid PIU.

10030000

Cause: The VTAM command was not recognized by the MOSS as a valid command.

Action: Check that the EC microcode level of the MOSS supports the command.

PIU: IPLINIT

10050000

Cause: The NCP, MOSS, or CSP file needed for a dump transfer has completed its processing causing the file transfer to end, but the dump file is incomplete and may not be valid.

Action: Reproduce the situation that led to the dump and try the transfer again.

If the problem persists, call your 3745 maintenance representative to repair or replace the MOSS fixed disk.

PIU: DISPSTOR (Display Store)

10070000

Cause: The PIU format is not supported.

Action: Check that you are using a valid command for the 3745.

If the command is valid, check that the EC microcode level of the MOSS supports the command.

80060000

Cause: There is a bad PIU format: the FID is not 1.

Action: Ask your system programmer to check the VTAM/SSP programs.

80070000

Cause: There is a bad PIU format: the PIU is segmented when it should not be.

Action: Ask your system programmer to check the VTAM/SSP programs.

800C0000

Cause: There is a bad PIU format: the data count field does not correspond to the length of the data.

Action: Ask your system programmer to check the VTAM/SSP programs.

Abbreviations, Glossary, Bibliography, and Index

List of Abbreviations

abend	abnormal end of task
ABP	branch trace parameter function
AC	alternating current
ACF	Advanced Communications Function
ACU	automatic calling unit
ADDR	address
AIO	adapter-initiated operation
ARC	active remote connector
ASCII	American National Standard Code for Information Interchange
BCK	bypass CCU check function
BER	box event record
BIK	bypass IOC check function
bps	bits per second
BSC	binary synchronous communication
BT	branch trace
CA	channel adapter
CAB	channel adapter board
CADS	channel adapter drive switch
CBT	conditional branch trace function
CCITT	Comite Consultatif International Telegraphique et Telephonique. The International Telegraph and Telephone Consultative Committee.
CCU	central control unit
CD	carrier detector
CDF	configuration data file
CE	customer engineer
CID	channel interface display function
CLDP	controller load/dump program
CLP	communication line processor
CNM	CCU normal mode function
CP	control program
CPS	call progress signal
CR	call request
CRI	compare register immediate
CS	communication scanner
CSP	communication scanner processor
CSR	CCU select/release function
CST	CCU status function
CTS	clear to send
DAL	display alter function
DC	direct current
DCE	data circuit-terminating equipment
DEX	data exchange function
DFA	disk file adapter
DIF	disk function
DII	disk IPL information
DLE	data link escape character
DLO	1) data line occupied 2) display long function
DMA	direct memory access
DMSW	direct memory access switch
DP	digit present
DPR	digit present request
DRS	data rate select
DSC	distant station connected
DSR	data send ready
DTE	data terminal equipment
DTR	data terminal ready
DX	duplex
EAC	Ethernet adapter card
EBCDIC	extended binary-coded decimal interchange code
EC	engineering change
EIA	Electronic Industries Association
EIA 232D	EIA standard
EIB	error intermediate block
EID	ESS interface display function
ELA	Ethernet LAN adapter
ELD	event log display function
ENQ	enquiry
EOT	end of transmission
EP	emulation program
EPO	emergency power-off
ESC	emulation sub-channel
ESCH	highest emulation sub-channel
ESCL	lowest emulation sub-channel
ESS	Ethernet-type LAN subsystem

ETB	end-of-transmission block character
ETG	Ethernet tail gate
ETX	end-of-text character
FCC	Federal Communications Commission
FCS	final control sequence
FES	front-end scanner
FESH	front-end scanner high-speed
FESL	front-end scanner low-speed
FRU	field replaceable unit
ft	foot
HDLC	high-level data link control
hex	hexadecimal
HPTSS	high-performance transmission subsystem
HSS	high-speed scanner
I	indicator
ICC	interface control check
ICF	internal clock function
ID	identifier
IEEE	Institute of Electrical and Electronics Engineers
IL3	CCU level-3 interrupt function
IML	initial microcode load function
IMS	scanner IML function
INFO	information
INTRPT	interrupt
INOP	inoperative (line, DCE, or terminal)
I/O	input/output
IOC	input/output control
IOSW	input/output switch
IPL	initial program load function
ITB	intermediate text block
k	kilo, 1 000
KB	kilobyte; 1024 bytes
KBD	keyboard
kbps	kilobits per second
kHz	kilohertz
LA	line adapter
LAB	line adapter board
LAN	local area network
LCB	line connection box
LCBB	line connection box base
LCBE	line connection box expansion
LCD	line control definer
LCS	line communication status
LIB	line interface coupler board
LIC	line interface coupler
LIPT	link IPL port trace
LID	line interface display function
LKP	link IPL port function
LR	load register (instruction)
LSS	low-speed scanner
LSSD	level-sensitive scan design
LTQ	link test requester function
LTS	link test responder function
LU	logical unit
m	meter
MAC	MOSS adapter card
MB	megabyte; 1 048 576 bytes
Mbps	megabits per second
MCA	MOSS console adapter
MCF	microcode fix function
MIOC	MOSS input/output control
MIOH	MOSS input/output halfword
MLM	multiple load module
MLT	machine level table function
MOF	MOSS offline function
MON	MOSS online function
MOSS	maintenance and operator subsystem
MOSS-E	MOSS extended
MSA	machine status area
MT	modem test
MUX	multiplex function
NAK	negative acknowledgment character
NCP	Network Control Program
NCTE	network channel terminal equipment
NRZ-1	non-return-to-zero change-on-ones recording
NRZI	see NRZ-1
NS	new sync
NSC	native sub-channel address
NTRI	NCP token-ring interconnection

NTT	Nippon Telegraph and Telephone (Japanese PTT)
OEM	original equipment manufacturer
PC	personal computer
PEP	partitioned emulation programming
PIO	program-initiated operation
PIU	path information unit
PLC	power logic card
PND	present next digit
POR	power-on reset
POS	power services
PRC	processor
PS	1) power supply 2) personal system
PSF	port swap function
PSW	password function
PTT	Post, Telephone, and Telegraph Administration
PUC	processor unit card
PWI	power indication
PWS	password management
R	receive
RAC	reset address compare function
RBT	Reset Branch Trace function
RCK	Reset CCU Check function
RCL	Reset CCU/LSSD function
RD	receive data
RETAIN	Remote Technical Assistance Information Network
RFS	ready for sending
RI	ring indicator
RIO	reset IOC function
RIS	reset I-step function
RLA	remote load activation
RLSD	receive line signal detector
RPO	remote power-off
RPQ	request for price quotation
RS	register-to-storage
RS 366	EIA standard
RSF	remote support facility
RST	reset CCU function
RTAM	Remote Terminal Access Method
RTS	request to send
RVI	reverse interrupt
s	second
SAC	set address compare function
SAT	stand-alone link test function
SBT	set branch trace function
SCK	stop on CCU check function
SCTL	storage control card
SDLC	synchronous data link control
SES	secondary status
SIK	stop on IOC check function
SIP	set I-step function
SIT	scanner interface trace function
SL	serial link
SNA	Systems Network Architecture
SOH	start of heading
SS	start-stop
SSP	System Support Programs
STP	stop CCU function
STR	start CCU function
STX	start of text
SYSGEN	system generation
T	transmit
TC	test control
TCM	thermally-controlled module
TCS	two-channel switch
TI	test indicator
TIC	token-ring interface coupler
TID	TRSS interface display function
TIM	time services function
TPS	two-processor switch
TRA	token-ring adapter
TRID	token-ring interface display
TRM	token-ring multiplexer
TRSS	token-ring subsystem
TSO/VTAM	Time Sharing Option for VTAM
TSS	transmission subsystem
TTD	temporary text delay
T1	US service for very high speed transmissions at 1.536 Mbps
VTAM	Virtual Telecommunications Access Method

V.22 bis	CCITT recommendation V.22 bis
V.23	CCITT recommendation V.23
V.24	CCITT recommendation V.24
V.25	CCITT recommendation V.25
V.28	CCITT recommendation V.28
V.35	CCITT recommendation V.35
WACK	wait-before-transmitting-positive-acknowledgment character
WTT	wrap test function
XI	X.25 SNA Interconnection
X.20 bis	CCITT recommendation X.20 bis
X.21	CCITT recommendation X.21
X.21 bis	CCITT recommendation X.21 bis
X.25	CCITT recommendation X.25

Glossary

This glossary defines all new terms used in this manual. It also includes terms and definitions from the *IBM Dictionary of Computing,* SC20-1699.

alarm. A message sent to the MOSS operator console. In case of an error, a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error, a reference code identifies the nature of the error.

alone. Status of MOSS when the latter is operational while the CCU control program is not loaded or no longer operational.

asynchronous transmission. Transmission in which each character is individually synchronized, usually by the use of start and stop elements. The start-stop link protocol, for example, uses asynchronous transmission. Contrast with *synchronous transmission*.

auto-answer. A machine feature that allows a DCE to respond automatically to a call that it receives over a switched line.

autoBER. A program that automatically analyzes a BER file.

automaint. A function that uses autoBER to isolate failing FRUs.

auto-call. A machine feature that allows a DCE to initiate a call automatically over a switched line.

availability. The degree to which a system or resource is ready when needed to process data.

Bell 212A. Bell recommendations on transmission interface.

binary synchronous communication (BSC). A uniform procedure, using a standardized set of control characters and character sequences, for synchronous transmission of binary-coded data between stations.

block multiplexer channel. A multiplexer channel that interleaves blocks of data. See also byte multiplexer channel. Contrast with *selector channel*.

box event record (BER). Information about an event detected by the controller. It is recorded on the disk/diskette and can be displayed on the operator console for event analysis.

Note: The word *box* is used instead of *controller* to contrast with the *network* in which the controller is only a component.

byte multiplexer channel. A multiplexer channel that interleaves bytes of data. See also block multiplexer channel. Contrast with *selector channel*.

central control unit (CCU). In the 3745, the controller hardware unit that contains the circuits and data flow paths needed to execute instructions and to control its storage and the attached adapters.

channel adapter (CA). A communication controller hardware unit used to attach the controller to a host processor.

channel interface. The interface between the controller and the host processors.

clear channel. Mode of data transmission where the data passes through the DCE and network, and arrives at the receiving communication controller (for example, the IBM 3745.) unchanged from the data transmitted. The DCE or network can modify the data during transmission because of certain network restrictions, but must ensure the received data stream is the same as the transmitted data stream.

command list. In the NetView program, a sequential list of commands and control statements that is assigned a name. When the name is invoked (as a command), the commands in the list are executed.

communication common carrier. In the USA and Canada, a public data transmission service that provides the general public with transmission service facilities. For example, a telephone or telegraph company (see also *Post, Telephone, and Telegraph* for countries outside the USA and Canada).

communication controller. A communication control unit that is controlled by a program stored and executed in the unit. Examples are the IBM 3705, IBM 3725/3726, IBM 3720, and IBM 3745 models 130, 150, 160, 170, 210, 310, 410, and 610.

communication scanner. See *line adapter*.

communication scanner processor (CSP). The processor of a scanner.

communication subsystem. The part of the controller that controls the data transfers over the transmission interface.

configuration data file (CDF). A MOSS file that contains a description of all the hardware features (presence, type, address, and characteristics).

control panel. A panel that contains switches and indicators for the customer's operator and service personnel.

control program. A computer program designed to schedule and to supervise the execution of programs of the controller.

control subsystem. The part of the controller that stores and executes the control program, and monitors the data transfers over the channel and transmission interfaces.

customer engineer. See IBM service representative.

data circuit-terminating equipment (DCE). The equipment installed at the user's premises that provides all the functions required to establish, maintain, and terminate a connection, and the signal conversion between the data terminal equipment (DTE) and the line. For example, a modem is a DCE.

Note: The DCE may be a stand-alone equipment or integrated in a 3745.

data host. A host running application programs only.

data terminal equipment (DTE). That part of a data station that serves as a data source, data link, or both, and provides for the data communication control function according to protocols.

direct attachment. The attachment of a DTE to another DTE without a DCE.

direct-current interlock (DCI). A mode of data transmission over an I/O interface to enable communication between data processing systems through a channel.

direct memory access (DMA). Mechanism permitting an adapter to access the storage without any control program interaction.

diskette. A thin, flexible magnetic disk, and its protective jacket, that records diagnostics, microcode, and 3745 files.

diskette drive. A mechanism that reads and writes diskettes.

diskette management. Also referred to as remote load activation. MOSS function which allows loading and activation of NCP or PEP on a remote communication controller through switched subarea links.

duplex transmission. Data transmission in both directions at the same time. Contrast with *half-duplex*.

EIA 232D, 336. EIA recommendations on transmission interface.

Emulation Program (EP). An IBM licensed program that allows a channel-attached communication controller to emulate the functions of an IBM 2701 Data Adapter Unit, an IBM 2702 Transmission Control, or an IBM 2703 Transmission Control, or an IBM 3705 Communication Controller.

error recovery. The process of correcting or bypassing the effects of a fault to restore a computer system to a prescribed condition.

Ethernet LAN adapter (ELA). Line adapter for Ethernet-type network, composed of one communication scanner processor card (CSP), and one Ethernet adapter card (EAC).

Ethernet-type subsystem (ESS). The part of the controller that controls the data transfers over an Ethernet V2 or IEEE 802.3 local area network.

fallback. In twin backup mode, a state where the traffic of the failing CCU has been redirected to the second one.

In standby mode, a state where the traffic of the failing CCU has been redirected to the standby CCU after it is IPLed.

front-end scanner (FES). A circuit that scans the transmission lines, serializes and de-serializes the transmitted characters, and manages the line services. It is part of the scanner.

half-duplex. Data transmission in either direction, one direction at a time. Contrast with *duplex*.

hard-check. An indication that an error is due to a hardware failure.

high-performance transmission subsystem (HPTSS). The part of the controller that controls the data transfers over the high-speed transmission interface (speed up to 2 Mbps).

high-speed scanner. Line adapter for lines up to two million bps. It is composed of a communication scanner processor (CSP) and a front-end high-speed scanner (FESH).

high-speed transfer. A mode of high-speed data transmission over an I/O interface to enable communication between data processing systems through a channel.

hit. In cache operation, indicates that the information is in the cache storage.

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host*.

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to commence operation.

input/output control (IOC). The circuit that controls the input/output from/to the channel adapters and scanners via the IOC bus.

internal clock function (ICF). A LIC function that provides a transmit clock for sending data, and retrieves a receive clock from received data, when DCEs or direct-attached terminal do not provide those timing signals.

LIB. A line interface base which houses:

- One multiplexer
- Up to eight LICs.

line. See *transmission line*.

line adapter (LA). The part of the TSS, HPTSS, ESS, or TRSS that scans and controls the transmission lines. Also called *scanner* or *communication scanner*.

For the TSS the line adapters are low-speed scanners (LSSs).

For the HPTSS the line adapters are high-speed scanners (HSSs).

For the ESS the line adapters are Ethernet LAN adapters (ELAs).

For the TRSS the line adapters are token-ring adapters (TRAs).

line interface coupler (LIC). A circuit that attaches up to four transmission cables to the controller (from DTEs, DCEs, or telecommunication lines).

link protocol. The set of rules by which a logical data link is established, maintained, and terminated, and by which data is transferred across the link.

Logrec. Error logging file managed via the operating system.

low-speed scanner. Line adapter for lines up to 256 kbps. It is composed of a communication scanner processor (CSP) and a front-end low-speed scanner (FESL).

maintenance and operator subsystem (MOSS). The part of the controller that provides operating and servicing facilities to the user's operator and the IBM service representative.

microcode. A program that is loaded in a processor (for example, the MOSS processor) to replace a hardware function. The microcode is not accessible to the customer.

modem (modulator-demodulator). See DCE.

MOSS input/output control (MIOC). The circuit that controls the input/output from/to the MOSS.

multiplexer channel. A channel designed to operate with a number of I/O devices simultaneously. Several I/O devices can transfer records at the same time by interleaving items of data. See also *byte multiplexer, block multiplexer*.

multiplexing. The division of a transmission facility into two or more channels by allocating the common channel to several different channels, one at a time.

multipoint connection. A connection established among more than two data stations for data transmission. The connection may include switching facilities.

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

network. See *user application network*.

Network Control Program (NCP). An IBM licensed program that provides communication controllers supports for single-domain, multiple domain, and interconnected network capability.

nonswitched line. A connection between systems or devices that does not have to be made by dialing. The connection can be point-to-point or multipoint. The line can be leased or private. Contrast with *switched line.*

offline. Status of MOSS when the latter is not connected to the CCU control program.

online. Status of MOSS when the latter is connected to the CCU control program.

online tests. Testing of a remote data station concurrently with the execution of the user's programs

(that is, with only minimal effect on the user's normal operation).

operator console. The IBM Operator Console that is used to operate and service the 3745 through the MOSS. A local console must be located within 7 m of the 3745. Optionally an alternate console may be installed up to 120 m from the 3745, or a remote console may be connected to the 3745 through the switched network.

owning host. A host which can IPL an 3745 and also run application programs.

partitioned emulation programming (PEP) extension. A function of a network control program that enables a communication controller to operate some telecommunication lines in network control mode while simultaneously operating others in emulation mode.

point-to-point connection. A connection established between two data stations for data transmission. The connection may include switching facilities.

Post, Telephone, and Telegraph (PTT). A generic term for the government-operated common carriers in countries other than the USA and Canada. Examples of the PTT are British Telecom in the United Kingdom, the Deutsche Bundespost in Germany, and the Nippon Telephone and Telegraph Public Corporation in Japan.

scanner. See *line adapter*.

single. Configuration with one CCU.

selector channel. An I/O channel designed to operate with only one I/O device at a time. Once the I/O device is selected, a complete record is transferred one byte at a time. Contrast with *block multiplexer channel* and *multiplexer channel*.

service representative. See IBM service representative.

services. A set of functions designed to facilitate the maintenance of a device or system.

start-stop (SS) transmission. Asynchronous transmission in which a group of bits is (a) preceded by a start bit that prepares the receiving mechanism for the reception and registration of a character, and (b) followed by at least one stop bit that enables the receiving mechanism to come to an idle condition pending reception of the next character.

switchback. Operation to reset a twin backup configuration from fallback to initial state.

switched line. A transmission line with which the connections are established by dialing, only when data transmission is needed. The connection is point-to-point and uses a different transmission line each time it is established. Contrast with *nonswitched line*.

Synchronous Data Link Control (SDLC). A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. SDLC conforms to subsets of the Advanced Data Communication Control Procedures of the American National Standards Institute and High-Level Data Link Control (HDLC) of the International Standards Organization.

synchronous transmission. Data transmission in which the sending and receiving instruments are operating continuously at substantially the same frequency and are maintained, by means of correction, in a desired phase relationship. Contrast with *asynchronous transmission*.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information through a user application network. The structure of SNA allows the users to be independent of specific telecommunication facilities.

token-ring adapter (TRA). Line adapter for IBM Token-Ring Network, composed of one token-ring multiplexor card (TRM), and two token-ring interface couplers (TICs).

token-ring subsystem (TRSS). The part of the controller that controls the data transfers over an IBM Token-Ring Network.

transmission interface. The interface between the controller and the user application network.

transmission line. The physical means for connecting two or more DTEs (via DCEs). It can be nonswitched or switched. Also called a *line*.

transmission subsystem (TSS). The part of the controller that controls the data transfers over low- and medium-speed, switched and nonswitched transmission interfaces.

The TSS consists of:

- Low-speed scanners (LSSs) associated with
- LIBs
- Serial links (SLs).

TSST board. Line adapter board for token-ring adapters.

twin. Configuration with two CCUs.

twin-dual. Mode of operation with two CCUs operating simultaneously in two distinct subareas.

twin-backup. Mode of operation identical to twin-dual with fallback capability.

twin-standby. Mode of operation with one CCU active and the other in standby, ready to take over.

two-processor switch (TPS). A feature of the channel adapter that connects a second channel to the same adapter.

user application network. A configuration of data processing products, such as processors, controllers, and terminals, for the purpose of data processing and information exchange. This configuration may use circuit-switched, packet-switched, and leased-circuit services provided by carriers or the PTT. Also called *user network*.

V.24, 25, 35. CCITT recommendations on transmission interfaces.

wrap test. A test that checks attachment or control unit circuitry without checking the mechanism itself by returning the output of the mechanism as input.

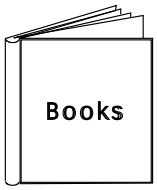
X.20 bis, 21, 21 bis, 21 native, 25. CCITT recommendations on transmission interfaces.

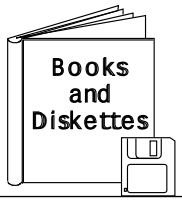
Bibliography

Customer Documentation for the 3745 (Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A) and 3746 (Model 900)

Table 68 (Page 1 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

This customer documentation has the following formats:





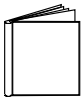
Finding Information		
		3745 Models A and 3746 Books Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.
	SA33-0172	***IBM 3745 Communication Controller*** ***Models 210 to 61A*** ***IBM 3746 Expansion Unit Model 900*** ***Customer Master Index***[1] Provides references for finding information in the customer documentation library.
Evaluating and Configuring		
	GA33-0092	***IBM 3745 Communication Controller*** ***Models 210, 310, 410, and 610*** ***Introduction*** Gives an introduction about the IBM Models 210 to 610 capabilities. For Models A refer to the *Overview*, GA33-0180.
	GA33-0180	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Overview*** Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

Table 68 (Page 2 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

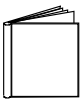
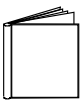
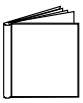
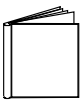
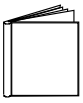
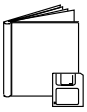
 GA33-0457	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Expansion Unit Model 900*** ***Models 900 and 950*** ***Planning Guide*** Planning for: • Field upgrades • Service processor and alert management configuration • Network integration (NCP, APPN, and IP control) • Physical installation.
Preparing Your Site	
 GC22-7064	***IBM System/360, System/370, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
 GA33-0127	***IBM 3745 Communication Controller*** ***Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation	
 GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
 SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
 SA33-0416	***Line Interface Coupler Type 5 and Type 6*** ***Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.
 SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using: – DCAF program – Telnet Client program.
Customizing Your Control Program	

Table 68 (Page 3 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

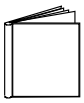
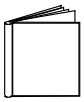
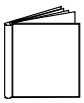
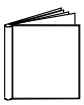
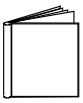
	SA33-0178	***Guide to Timed IPL and Rename Load Module*** Provides VTAM procedures for: • Scheduling an automatic reload of the 3745 • Getting 3745 load module changes transparent to the operations staff.
Operating and Testing		
	SA33-0098	***IBM 3745 Communication Controller*** ***All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.
	SA33-0177	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 17A to 61A, and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node and IP Router.
	SA33-0097	***IBM 3745 Communication Controller*** ***All Models***[3] ***Advanced Operations Guide***[1] Provides instructions for advanced operations and testing, using the 3745 MOSS console.
	On-line Information	***Controller Configuration and Management Application*** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources. Is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller*** ***All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.
	On-line Information	***Problem Analysis Guide*** An on-line guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

Table 68 (Page 4 of 4). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900



SA33-0175

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Alert Reference Guide

Provides information about events or errors reported by alerts for:

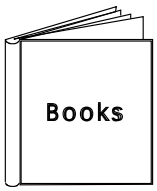
- IBM 3745 Communication Controller Models A[2]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

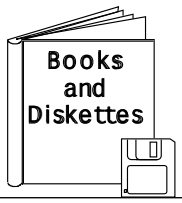
[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

Customer Documentation for the 3745 (Models 130, 150, 160, 170, and 17A) and 3746 (Model 900)

Table 69 (Page 1 of 3). Customer Documentation for the 3745 Models 130 to 17A and 3746 Model 900

This customer documentation has the following formats:





Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

SA33-0142

IBM 3745 Communication Controller
Models 130, 150, 160, 170, and 17A
IBM 3746 Expansion Unit Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring

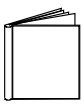
GA33-0138

IBM 3745 Communication Controller
Models 130, 150, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.



GA33-0180

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

GA33-0457

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Guide

Planning for:

- Field upgrades
- Service processor and alert management configuration
- Network integration (NCP, APPN, and IP control)
- Physical installation.

Preparing Your Site

Table 69 (Page 2 of 3). Customer Documentation for the 3745 Models 130 to 17A and 3746 Model 900

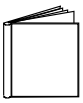
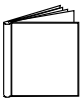
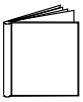
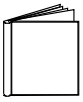
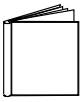
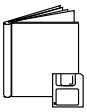
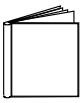
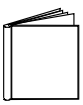
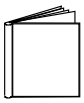
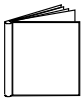
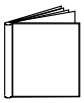
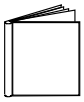
	GC22-7064	***IBM System/360, System/370, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information on physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
	GA33-0140	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***Preparing for Connection*** Helps for preparing the 3745 Models 130 to 170 cable installation. For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
	SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
	SA33-0416	***Line Interface Coupler Type 5 and Type 6 Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.
	SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900, using: – DCAF program – Telnet Client program.
Customizing Your Control Program		
	SA33-0178	***Guide to Timed IPL and Rename Load Module*** Provides VTAM procedures for: • Scheduling an automatic reload of the 3745 • Getting 3745 load module changes transparent to the operations staff.
Operating and Testing		
	SA33-0098	***IBM 3745 Communication Controller All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.

Table 69 (Page 3 of 3). Customer Documentation for the 3745 Models 130 to 17A and 3746 Model 900

	SA33-0177	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic Operations Guide[1]*** Provides instructions for daily routine operations on the 3745 Models 17A to 61A and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node, and IP Router.
	SA33-0097	***IBM 3745 Communication Controller*** ***All Models[3]*** ***Advanced Operations Guide[1]*** Provides instruction for advanced operations and testing, using the 3745 MOSS console.
	On-line Information	***Controller Configuration and Management Application*** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources. Is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Controller Configuration and Management: User's Guide[5]*** Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller*** ***All Models[3]*** ***Problem Determination Guide[1]*** A guide to performing problem determination on the 3745 Models 130 to 61A.
	On-line Information	***Problem Analysis Guide*** An on-line guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Alert Reference Guide*** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

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IBM 3745 Communication Controller
All Models
Advanced Operations Guide

Publication No. SA33-0097-09

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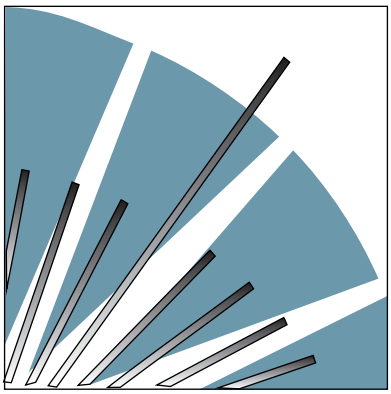

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